

KANSAS FARMER



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THE UNDERFLOW.

It took the Government scientists a long time to learn about the underflow waters of the Kansas plains what the well-diggers and farmers knew from the earliest times. The term "underflow" was formerly derided as a misnomer, an absurdity; now it is in good and regular standing as expressing an important and well verified fact.

The U. S. Geological Survey has investigated the underflow of the Arkansas, directing its labors especially to the vicinity of Garden City, Finney County, Kansas.

The work of investigation consisted in accurately mapping the water plane within a distance of 6 to 10 miles from the river channel, and in making observations by the electrical method of the rate of movement of the underflow. The slope of the water plane has been found to be between 7 and 8 feet to the mile in a general easterly direction, and from 2 to 3 feet to the mile toward the river channel from the country immediately to the north and south. At the first set of underflow stations, which extended in a north-south line about 2 1/2 miles west of Garden City, the velocities of the ground waters were found to be remarkably uniform, varying between 8 and 11 feet per twenty-four hours. The gravels, except occasional layers of silt, were exceedingly uniform in size and character of grain. The stations at which the determinations were made extended from the edge of the sand-hills on the south to a distance of about 2 miles north of the river channel.

Similar determinations were made at a series of stations near Sherlock, Deerfield, and at points near Lakin and Hartland. The results differed little from those obtained at the earlier stations, except that more sorting of the gravels has taken place at these latter points, giving greater variety to the rate of movement. The usual velocities vary between 6 and 24 feet for twenty-four hours, the average being not far from 8 feet per twenty-four hours. The quantity of ground water that is passing down-stream is so great and the water passes through the gravel so freely that there is no surplus left to form surface streams or to form a perennial supply for the Arkansas River.

The investigation showed that in time of flood the Arkansas River contributes water to the underflow. Existing plants which supply water for irrigation along the Arkansas were carefully tested. The cost of pumping is low on account of the very large amount of water obtained when the water in the wells is lowered only 5 to 7 feet. The intention is to erect a pumping plant to collect the underflow waters for irrigation.

It is hoped that the investigation will be extended to other portions of the plains region. The "sheet water" under the uplands is by many believed to be a great moving body of water, much of which enters the soil on the slopes of the Rocky Mountains. Doubtless the "sheet water" is greatly augmented if not entirely derived from percolation of rain-water which falls upon the plains. But has it a motion similar to that of the underflow of the Arkansas?

THE HARE CHEWS THE CUD.

EDITOR KANSAS FARMER:—Will you please answer the following question in the KANSAS FARMER? Does the hare chew the cud?

URIAH SLABACH.

McPherson County.
The Bible is pretty good authority

on natural history as well as other subjects. It says in Deuteronomy 14:7: "Nevertheless these shall ye not eat, of them that chew the cud, or of them that divide the hoof; as the camel, and the hare and the coney; for they chew the cud, but divide not the hoof; therefore, they are unclean unto you."

THE GROWTH OF LAND TENANCY.

A tendency towards the centralization of lands in the hands of a few individuals is one of the modern economic developments to which attention is just now being directed in Missouri. One man in Atchison County, Missouri, owns over 46,000 acres; the Scully lands in Bates County comprise about 50,000 acres; the Hunter interests in Southeast Missouri include 35,000 acres; Rankin is said to own 36,000 acres; the Stone Land Company has 35,000; the Deering Harvester Company owns immense tracts of unknown extent in the most fertile section of Southeast Missouri, and there are many other holdings equally large. The same misfortune is developing in Kansas.

George B. Ellis, secretary of the Missouri State Board of Agriculture, calls it "an unquestionable tendency towards a tenancy system similar to that which prevails in the countries of Europe." He thinks, however, that it has not reached sufficient proportions to cause alarm for the immediate future.

H. J. Waters, dean of the Missouri Agricultural College, discerns the same movement:

"If the present tendency towards the purchase of real estate by non-residents is continued," he says, "we are at the beginning of a tenancy system with all of its attendant disasters. A

tenant system of farming will seriously retard agricultural progress, interfere with the improvement of rural schools and farm homes, and affect adversely the intelligence and prosperity of the State. Let the American farmer become a tenant, and in a few generations European conditions will be duplicated on American soil; the farmer will be a peasant without spirit or ambition. Unquestionably, the present tendency is in this direction. How it will end no one can foresee."

BLOCKS OF TWO.

The regular subscription price of the KANSAS FARMER is one dollar a year. That it is worth the money is attested by the fact that thousands have for many years been paying the price and found it profitable. But the publishers have determined to make it possible to secure the paper at half price. While the subscription price will remain at one dollar a year, every old subscriber is authorized to send his own renewal for one year and one new subscription for one year with one dollar to pay for both. In like manner two new subscribers will be entered, both for one year, for one dollar. Address, Kansas Farmer Company, Topeka, Kans.

POINTS ON BREEDING SEED-CORN.

Plants, like animals, are susceptible of improvement by breeding. The fact that plants, as well as animals, are possessed of both male and female parents is now generally recognized. It opens a field for experimental work in the domain of crops as inviting and as promising of results as that occupied by the breeder of animals.

Like tends to produce like in plants

as well as in animals. The union of the excellent, wisely selected, is likely to result in greater excellence in the progeny. In plants as in animals "the feed is as important as the breed," so that wise selection must be followed by judicious culture in good soil.

Of the cultivated plants none is more pliable in the hands of the breeder than is corn; none responds more freely to good soil and good cultivation; none presents more variations on account of inherent qualities, and none more freely crosses.

To enter a little into the elementary facts about corn, it is well to recall that the male blossom of corn is the tassel and the female is the silk.

The falling of the yellow dust, or pollen, from the tassel upon the silk is essential to the production of grain and is called fertilization.

Experiments have been made in close fertilization, that is, in supplying to the silk pollen from the tassel of the same stalk. This has resulted in deterioration in the offspring. Corn naturally distributes its pollen widely, and we may well take this as a hint that self-fertilization is to be guarded against by the breeder. This doubtless takes place in nature occasionally and may be, and probably is, one of several possible causes for variations in productivity recently discovered.

It will not be possible here to enter into a detailed discussion of points to be observed in the improvement of corn. An important practical question, however, is, how can the farmer who reads this improve his corn by breeding, and that without undertaking confusing and intricate problems? It is the purpose of this article to indicate a line of work, simple in itself, which

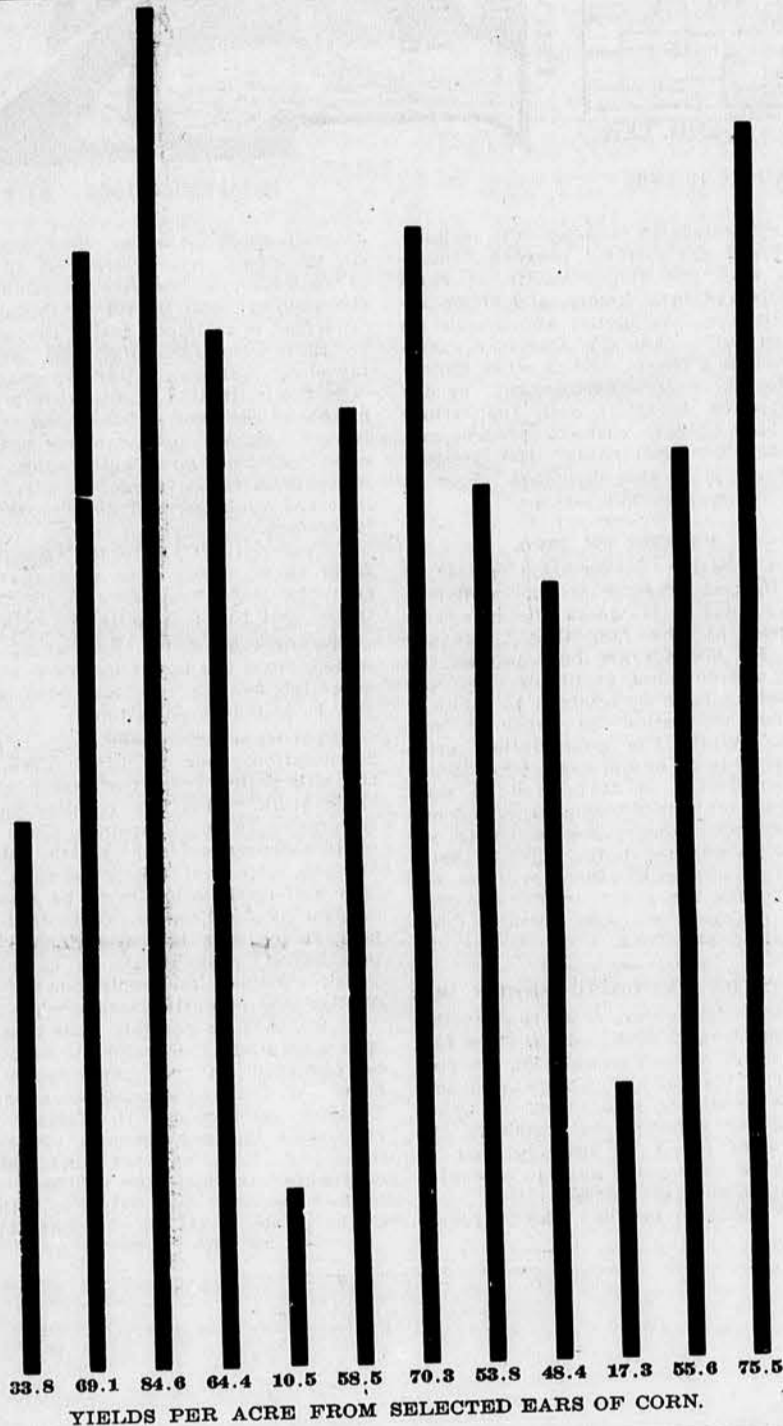


IAMS' ESPOIR-DE-RAGNES (21653).
Bay, Royal Belgian, 5 years old; weight 2,140 Pounds; second prize winner at Nebraska State Fair, 1905. A "real Dutchman"—one of 120 "toppers" that must be sold at \$1,000 and \$1,500 by Frank Iams, St. Paul, Neb.

will enable the busy farmer to improve the yield of his corn by the selection and breeding of a strain suited to his conditions.

In an experiment at the Kansas Experiment Station, several of the best ears were selected from a lot of good seed-corn. The corn from each ear was planted in a row and the rows of these several selected ears were placed side by side through a field of corn of the same variety. At gathering time the product of the several ears was kept separate and the yield per acre was computed.

There was surprising variation in the yields as shown by the following diagram and table:



Whatever may have caused the great variation in yield, the fact of the variation is most significant. When one ear produces a yield of 84 bushels per acre while another produces about 10, there attaches an importance to seed selection not before recognized. It should be remarked that the ears producing the extremely low yields produced a poor stand, showing poor vitality. Whether this low vitality resulted from some unseen cause, such as self-fertilization, or from some incident, such as exposure after the corn was made, is not known. Whatever the cause, the wise grower will do well to avoid such ears in selecting his seed. These can be eliminated by testing a few grains from each ear.

But the ears that gave good stands gave notable variations in yield. If one could produce for future planting, seed having a percentage only of the best yielding ears, is there any question of the probability that a strain tending to high yield would be developed?

It is entirely practicable to produce such a strain; and that without more trouble than the general farmer would find warranted. Following is the suggested method: Select say 50 or 100 ears from the best obtainable seed. Let these ears be as nearly perfect as possible. Let a few grains from each be tested. Reject every ear that does not show perfect germinating power and vigorous growth. Of the remaining ears plant half of the grains from each

ear in a row as was done in the ear test above described—in shelling take out entire rows. Label the rows planted with the half of the grains from the ears, and label the half of the grains not planted so as to be able to identify them. Put away the unplanted grains in packages where the mice can not get at them and where they will have a favorable opportunity to retain their vitality until next year. Give the seed-corn rows the best of care and cultivation, and ascertain carefully the yield per acre from each half ear. Selected produce of the best rows will be good seed for general planting next year; but the fine work of breeding will be done with the half-ears that

were saved over. Select from this corn the packages corresponding to the rows that produced the large yields; plant two rows from each selected package, giving to the highest yielding a high yield on either side. Cultivate well this second-year crop of seed-corn. At testing time, and before any pollen has been shed, go through the seed rows and pull out all tassels from the rows from which the seed is to be saved for future breeding. This will insure against close breeding and will make it reasonably probable that each of the breeding ears has good parentage on both sides.

The produce of these detasseled rows should be subjected to rigid selection and should be so planted that the percentage of future seed can be measurably controlled. Seed produced in this way should be worth the cost and should improve rapidly from year to year.

E. Krauser & Bro., of Milton, Pa., are the manufacturers of this wonderful preparation which has taken the place of the old-fashioned process of smoking meats in a smoke-house. It is far cleaner and more convenient, and it saves a lot of time and work. It not only perfectly cures meat, but gives it a sweetness and delicious flavor that is peculiarly its own and perfectly wholesome. All that is necessary is to put it on with a brush; only takes a few minutes and there's no opportunity for insects to contaminate the meat. Any one writing to the manufacturers will receive circulars fully explaining the merits of the process.

Miscellany

Patent Rights.

EDITOR KANSAS FARMER:—On account of the average farmer's lack of knowledge concerning patent rights he is sometimes imposed upon by men who take advantage of his lack of information. But recently, several farmers of Rice County, Kansas, had an unsatisfactory experience in this respect. A certain man, representing a Concrete Post Co., came to Lyons, the county seat, and during the few weeks he was located there did business with these farmers above referred to. This man claimed the rights of a Government patent, and made broad claims for his patent, but of course failed to exhibit to these men certified copies of the letters patent under which he claimed protection. He claimed that he was not operating a patent-right scheme, yet he claimed the protection of letters patent. To evade the State laws concerning patent rights, he claimed to not offer territory for sale. By taking advantage of technicalities his deals with the farmers were so arranged that in the assignment of territory these men practically paid a high price for the territory assigned them. These farmers did not learn the number nor date of issue of the letters patent under which they were promised protection, and, having seen no certified copy of letters patent with specifications attached, they do not know the points covered by their patent, if indeed they have the protection of a patent at all. They took Mr. Betz's word for all this, without carefully investigating this matter for themselves, and gave him their notes or paid him their money. As a result these men are generally dissatisfied with both their purchase and their experience.

Patents are legal, right and proper when they serve the purpose intended by the Government. The object of the Government in granting letters patent is to stimulate and encourage the exercise of inventive genius by granting to the inventor of useful devices certain rights and protection. Letters patent give to the inventor or patentee "the exclusive right to make, use and vend" his invention "throughout the United States and the territories thereof" for a period of seventeen years from date of issue. And the patent laws of our Government grant absolute protection to the extent the patented article is actually covered by the specifications attached to the letters patent.

No person should purchase a patent right, or secure territory under a patent claimed, without first examining a copy of the letters patent certified to by the Commissioner of Patents, Washington, D. C., with copy of specifications attached thereto. By giving the number of a particular patent any person can secure from the Commissioner of Patents a certified copy of the letters patent with specifications attached, if he will enclose with his request the required fee of eighty cents. The certified copy is proof conclusive that letters patent have been granted by the Government, and the attached copy of specifications determines the points actually covered by the letters patent. And further, no person should invest money in a patent right, or expect protection under any particular patent, without first satisfying himself that the party offering a patent right or promising protection under a particular patent, is either the patentee or the legal owner by deed of assignment. The fact that parties dealing in patent rights or promising protection under a Government patent fail to carry with them, or are loth to exhibit, certified copies of the patent claimed with specifications attached, is indicative that something is wrong, either with the patent claimed or the method of business practiced. If farmers will observe these precautions, they will not easily be caught napping and will be saved loss and unsatisfactory experience along this line. H. H. ZEIGLER, Reno County.

Taxation.

EDITOR KANSAS FARMER:—Can we not have a little discussion on the above subject, as the time is drawing near for the assessors to meet and form a basis of agreement? Possibly some one will tell us where to find the law authorizing them to take any per cent of the real value of property for taxation instead of returning it at its real or true value as they swear they do. They do not seem to give themselves range enough in valuing property. We have land in our county (Stafford) that sold recently as low as \$3

and some as high as \$50 per acre, and the \$3 land is the dearest. Some of our land near town and some tracts in town are worth more than \$100 per acre and some in this county is dear at \$2. The former is assessed at about 10 per cent of its value and the latter at 50 per cent of its value. And what is true about land is also true of the improvements on it—household goods and other personal property.

It looks very bad to see a lot of stock on a farm that does not appear on the assessment list; and to see a farmer haul off or sell more grain than he gives in for taxation; and to see and know that about all of our taxpayers have cash on hand every day in the year and not a cent appears in their sworn statements. And it looks equally as bad to hear our merchants and business men tell what their stock of goods amounts to or invoices, and then to look at their sworn statement to the assessor, and know that the latter statement is false. An old subscriber to your paper and a taxpayer in Stafford County.

Likes Cement Floor—How Made.

EDITOR KANSAS FARMER:—I read an article in the KANSAS FARMER in regard to cement floors and asking those to write who had experience in that kind of floor. In 1903 I put a floor in my horse barn and will say that it is the best floor that I ever had. I have tried dirt floors and board floors, and the cement beats them all. I made the ground solid, took coarse gravel nine parts, cement one part, mixed them thoroughly, wet them when mixed and put on that concrete six inches thick and leveled down. When that set so we could work on it, we took coarse sand three parts, and cement one part, and gave it a slope of four inches, and troweled it smooth. It is water-proof and all right, and it cost me \$5 less than the board floor did, and is ten times better. Use plenty of bedding and I will guarantee it to be satisfactory. F. M. STAMBACH, Sedgwick County.

Reasonable Switch-Board Rates.

EDITOR KANSAS FARMER:—Are you sure that you are well advised as to the price usually charged by telephone companies, for central service of rural or farmers' lines? I notice in the last KANSAS FARMER that you say to "A Subscriber" from Harvey County, that 50 cents a 'phone per month is cheap, and recommend him to contract for as long period as he can at that price. I am told that in Russell and Wilson Counties and in other parts of this country, the price is from 15 to 25 cents per 'phone, and I should think 50 cents an exorbitant price, as this is for switch-board service only, and does not include any expense for care of line, etc. I do not wonder that 'phone companies are anxious to contract for a long time ahead at that price, where individual 'phones cost an average of only \$1 per month. Gray County. S. E. BARTON.

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Agriculture

Seed-Corn, Moles, and Birds.

EDITOR KANSAS FARMER:—Please let me know through the columns of your valuable paper the proper method of treating seed-corn with coal-oil or turpentine to prevent moles and birds from taking it. G. H. COLEMAN. Montgomery County.

You will find it difficult to make any application of strong repellants to seed-corn that will prevent the attacks of mice and birds that will not also endanger the germination. This danger will be considerable in the use of the caustic fluids that you mention. In his work on "The Cereals in America," Professor Hunt says that the application of coal tar is effective, but adds that there is danger of decreasing the germination. The best mode of protection against the mice is undoubtedly their destruction by the use of poison, for which purpose the poison supplied by the State Agricultural College for killing gophers is best adapted. This poison is a solution of strychnine with other substances to make the bait attractive to the mice, and is applied by soaking corn in the liquid, and placing the poisoned grain in the places that the animals frequent. This liquid does not appreciably affect the germination as has been found where the baits have been covered, as the corn seems to grow as well as where the poison is not applied. This poison is supplied by the college at the cost of making, \$1.10 per can, and will be shipped on orders enclosing the price. E. A. POPENOE, Field Agent. Kansas Experiment Station.

Seven Questions.

I want to know if it would be advisable to send to Manhattan or Hays City for seed-corn? Would it do as well here as it does there? Which is the best yielder, the yellow dent, white, or bloody butcher? What will be the cost per bushel? Do they test the corn they send out for seed at either place? Is there any difference in the way corn is detasseled, whether by cutting or pulling? How can a person tell what the ground needs most of all? Trego County. J. L. MANZER.

It would be advisable for you to get western-grown seed-corn. I do not think you can secure any seed from the Fort Hays Branch Station at this time. Corn grown as far east as this station will not succeed well with you the first season. I refer you to E. W. Albright, Brewster, Kans., as a Western grower of corn. As to whether the yellow, white, or bloody butcher type of corn will yield best will depend on whether the corn is bred and adapted for growing in your part of the State; also upon the variety. We make only general tests of the seed-corn which we send out; that is, we test the germination of a large batch of corn by taking a few kernels from a large number of ears. I have mailed circular giving names of varieties of corn which we have for sale, with price of seed per bushel.

In detasseling corn it is better to pull the tassels than cut them off, as by cutting off the tassels you are apt to injure the leaves. The objection to detasseling by pulling is that the stalks are often so high in this part of the State that the top is not easy to reach, but in Western Kansas this will not usually be the case. About the proper time for detasseling, namely, just when the silks are beginning to appear and the tassel are fully formed, the tassels pull very easily.

I do not fully understand your seventh question. You probably refer to the use of manure and fertilizers. As a general answer regarding the use of fertilizers in Western Kansas, I would not recommend the use of chemical fertilizers. What our Western lands require more than anything else is more humus and organic matter. This can be supplied by dressings of barnyard manure or by growing crops for green manuring. One of the best crops of the annual legume class to grow is cow-peas. This crop may be planted in June and plowed under as green manure in the latter part of summer, or the crop may be used for pasture, or taken off for forage, in which case it would simply be a crop in rotation and would not furnish so much organic matter and humus as when plowed under for green manure. Other ordinary crops may be used for green manuring such as wheat and rye sown in the fall and plowed under late in the spring. In preparing the ground for corn, Kafir-corn, or other cultivated crops. Spring-sown crops such as barley, sorghum, Kafir-

corn, etc., may be used for green manuring, plowing the crop under early enough in the summer so that by harrowing and disking the land may be put into good condition for sowing wheat in the fall. A thorough system of crop rotation put into practice and carried out in your part of the country will keep the land in better condition for producing large crops and at a less expense than any other method of cropping and fertilizing which I can recommend. It will not pay at the present time to use chemical fertilizers on our western land for growing ordinary crops such as wheat and corn. I enclose copy of my notes on crop rotation which may be of some assistance to you in introducing a system of cropping which will improve and maintain the fertility of the soil. A. M. TENEYCK.

Spring Crop to Precede Alfalfa.

What do you advise sowing for a spring crop on ground which it is intended to seed to alfalfa next fall? Please give directions for seeding alfalfa, and inform me where to purchase good seed. J. SCHROLL. Lincoln County.

Good crops with which to precede the sowing of fall alfalfa are wheat, oats, barley, millet, field-peas, cow-peas, or cultivated crops, such as potatoes or early corn which can be taken off early enough so that a good seed-bed can be prepared by disking and harrowing before the last of August or first of September when the alfalfa should be sown. Cow-peas are a very excellent crop with which to precede the sowing of alfalfa. The peas may be sown from the first to the middle of June with an ordinary grain-drill in a well-prepared seed-bed, sowing in drills eight to twelve inches apart. Harvest the crop for forage and prepare the seed-bed for sowing alfalfa by disking and harrowing.

As a rule, I prefer to disk and harrow in preparing for fall seeding of alfalfa rather than to plow late in the summer or early in the fall. Even in grain stubble, unless the ground is too weedy, disking and harrowing will be preferable to plowing. However, if thought desirable, the stubble ground should be plowed soon after harvest and a seed-bed prepared by harrowing at intervals until seeding time. Also it is desirable to use a sub-surface packer in order to pack and pulverize the soil and secure a well-settled, finely pulverized seed-bed. A seed-bed for alfalfa should not be loose and mellow below the point at which the seed is planted, but should be rather firm below the seed and mellow but finely pulverized above the seed. Care should be taken to conserve the soil moisture and to sow when the ground is in the best condition for germinating the seed and starting the young plants. A. M. TENEYCK.

Field-Peas and Oats.

I have planned to seed my last year's corn-field to Canada field-peas and oats next month.

I read a copy of the report of the meeting of the Kansas State Board of Agriculture which said that Canada field-peas should be plowed under, say four inches deep. I have interpreted that statement as meaning the ground should be cleared of all trash, the peas sown on the ground and then plowed under, making but one plowing. Am I right?

I am doing this for both fertility and forage. I think the report said two bushels of peas to the acre. I shall, however, plant one bushel each of peas and oats. J. A. MASSA. Wyandotte County.

I believe a good method of planting field-peas is to plow the ground first four to eight inches deep, as may be your custom, and after preparing a good seed-bed plant the peas with the grain-drill in drills six to twelve inches apart. It is well to plant rather deep, probably three inches deep in a well-prepared seed-bed. I have never tried the method of plowing under peas, and although I have no doubt that this would give good results where the crop is grown especially for fertilizer or green manure, yet you would hardly get so even a stand of peas or so large a crop as by preparing the seed-bed and planting the peas as described above. It is usual to plant about two bushels of peas per acre when sown broadcast or in close drills for forage or green manure. It would not be necessary to remove the trash from the ground provided you plan to plow the peas under. Simply scatter the peas broadcast or go over the ground with the drill in order to distribute the seed and then plow, taking care not to plow the peas under too deep. After plowing, it would be well to give a thorough harrowing in order to pulverize the

soil and put it in good seed-bed condition for starting the peas and growing the crop.

Your method of sowing field-peas and oats together for forage is a good one. This is preferable to sowing peas alone because the oats hold the peas up, making it easier to cut the crop with a mower. A bushel of peas and a bushel of oats per acre make a good combination, although it may be desirable to sow a little more than a bushel of oats, say a bushel and a half of oats and a bushel of peas. A. M. TENEYCK.

Cure Alfalfa in Cocks.

EDITOR KANSAS FARMER:—I notice several suggestions as to the best method of curing alfalfa hay in this part of the country, where rains are common during the season for cutting it. Most farmers seem to require large sheds or some other too expensive form for an ordinary farmer with a small piece of alfalfa.

When I was a boy on a farm in New England, I was taught that the proper way to put up red clover was to put it up in cocks as soon as the dew was off and it was slightly wilted, and let it cure in the cocks; if necessary we opened it up once or twice to prevent it spoiling, depending upon the weather, of course. We were always provided with covers about three feet square to go over these cocks in case of a shower or a rainy day.

Would this not be a simpler and less expensive method for the ordinary farmer? I have had my experience with alfalfa and I hope to profit by some other person's experience. Kansas City, Mo. E. E. HOLMES.

Sows Alfalfa in Early Spring.

EDITOR KANSAS FARMER:—As it is nearing the time for spring sowing of alfalfa I thought it might be of interest to some of your readers to give you a little of my experience.

I have 100 acres of alfalfa, and every acre a perfect stand and it is said to be as fine a field as there is in Kansas. My alfalfa was all early spring sown, 70 acres in 1902, 20 acres in 1903, and 10 acres in 1904. My field is rich, level, Medicine River bottom. The field was literally full of cockle-burs. I commenced plowing very early in March, plowing seven to eight inches deep and followed each day with harrow, then cross-harrowed, rolled, harrowed and rolled again. I then sowed about twenty pounds of the best seed per acre, with an end-gate, broadcast seeder and lightly harrowed after seeder. I sowed the latter part of March. The alfalfa came up in a few days and was 7 to 10 inches high before cockle-burs made an appearance; but when they did come they were as good a stand as the alfalfa. The burs finally caught up with the alfalfa and all were about knee-high. Then a very close mowing was commenced and pushed until the whole field was gone over. Both burs and alfalfa were a quick, sappy growth and were allowed to lay on the field as the mower left them. The hot sun dried them up wonderfully and the alfalfa sprang up at once and there has not been a bur in the field since. I mowed twice and got considerable good hay at each cutting. Does any one suppose that if I had waited until all danger of frost had passed I would have succeeded? No, the burs would have come up with the alfalfa and smothered it out.

On 20 acres of this sowing the ground froze hard enough in one night to bear up a horse, with the alfalfa partly through the ground, but it never hurt it. Alfalfa is about the first vegetation to start in the spring and it stands to reason that it should be sown early in order to get ahead of weeds; then constant and close mowing will do the rest. I do not harvest fifty pounds of weeds in a summer's cutting (4 crops). I usually harrow thoroughly in early spring and fight gophers continually. The price of keeping a good alfalfa-field is eternal vigilance.

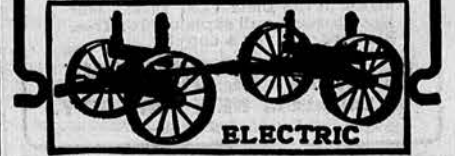
I delight in sowing alfalfa on weedy ground—but look out for grassy land. I think the only way to get a stand on grassy land is to sow early in fall; then in spring it gets such a start of the grass that it keeps it down. But on grassy land with spring sowing, the grass saps and weakens the alfalfa until it often dies, because mowing does not kill the grass but does kill weeds. I allowed 40 acres to seed second crop last year and thrashed 172½ bushels of fine seed and sold it for \$8 per bushel. From this 40 acres I cut a heavy first crop, then seed crop, and last a splendid third crop for hay. When I cut the first crop there were millions of worms. They resembled cut-worms and under the shocks and windrows one could rake them up by the peck. I had a few hogs running in the field and noticed

YOU Can Save a Lot of Work! Can Save a Lot of Money! Can Increase Your Comfort! Can Increase Your Profits!

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see that it has sills and frame made of oak, a ball and socket joint on front axle to prevent racking and twisting, and steel braces and steel truss rods to guard against warping and sagging. See that the apron does not run backward and forward on hilly ground, but insist on a continuous positive apron drive



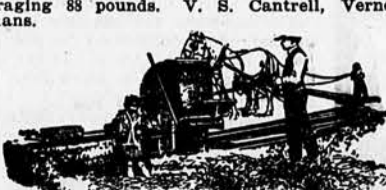
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that they were working very industriously at windrows and shocks, and on close inspection I noticed the hogs were feasting on worms. I then bought 160 head of shoats and put them in the field (it is hog-fenced) and they soon cleaned up the worms. When the seed-pods were beginning to ripen I noticed the hogs were eating them. I put the hogs in the feed-pen, fed them on corn and hay a few weeks, and sold them at a great profit.

My experience is to sow weedy land in early spring, and grassy land in early fall. Of course weedy land could be fall-sown. Our worst trouble here in fall-sowing is lack of moisture. I always sow broadcast. The seed is evenly put everywhere on the ground, while drilling puts it too thick in the drill-row and there is too much space between rows without seed. In the drills it is crowded too closely for rapid growth. I do not under any conditions want a nurse-crop; simply nurse the alfalfa by constant attention.

Barber County. M. T. WILLIAMS.

Success With Alfalfa at Small Cost.

EDITOR KANSAS FARMER:—As it is nearing the time for alfalfa-seeding I will venture a few suggestions to those interested in the matter.

The usual labor and expense is so great and the failures so numerous that the farmer though admitting the great value of an alfalfa-field, is deterred from making the attempt to secure the prize. I will risk the statement as a preface to my suggestions that a stand of alfalfa can be secured as cheaply and as surely as a stand of oats.

I will consider first the usual causes of failure. My experience and observations convince me that nine-tenths of the failures come from plowing and late spring sowing. In all but the eastern third of the State fall-sowing is impracticable, on account of prevailing fall drouths and grasshoppers. Freshly plowed ground is no more fit for alfalfa-seeding than for blue-grass or other grasses. You can seed an old road-bed easier than a nicely prepared garden bed. Never plow, no matter how forbidding your land looks. Any stubble- or corn-field on your farm is now ready for the coming spring seeding. It needs no years of training. You need the alfalfa and you can not afford to wait. "Do it now" should be your motto.

Now is the time to break down, rake and burn the weeds and corn-stalks. Then about the middle of March harrow until you have an inch or so of loose earth. If the corn ground is ridged, disk lightly so you can harrow down level. Now you are ready for seeding.

The best implement for seeding is an old-fashioned shoe-drill with seeder attachment. The attachment will cost about \$6 and your neighbors will want to hire the drill when you are through and you will soon have your money back and the drill for future use. The disk and hoe-drills run too deep and you had better broadcast. Get the best seed. Don't consider the price.

Now the time of seeding depends somewhat upon the season. I would say about March 20 in the southern counties of the State and on up to April 10 in the northern tier. If anything hinders you from seeding before April 10 don't seed at all but wait till next year. The chances are against your getting a stand after April 10. I have seeded every month from March to October and got a good stand; but the conditions must be all in your favor if you sow out of the proper season. In the early spring there is always sufficient moisture to bring up the plant. I got a good stand on twenty acres one of the driest seasons ever known in Kansas.

The weeds and grass do not bother early sowing. They do not start thickly till about May 1 and at that time the alfalfa is four to eight inches high, with vigorous, ample roots and no amount of dry weather and weed-choking will kill it. You may if you like broadcast on a March or April snow and it will cover itself. If you use a drill, seed six pounds to the acre. If you broadcast, use eight pounds. One pound of seed will give seven grains to the square foot. Four plants to the square foot is a good stand. If you ask why I sow 40 to 60 seed grains to the square foot I answer I do not know. Ask the fellows who put 140 grains to the square foot. I have sowed 20 pounds and 6 pounds of the same kind of seed on the same day with all the conditions the same and there seems now to be no difference in the stand. It all looks well. If too much seed is sown, I suppose that in time there will be worked out the survival of the fittest and your stand will be about the average. But sow no more than necessary and your

plants will be more vigorous to withstand dry weather and weeds. When you broadcast cover with slanting-tooth harrow. The plan I have suggested has always brought me success, while plowing and waiting till danger of frost is past brought me failure and depleted purse.

As to cost, the items are about as follows:

	Per acre
Preparation	\$0.40
Sowing25
Covering15
Seed	1.00
Total	\$1.80

The old way of seeding cost, for

	Per acre
Plowing and harrowing	\$1.75
Sowing25
Covering15
Seed	2.50
Total	\$4.65

This shows the difference between the cost of success and failure.

C. B. DAUGHTERS.

Planting Corn and How to Raise It.

JOHN D. ZILLER, HIAWATHA, KAN.

[This essay was awarded first place in the essay contest on "Planting Corn" which was conducted under the auspices of the Kansas State Corn Breeders' Association in 1905, winning the prize, a Victor corn-planter, donated for this purpose by Fuller & Johnson Mfg. Co., Madison, Wis.]

THE SEED.

The first and most important part in raising a good corn crop in my estimation, is pure seed, seed that is bred for a purpose and with a fixed standard and type of purity. If you do not have it, seed and get it from some reliable seed-corn grower, one who grows his own seed, and not from a merchant who buys his seed-corn by the car-load from Tom, Dick and Harry who do not know a pure-bred ear of seed-corn when they see it. If there is one thing that contributes more than another to the attainment of success in farming, or one thing that is absolutely necessary in agricultural success, it is the knowledge of pure seeds.

My effort as a breeder and grower of pure seed-corn in the last eighteen years has been to get the heaviest yielder and best feeding corn grown. Having tested a great many varieties, I know from experience what I am talking about. For illustration: If I send to some seed-corn grower for pure seed-corn, and after the crop is grown it is impossible to tell the type of corn I planted from a very inferior corn, I discard it and say, the man I bought the seed from don't know anything about breeding and selecting seed-corn. Like will produce like, in corn the same as in pure-bred stock. If he had bred that corn right and kept it pure, the crop would show.

In selecting seed-corn with many farmers, the main object had been to get seed that would grow. This is important but it is only one of the several important matters to be considered. A thorough knowledge of what you are planting, so you will get what you want after it grows is the question that should be decided. There is no question but that the annual yield of corn in the great corn-belt would be greatly increased by careful selection and change of seed-corn to one of the standard improved varieties.

THE SOIL.

We all agree on clover sod or new ground as the ideal place to raise corn, but we can not have this every year; and again it is absolutely impossible to lay down a fixed rule about plowing up new ground of meadows, for we often have to keep our meadows and pastures two or three years longer than we want to on account of not being successful in getting more land seeded down. There is one thing we can all do and all have, and that is fall plowing. From experience, my judgment is that it is best to plow in the fall all we can for corn. I have never had a failure on fall plowing. By plowing it in the fall and putting under a crop of trash and stalks, by spring it is all nicely rotted, and the soil has a better chance to freeze and pulverize, also to store up an abundance of moisture for the next summer's crop. This soil will stand the drouth and also excessive wet weather better than spring plowing, and work a hundred per cent nicer.

I have often heard farmers say they would plow more but want to pasture the stalks. In my opinion there are few fields of stalks that are worth what the fall plowing would be to the next crop. Just as fast as one field of stalks is husked I cut the stalks and plow them under about six inches deep. I keep the plows going till the ground

is frozen so I can not plow; then we all husk corn.

"Too dry to plow" is an old expression among the farmers. Let me tell you how to plow when they say it is too dry. The first thing you do, throw away your old half-worn plow-lays and go and get new lays put on, and I will guarantee you can plow and do a good number-one job, and no other kind pays. Whenever a plow-lay gets worn out so a farmer can not do good work in dry ground, it is time for a new one, and any farmer can pay for one in horse flesh and the difference in plowing on every ten acres he plows. Next, keep your plow sharp; this is a very essential part in good plowing. Another very important part in raising a good crop of corn is barn-yard fertilizer. I make it a point to keep all manure cleaned up around stables and yards and hauled out over the ground, spread very thin, and before the ground is matted I go over it with the disk to pulverize it and work it thoroughly into the soil.

PLANTING THE CORN.

In the spring as early as the land will permit, I harrow the ground down level by riding the harrow, and by the time the ground is ready for planting the weeds have about all made their appearance; then I list in rows three feet and six inches apart.

One-half day behind the lister after the ground gets warm I commence to plant with a John-Deere, number-nine, edge-drop corn-planter, which is one of the most complete corn-planters I ever saw. It drops one kernel at a time 99 times out of a hundred.

To insure a perfect stand I put all seed-corn through a Graham, seed-corn sorter before planting to take out all round and imperfect kernels that are missed by shelling off the butts and tips, thereby insuring a perfect stand. One great mistake made by many farmers is planting corn too thick. This is one cause of so many barren stalks and nubbins. One kernel in a place every 18 to 20 inches is enough on ground that has been corned for two or three years, and 16 to 18 inches on new ground or stubble land will bring more corn and better quality than closer.

CULTIVATING THE CORN.

It is almost impossible to lay down a rule to cultivate corn by, as the weather has a great deal to do with it. I use the Kirlin, two-row disk cultivator, the first time over, then harrow, then cultivate with a six-shovel riding cultivator. In shallow cultivation to keep the ground loose on top plow two or three times over as the corn or the ground needs, aiming to lay corn by with a fine loose mulch of soil to keep the ground from cracking open.

After forty-two years of constant corn-growing and eighteen years of pure-bred corn, I have this to say: the farmer that raises a crop of corn every year is the farmer that is coming to the front.

ESSENTIALS OF GOOD CORN CROP.

	Per cent
Pure-bred seed-corn	30
Planting at proper time	10
Ground in fine pulverized shape, fall plowed or rotated with other crops	30
Thorough cultivation	30
Total	100

Follow the above rule and you can raise a good crop every year.

Farm Notes.

N. J. SHEPHERD, ELDON, MO.

Stock with inherent good qualities will make money on the same feed and care which with a scrub will bring only loss.

A hundred rods of fence on a farm above actual need becomes a tax on labor and material that may be better cut off by removing the fence.

It is not enough to say, feed the products of the farm as far as possible, but they must be fed in such a way as to give a profit and save the manure.

Animals of vicious habits should never be used for breeding-purposes, as vices are transmitted. By careful breeding in this respect the disposition of the animals can be positively controlled.

Unless young stock be well cared for and kept constantly growing and in thrifty condition during the whole year, it is poor capital and will inevitably entail loss upon the owners.

For growing alone blue-grass is one of the very best grasses that can be grown on the farm. Once established it will withstand heavy tramping and close clipping with less damage than any other grass.

None but the brave deserves the fair.—Dryden.

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OUR ONE DOLLAR OFFER. Send us One Dollar, mention this Special Offer No. 23W10, state whether you want the 300, 400 or 500 pounds per hour capacity size and we will then come to your nearest railroad station the equal of any machine made, any machine you run, more simple to operate, less chance for wear, less chance to get out of order (almost impossible), less chance of ever needing repairs (and, by the way, we are ready to furnish any repair or part on a moment's notice always); will wear longer (we guarantee it 20 years). If after trying it out in your own way for all or any part of two months you do not find our Economy Separator all this and far more, if you and everyone who sees it run does not pronounce it by far the best cream separator they have ever used or seen, if you can't do with it everything you can do with any other cream separator made, and more and do it better, easier and in every way more satisfactory; if you don't feel after using the Economy 60 days, you wouldn't trade it even for any other six separators made, then return it to us at our expense any time within two months and we will immediately return all the money you paid out, including the freight charges paid by you. You will then have had the use of the machine without one penny of expense to you. Get the very best authentic record for close skimming of any other separator made and, size for size, the Economy will show nearly double the capacity of milk per hour, with little more than one-half the power, and skim the larger quantity of milk one-half closer. That's what the wonderful Economy will do.

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SEND US ONE DOLLAR and let us send you the best machine, the Economy, by freight C. O. D., subject to examination, balance payable after received, but if you don't send one dollar and let us send you the Economy, then by all means on a postal card or in a letter to us just say, "Send me your Free Separator Offers," and immediately by return mail, free, you will receive all our big cream separator books, copies of all plates, awards, medals, certificates, testimonials, guarantees, all our many special offers, challenges, all our liberal offers. Everything will go to you all in one package, free to you by return mail, postpaid.

DESCRIPTION OF THE IMPROVED ECONOMY CREAM SEPARATOR. IN THE ECONOMY the milk is automatically and continuously fed from a supply tank into the bowl which is revolved at very high speed by a crank and three speed developing gears. As the milk passes downward through the skimming device it is divided by the disc shaped section of the core into numerous thin layers in each of which the separation of milk and cream is instantaneous, the tremendous centrifugal force of the revolving bowl throwing the heavy skim milk outward and downward to the outlets at the bottom of the bowl, while the lighter cream or butter fat presses inward and upward to the cream exit at the top. Note the sectional view of one side of one of the separator cores; see how the currents of skim milk and cream are separated and move in opposite directions. Every one of these sections is a complete separator in itself, and as every drop of milk must pass from one section to the other from the top to the bottom of the bowl, not a particle of cream or butter fat has a chance of getting away, as it is forced out long before it reaches the bottom. It is practically twenty separators in one. The milk you put into it is acted on over and over again, skimmed and re-skimmed, and this simple, wonderful and powerful skimming device which no other manufacturer can use because protected by strong patents, explains why the Improved Economy outskims every cream separator ever invented, why it skims more milk and does it easier than any other, why it skims colder milk and older milk and does it better than any other cream separator, why it is the easiest running hand cream separator on the market. Even a child of twelve can do good work with the Improved Economy. **ALMOST SELF-CLEANING.** Three or four quart of hot water run through it and a moment's use of the brush (which we furnish), cleans it perfectly in the time you must wait for other machines to run down. Made from the best materials and is accurately fitted. The crank shaft is turned from a steel bar and it runs in a heavy anti-friction phosphor bronze bearings. **THE GRAM SPOUT, FEED CLIP AND FLOAT** are of heavy steel, retinned; seams and corners are heavily soldered, smooth and rounded. **THE RESERVOIR** is of ample capacity, of DXXXX bright charcoal tin, equipped with malleable handles and nickel plated brass faucet and cap. **THE FRAME** is extra substantial, of simple design and handsomely finished in blue enamel with gold stripings. **THE LEGS** are removable so that it may be fastened to a bench if desired. It is given thorough and exhaustive tests and when it reaches you it is in absolutely perfect adjustment and may be set up and used in just a few minutes. Complete instructions for setting up and operating are packed with each machine. The instructions are plain and simple, if you have never even seen a separator before, you can operate the Economy.

EXTRA PARTS. A large and small bristle cleaning brush with heavy tufted ends, a tinned steel wrench, a zinc oiler and a one quart can of best separator oil, also four lag screws for fastening machine to floor, an extra rubber bowl ring and screwdriver are furnished free with every Economy.

ABOUT REPAIRS. Our 20-year binding guarantee which goes with every Economy protects you against defects in material and workmanship, and any part that gives out through a flaw or through any fault in workmanship will be replaced by us, without a single cent of expense to you. If, however, in the years to come, any piece or part should be accidentally broken or lost, or if a bushing or other small part should require replacing, we can always furnish it promptly and at factory cost. If you keep only three cows it will pay you well to buy an Economy. It would pay you to sell a cow if necessary to buy an Economy, because with three cows and an Improved Economy you will make more money than with four cows without an Economy or with any other separator. You will get more cream from three cows with an Economy than from four cows without one. The Economy will pay for itself the quickest of any machine you ever saw. **IF YOU HAVE THE SLIGHTEST DOUBT** as to the merits of the Economy, if you think there is another machine made that will in anyway compare with it, then **WE ADVISE YOU TO SEND US \$1.00**, let us send you the Economy C.O.D. subject to examination, then get the agent, seller or maker of any other separator made, let him put his machine in your home, on the same terms and conditions that we ask you to try our Economy; then test them out side by side. If any other machine skims as close as our Economy, runs as easy, cleans as easy, is as little likely to get out of order, is as simple to operate, is as strong and durable, skims as thick cream, skims as cold milk or skims milk as old, if any other separator in the world will approach the wonderful Economy in any single one of these great features, then you need not keep the Economy you are not under the slightest obligation to keep our machine. You can return it to us (any time within two months), and all the money you paid out including freight charges will be returned to you.

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Stock Interests

PURE-BRED STOCK SALES.
Dates claimed only for sales which are advertised or are to be advertised in this paper.
March 13, 1908—40 Poland-China bred sows, and 45 Shorthorns. C. S. Nevius, Chiles, I. A.
March 13, 1908—Shorthorns and Polaris by C. S. Nevius, Chiles, Kans.
March 20-22, 1908—Combination sales of Shorthorns, Herefords, Aberdeen Angus and Herefords at Kansas City; E. A. Ford, Manager, Lawson, Mo.
March 23, 1908—Shorthorns by Shawnee Breeders Association at Topeka State Fair Grounds, I. D. Graham, Secretary, Topeka, Kans.
April 3, 1908—James Stock Farm, Willard, Kans., trotting bred horses.
April 13, 1908—Shorthorns by the Southeastern Breeders Association at Fredonia, Kans. H. E. Bachelder, Manager.
April 25, 1908—Shorthorns at Manhattan, Kans. F. M. Gifford, Wakefield, Kans.
May 16, 1908—Geo. Allen, Omaha, Neb., Shorthorns.

Feeding Questions.

EDITOR KANSAS FARMER:—I am a quarter-section farmer and keep only stock enough to pasture on about 40 acres. I keep some cows and raise their calves, and I fatten a few steers of my own raising every winter. As soon as cold weather sets in, I stanchion all my cattle, and about 20 head of calves, in a good barn with plank floor and tight manger. I feed cows that I milk and steers that I intend to fatten, cornmeal ground in a sweep-mill with one-third bran. Now, I would like to know if shelled corn would be better for the steers. Some say it does not pay to stable cattle, but when we clean the stable and haul out the manure, we go after a load of corn-fodder. Of course it is work to clean out, but I tell them it takes less feed.

I feed all the alfalfa hay my cattle can eat through the night; daytime I feed corn-fodder in the feed-lot and alfalfa, too, in mangers. I also raise about 10 acres of sweet corn every year for winter feed. I plant it thick with a planter on good ground. It grows 8 feet high. I husk out enough of the best for seed. It keeps a corn-binder pretty busy to go through it. Now, what are we going to do with the rats? Myself, boys, and dog have killed 77 since January 1, 1908. Can you tell me the best way to poison them?

Would it not pay better not to raise any sweet corn and raise all field corn, cut it all up and shred it to get it away from the rats? Corn shocks standing in the field all winter feed a good many rats. Long life and prosperity to the **KANSAS FARMER.** B. REICHERT.
McPherson County.

I rather doubt the advisability of confining fattening cattle as you are doing. The fattening steer is not so susceptible to cold as the dairy cow and quite a number of experiments in the stall-feeding of steers show that it is more economical to feed in open yards. Of course a wind-break or shelter of some kind is a great advantage. I do not think I would suggest any change in the ration which you are feeding to your milk cows and growing calves, but fattening steers, I believe, could be more economically fed on corn-and-cob-meal with alfalfa for roughage. I should prefer the corn-and-cob-meal to the shelled corn, although the cost of grinding is somewhat more than for shelling. If you have an abundance of good alfalfa hay, you should be able to get along with a very limited amount of bran or other purchased mill feeds. Alfalfa is a wonderful feed for all kinds of stock, and the farmer who has it is in a great measure fairly independent on the feed question. I see no special reason for growing sweet corn as you are doing. Field corn can be grown thickly in the same way for fodder and will produce larger yields per acre. Shredding fodder is certainly a very successful way of handling it and you will get more feeding-value from it and you will find it a great advantage in handling the manure. I hardly know what to suggest in the way of getting rid of rats. I am trying to solve that problem myself and find it a difficult matter. You might try poison if you could do it so as not to endanger other animals. The zoological department here prepares a special poison for gophers, prairie dogs, etc., which is also recommended for rats. This is sold at the bare cost of preparing.
G. C. WHEELER.

Texas Fever in Cattle.

A publication will soon be issued by the U. S. Department of Agriculture on the subject of Texas fever, a disease which has been a very serious obstacle to the development and prosperity of the cattle industry of this country, especially in the South. Some years ago it was conclusively proven by the experts of the Bureau of Animal Industry, after extensive investigations, that this disease, which is also known as

splenic fever and Southern cattle fever, is transmitted by the cattle tick, and that without this Texas fever tick there would be no Texas fever. Later experiments have been made with the object of determining the best method of eradicating the ticks and preventing the disease. The results of these various investigations are presented in Bulletin No. 78 of the Bureau of Animal Industry. The bulletin contains valuable information for stockmen concerning practical methods for eradicating the Texas fever tick from both the animals and the pastures, and also describes measures to be adopted for the prevention and treatment of the disease itself.

Copies of this bulletin may be had by applying to the Bureau of Animal Industry, Washington, D. C.

Rape—Underground Silos.

I would like to have some one who has had experience with rape, tell whether it is good forage for brood sows, pigs, and hogs in general and will cows eat it?

I have sixteen acres of bottom-land that I want to plant in rape if feasible; if not I would like to know. I have forty acres of rye and will sow twenty acres of oats for the hogs.

Will alfalfa keep in a silo and is a silo 15 feet underground as good as one on top of the ground?

CHARLES SMITH.

Kary County, Okla.

The rape plant (Brassica Napus) is without doubt one of the most useful forage plants introduced into the United States. It has been grown for forage in Europe and Great Britain for fully two hundred years. It bears a very close resemblance to the rutabaga in its early stages of growth. It does not grow a fleshy root, but sends out rootlets in all directions into the soil and is considered to draw heavily on the soil, but as it is usually pastured off by animals the soil is not greatly depleted of its fertility. It is an annual plant, and while there are several varieties, the Dwarf Essex is best adapted to the conditions in the United States. The seed is all imported at present. It is best adapted to moist conditions and a moderately cool climate. In your section it will undoubtedly be of value if planted early in the spring. The sixteen acres of bottom-land you refer to will undoubtedly be rich enough and moist enough to yield large quantities of forage. It will grow best in rich, moist, and free-working soils, not doing so well on stiff, clay soils. The seed-bed must be well prepared and as clean as possible. It should be sown early, either broadcast or in drills. Where it is the sole crop and sown broadcast, three to five pounds of seed are required per acre. If drilled in rows, one or two pounds will be sufficient. In from eight to twelve weeks after sowing it will be at its maximum growth for pasturing. Hogs should not be turned upon it while it is small or it will be destroyed. You speak of sowing oats for hog pasture and I would suggest that rape and any of the common cereals may be sown together to advantage. It will also do well for hog pasture sown with sorghum. If you pasture it off before it has reached its maximum growth it will produce a second growth. The amount of the second growth depends upon the richness of the soil and the character of the season. If allowed to become too old and tough, you may find that your hogs will refuse to eat it. You will find it better to turn the hogs on when it is from eight to twelve inches high. We make a practice here at the college of plowing up all of our feed-lots in the spring and sowing them to rape, thereby getting much forage from what would otherwise be useless ground during the summer season. If the season is favorable, we practice sowing a succession of crops so as to have a new patch coming on to take the place of the one pastured off.

Cows will eat it but care should be taken that they are not turned on it with empty stomachs. There is danger of bloating cows or sheep if such care is not taken. It is also liable to taint the milk of cows, hence is undesirable pasture for milk cows. Alfalfa may be placed in a silo in the green state but is a little more difficult to keep than corn as it does not settle so compactly, hence a greater loss takes place from spoiling on the surface and down the sides. Alfalfa silage has been made at the Kansas Experiment Station for the past three years, and is being fed to the dairy cows at the present time. It is advisable to tramp it very thoroughly around the edge while filling and it is also a good plan to have some corn silage to run in on top to aid in settling it. Silage may be made in an underground silo as well as one on the

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ground. There are objections to the underground silo, the chief of which is that it is a serious problem to get the silage out. There is also danger of gases forming which would be fatal to human life in a silo placed in the ground as you suggest.

GEO. C. WHEELER.

[It is suggested that you send 10 cents to the Silage Manufacturing Co., Salem, Ohio, for their book on "Modern Silage Methods," mentioning the KANSAS FARMER. It is an exceedingly valuable work on the subject besides containing feeding tables and other valuable information for the stock feeder.—Editor.]

Slaughter Tests of Hog-Feeding Experiments at Kansas Agricultural College.

The animal husbandry department of Kansas Agricultural College has just completed a hog-feeding experiment and marketed the hogs at the Chas. Wolff packing plant in Topeka where slaughter tests have been obtained of the different lots.

There were ten hogs used in each lot and the experiment began October 9, 1905, ending January 29, 1906, a period of 112 days. The object of the test was to determine the value of tankage and alfalfa hay as supplement feeds with corn. The following table gives the results as to weights and gains and cost of feed and grain:

No. of lot.	Pigs in lot.	Weight Oct. 9, 1905.	Weight Jan. 29, 1906.	Total gain lbs.	Ave. Daily gain lbs.	Total lbs. feed eaten.	Total cost of feed.	Cost of gain per cwt.
I	10	1290	2400	1110	1.00	Cornmeal 7890	\$48.05	\$4.32
II	10	1275	3250	1965	1.75	Cornmeal 7848 Tankage 1552	\$80.07	\$4.07
III	10	1310	2510	1200	1.18	Cornmeal 7875 Alfalfa 1340	\$54.53	\$4.13

Fed 112 days. Feed prices—Cornmeal 62½ cents per cwt.; tankage \$2 per cwt.; alfalfa \$8 per ton.

The hogs were shipped to the packing-house and brought the following prices: Lot I. \$5.32½ per cwt., lot II. \$5.40 per cwt., lot III. \$5.35 per cwt.

When the carcasses were sufficiently cooled they were cut up in the presence of representatives of the animal husbandry department. Every facility for obtaining the necessary data was freely provided by J. B. Nicholson, superintendent of the plant, a special cutting being made of these three lots in order to allow more time for the work.

Dr. De Wolf, the Bureau of Animal Industry expert stationed here as inspector, pronounced the whole bunch as unusually healthy. The lymphatic glands were all large and soft and only one case of parasitic infection of the liver was found.

They all had more leaf lard than the average hog. The amounts for the different lots were as follows: Lot I. 90 pounds, lot II. 94 pounds, lot III. 90 pounds. Although the hogs in lot II were heavier and seemed fatter on foot, the leaf lard was but slightly greater than in the other two lots.

Mr. Nicholson stated that the flesh and fat of lot II. seemed firmer than the others in the warm condition. The hogs fed alfalfa hay showed a very fine quality of lean flesh and the fat was not so heavy on their carcasses. The percentage of dressed weight for the three lots, not including the heads was as follows: Lot I. 76.6 pounds, lot II. 73.5 pounds, lot III. 76.1 pounds.

Dr. S. C. Orr of Manhattan secured some very fine photographs showing the different cuts from all three lots which will be used when the results of the experiment are published in detail by the Kansas Experiment Station.

Out There in Kansas.

I. D. GRAHAM BEFORE THE KANSAS IMPROVED STOCK BREEDERS' ASSOCIATION.

Kansas people love their State. They believe in it. They like to talk about it. It is a delight to live in it and yet a constant marvel to all its residents. The common, every-day facts of Kansas become hyperbole in other States. Her history is written in capitals. From her broad and fertile plains her farmers produced in 1905 agricultural products to the value of \$238,818,666, and possessed live-stock worth \$169,821,157, or a total of \$408,639,823 as a result of their labors. They grow big men in Kansas to follow the greatest of all human callings, agriculture.

And there are some big things "out there in Kansas." Some of them are the biggest things of their kind in the world. For instance, Kansas has the largest Agricultural College in the world. It is located at Manhattan, and enrolls 1,600 students annually. It has more students in its four-years' course in agriculture than have the agricultural colleges of Iowa, Illinois, Michigan, Wisconsin and Missouri combined. It has more graduates and former stu-

dents in Government employ than any like institution. E. R. Nichols is president.

Kansas has the largest agricultural experiment station in the world. It is located at Hays, and includes 4,500 acres, devoted solely to experiments in agriculture. It is a branch of the Agricultural College Experiment Station at Manhattan and is under the control of its board of regents.

Kansas has the largest Improved Breeders' Association of any State in the world. Its membership numbers about 1,000 of the State's brightest and best farmers and breeders. It holds annual meetings at the State Capitol in January. H. A. Heath, Topeka, is secretary.

Kansas has the largest county breeders' association in the world. The Marshall County Hereford Breeders' Association has a membership of 60 men and women, each of whom owns a herd of Hereford cattle. F. W. Preston, Blue Rapids, is the secretary.

Kansas has the largest herd of home-bred Aberdeen-Angus cattle in the world. This is the Sunflower herd, belonging to Parker, Parrish & Miller of Hudson. It numbers 325 pure-bred animals that were all bred at home.

Kansas has the largest Berkshire breeding establishment in the world. This belongs to E. D. King of Burlington, and numbers more than 100 brood sows with a product of some 1,200 pigs each year. There are larger

herds of hogs, but they are not pure-bred nor registered.

Kansas has the largest Hereford breeding establishment in the world. This is the famous Sunny Slope Farm at Emporia. It belongs to C. A. Stannard, and numbers about 700 head of registered animals with an annual crop of about 500 calves.

Kansas has the largest apple orchard in the world. It is located principally in Leavenworth County, and belongs to Judge Fred Wellhouse of Topeka. It numbers about 40,000 trees of the best market sorts.

Kansas has the largest creamery in the world. This is the Continental Creamery of Topeka, which has more than 20,000 patrons and about 1,000 stations. Its daily capacity is 100,000 pounds of butter, and for several years it has filled the United States Government contract for a half million pounds of butter for use in the navy. T. A. Borman, Topeka, is general manager.

Kansas has the largest continuous alfalfa-field in the world. This belongs to Col. J. W. Robison, Eldorado, and includes more than 2,500 acres, the product of which brings a small fortune to its owner each year.

Kansas has raised the largest wheat crop of any State in the world. This was the crop of 1903, which measured nearly one hundred million bushels.

Kansas has raised the largest county corn crop in the world. This crop was produced by Jewell County, which is supposed by Easterners to be located away out in the short-grass country where drouths and cyclones most do congregate.

Kansas has the largest salt plant in the world. This is located at Hutchinson, and its output includes a very large portion of the total salt product of the United States.

Kansas has the largest amount of cash per capita in bank deposits of any agricultural State in the world. This cash amounts to about \$78 for every man, woman and child living within her borders and is more than twice the general average of the United States.

Kansas has a record of the largest annual income for her farmers of any State in the world. Recent estimates show that the average income of her 180,000 farmers is more than \$2,000 a year.

Kansas has the largest Percheron breeding establishment in the United States. This is the Whitewater Falls Farm, belonging to J. W. & J. C. Robison, Towanda, and numbers about 200 pure-bred registered Percherons. There are importers who number more Percherons in their studs, but these are not considered in this statement.

Kansas has the oldest Percheron breeding establishment in the Louisiana Purchase. This belongs to Henry Avery & Son, Wakefield, and includes the mares, Mina and Lena, who won the gold medals at the Louisiana Pur-

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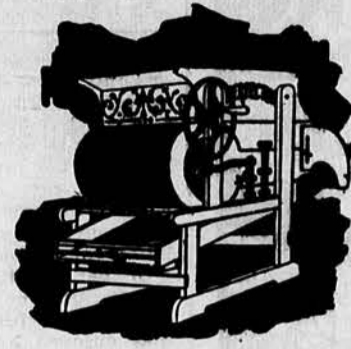
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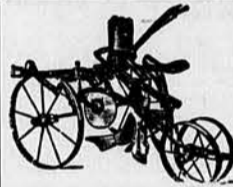
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the only lister that can be used without a pole. Bottom hangs almost directly between the wheels, and a square corner can be turned with bottom in the ground. It is frameless and has no complicated parts to break or wear out. Driver sees every kernel of corn as it drops. Actual weight 356 pounds. Write to-day for booklet giving complete description and our proposition to you.

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for—corn, kafir-corn, cotton, tobacco, sorghum, potatoes, beets and other vegetables.

THREE SIZES: for two rows or one row—three horses, two horses or one horse.

"My corn cultivated with a "Tower" made 15 bu. per acre more than my neighbor's (40 bu.) on exactly same kind of ground; my ground is now clean, his is weedy."
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J. D. TOWER & SONS CO., 14th St., MENDOTA, ILL.

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It's just as natural for a girl to want to shoot as for a boy. It does her just as much good. Gives her healthy, invigorating outdoor exercise, quickens her eye, steadies her nerve, and makes her self-reliant.

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chase Exposition, and who were never defeated as a pair in any show-ring.

Kansas raised the largest fleece that was ever shorn from a sheep's back. This weighed 52 pounds, and has never been approached in weight, much less equalled.

From the treeless desert plains of Kansas came the largest walnut log ever exhibited in the world. This was the monster log shown at the World's Fair at Chicago in 1893.

Kansas has the largest herd of pure-bred Galloway cattle in the world. This belongs to E. W. Thrall, of Eureka, and numbers over 400 head.

Kansas has the largest zinc and lead mining industry of any State in the world. These annually produce one-fourth of the total amount of these metals mined in the world.

Kansas developed the highest-priced Percheron mare ever sold. This was the imported mare Regina, which was mated on Kansas alfalfa and sold in public auction for \$2,500.

Kansas has just held what is believed to be the largest State poultry show in the world. It numbered some 3,000 birds exclusive of pet stock.

Kansas herself is not so small. She measures "400 miles long, 200 miles wide, 8,000 miles deep and reaches to the stars." Eastern people think, even yet, that Western Kansas is of doubtful agricultural value. Facts show otherwise. But suppose, just for argument, that this be admitted. Suppose we cut off the western third of Kansas; we should still have a State as large in area and a great deal better than her neighboring States of Iowa, Illinois, or Missouri.

Kansas has the record of the largest combined crop of wheat and corn of any State in the world and she has only just begun.

Kansas has the most extensive potato-grower in the world. This is J. W. Groves, of Edwardsville, whose son is a graduate of the Kansas Agricultural College and whose crop in 1905 was 72,150 bushels. He is a colored man.

Kansas has more than one-half million acres in alfalfa and if she is not now the largest alfalfa-producing State in the world, she soon will be.

Kansas has the brightest, most progressive and most energetic people in the world. They are the people who do things. They are optimists, every one of them. They are always full of hope and faith and this is justified by their works. Even in the depressed condition of the cattle industry, through which we have just passed (and I believe we have passed it), her breeders have never lost faith but have continued to turn out the best.

Not many will forget the previously unknown Shorthorn bull from Kansas that stood in the short leets at the American Royal of 1904, then topped the sale and afterwards won the first prize and the championship in the great International Live Stock Show at Chicago. In spite of the depression, Kansas breeders have held on and the indications now are that they will soon have their reward in the return of prices that more nearly represent the real value of their animals.

The following figures representing pure-bred cattle sales are quoted from the Breeder's Gazette of Chicago, which has unrivalled opportunities for getting

at the facts as presented by the country at large. They speak to us with emphasis because they represent our own condition as well.

Anthony 43066 to H. J. Ulrich, Scranton, Kans. 410.00
Fontana 43054 to A. L. Robinson, Pekin, Ill. 250.00
Algon by Illustre 20489 to L. E.

COMPARATIVE AVERAGE BY YEARS.

	No. of sales.	1905.		No. of sales.	1904.	
		No. sold.	Average price.		No. sold.	Average price.
Shorthorn	82	3,512	\$139.75	65	2,755	\$101.25
Hereford	24	1,179	115.25	28	1,481	117.10
Aberdeen-Angus	22	1,084	130.35	21	932	132.80
Galloway	5	190	103.85	3	133	143.65
Poll'd Durham	1	34	231.75	7	286	100.00
Red Poll	3	94	109.80	1	48	70.00

The few big things mentioned here are only given as samples. Kansas has only just begun her real, active life as a State, but she began right. Kansas now stands in the very front rank of States in her low rate of illiteracy and her high rate of morality. Only one Kansan in each 2,000 of her population is a convicted criminal, and her population came from the ends of the earth. Of her possibilities in the future nothing need be spoken. Man was never endowed with a fairer heritage than that enjoyed by the Kansan and the possibilities are in his hands.

Dogs and Sheep.

A reader in a Southern State advises us that he is going extensively into sheep now that the Legislature of his commonwealth has passed a dog-tax law creating a fund to recompense farmers for sheep killed by dogs. At the same time comes a letter from an Ohio reader, commending a position taken by this journal, and urging it to make a campaign for a dog-tax law in every State. The Buckeye State has a dog law, but under its enforcement we understand the poor man's dog escapes taxation, and it is usually the cur of the poor man which does the sheep-killing. A man who owns a good dog will offer no objection to a tax to be turned into a fund for the protection of flockmasters. He knows his dog is worth the cost of the tax. No man has a moral right to keep a cur dog. Such a dog produces no profit to the owner, and is a menace to sheep and sometimes to human beings. The maintenance of useless dogs on the farm or in the city should be discouraged by a tax. While a man has a legal right to keep a cur, so long as it is not a menace to the community, he should be discouraged from so doing by a tax that will contribute toward a fund for the payment for sheep killed by dogs. The administration of the dog-tax law and the equitable distribution of the fund in case of killed or worried sheep is a hard problem to solve practically, but every effort should be made to protect flockmasters from the ravages of farm or town-kept dogs.—Breeder's Gazette.

The Avery Percheron Sale a Record-Breaker.

The closing-out sale of Henry Avery & Sons, held at Manhattan, Kans., last Saturday was a great event. There were buyers present from Arizona, New Mexico, Colorado, Nebraska, Iowa, Illinois, Missouri, and other States. The sale was scheduled to begin at 12.30 p. m., but long before that time the large sale pavilion was packed to the limit and many people were unable to gain entrance. Colonel Woods held the block while Colonels Harriman and Brady worked in the ring. The bidding was lively and the horsemen who wanted animals were not afraid to bid because they knew the offering was one of the best ever given to the public. The two great brood mares, Mina 31721 and Lena 40417, brought \$1,125 each, going to Jas H. Tangeman, Newton, Kans. Bosquet 40105, their great black herd stallion, went to J. H. Peak, Manhattan, Kans., for \$2,825. The average price brought by the stallions was \$568.75, which is a remarkable price considering the fact that six of these animals were under yearlings. The average price for 26 mares was \$549.61, which also is remarkable from the fact that five of them were less than a year old and one, a grade Percheron, sold for \$207.50. J. H. Tangeman, Newton, Kans., also purchased the mare, Belinda Belle 40989, for \$1,000, and Altetis 40990 for \$650.

The great herd stallion Bosquet was sold to J. H. Peake, of Manhattan, Kans., and will remain in the State. While there were buyers from many States at this sale, it is a noticeable fact that the majority of the horses were purchased by horsemen of this State and will remain in service in Kansas. The average price on 43 head sold was \$543.95. The following is a complete list of the animals sold at this sale:

Bosquet 40105 to J. H. Peak, Manhattan, Kans.	\$2825.00
Fenniant 40464 to J. R. Lindsey, Manhattan, Kans.	800.00
Lothaire 40471 to R. L. Ream, Wapanucha, I. T.	550.00
Gaffine 34796 to B. L. Brown, Fall River, Kans.	1000.00
Roscoe 40463 to Hugh Petefish, Cullison, Kans.	700.00
Ambassador 43068 to Ross Wright, Mt. Pleasant, Ia.	440.00
Aragon 43062 to C. B. Augustine, El Paso, Ill.	400.00
Ransome 43067 to W. H. Mable, Green, Kans.	365.00
General Scott 11469 to H. G. Hamm, Holton, Kans.	425.00
Itto 43069 to R. L. Ream.	150.00

Deever, Esbon, Kans.	335.00
Ajax 43061 to Geo. Caesar, Voland, Kans.	185.00
All 43064 to H. Ulrich, Scranton, Kans.	365.00
Amaureux 43058 to John Hund, Paxico, Kans.	200.00
Mina 31721 to J. H. Tangeman.	1125.00
Altetis 40990, J. H. Tangeman.	650.00
Belinda Belle 40989 to J. H. Tangeman.	1000.00
Lena 40417 to J. H. Tangeman.	1125.00
Almeda 2d 22940 C. F. Motzen.	625.00
Imo 22949 to D. F. McAllister, Westmoreland, Kans.	515.00
Florence 22943 to Walter Petty, Sedalia, Mo.	405.00
Fleeta 40470, T. D. Marshall, Modoc, Kans.	630.00
Alma 30509 to Thos. S. Work, Fort Morgan, Col.	750.00
Florinda 2d 22934 to Walter Petty.	300.00
America 43063 to A. Hirsch, Formosa, Kans.	370.00
Infanta 30515 to J. C. Parker, Eskridge, Kans.	725.00
Ada 40465 to R. A. Chase, Fort Morgan, Col.	620.00
Ether 26263 to A. W. Hall, Plainville, Kans.	500.00
Fay 30516 to A. W. Hall.	500.00
Angelia 32519 to H. B. Kern, Trenton, Kans.	325.00
Pearl 32520 to H. Purvee, Herman, Neb.	500.00
Fairy 40467 to A. I. Hicks, Eskridge, Kans.	610.00
Anora 30517, Ross Wright, Mt. Pleasant, Iowa.	607.50
Altha 30513 to Ross Wright.	607.50
Fanchon 42853 to W. A. Mendenhall, Esbon, Kans.	750.00
Ruth 43065 to A. C. Tangeman.	380.00
Flora Dora 43056 to A. C. Tangeman.	380.00
Ursula 43244 to J. B. Porter, Mayetta, Kans.	300.00
Almira to Henry Ruhlmg, Herman, Neb.	480.00
Grade Persheron to J. C. Slater, Polo, Mo.	207.50
Rozelin to Thos. Work.	410.00

Wichita's Greatest Sales.

The four days' breeders' combination sales held at Wichita last week were a great success, and especially gratifying to the Percheron horse and Shorthorn breeders who broke all previous records and realized most satisfactory prices.

ROBISON'S PERCHERON SALE.

The greatest event of the week was the annual sale of Percheron horses by J. W. & J. C. Robison of Towanda, Kans., who held their fifth annual sale and made some great records for the breed as well as for their establishment.

The sale of the Percheron stallion, Iena, for \$2,200 and the yearling stallion, Castelar by Casino, for \$1,500 broke the world's record for stallion sales up to that date.

The auctioneers, Colonels Harriman, Sparks, Brady and Snyder, broke their record for hard work and enthusiasm at the series of Wichita sales and everybody, including buyers, was happy at the successful outcome of this great improved live-stock event.

STALLIONS SOLD.

Iena to T. Schrook, Hutchinson, Kans.	\$2200
Vanlois 2019 to J. G. Tyler, Edmond, Okla.	315
Major 42774 to Geo. R. T. Roberts, Morrill, Kans.	1000
Diavolo 41672 to Wm. Casement, Sedan, Kans.	1100
Roscoe 35192 to Jno. Haas, Kechi, Florian 40941 to D. A. Nisley, Hutchinson, Kans.	830
Fashion 41674 to Z. M. Bard, Florence, Kans.	370
Dixon 40942 to J. H. Tangeman, Newton, Kans.	300
Ragoleur 41399 to C. B. Brooks, Benton, Kans.	700
Castelar 42397 to Theo. Moore, Arkansas City, Kans.	1500
Carnot 35337 to O. L. Nuttier, Chapman, Kans.	505
Cascadeur 41666 to C. K. Whiting, Anthony, Kans.	500
Barman 41420 to J. N. Henderson, Burden, Kans.	410
Izelle 35837 to W. T. Heneman, Deighton, Kans.	440
Ambassador 41664 to Wm. H. Smith, Raton, N. M.	550
Banquo 40986 to C. A. Harader, Arkansas City, Kans.	680
Extrador 13849 to Ed. Rice, Vine. Basil 42725 to J. H. Thatcher, Pueblo, Colo.	735
Salute 13220 to E. J. DeLong, Emporia, Kans.	800
Diamond 13149 to J. H. Lee.	715

MARES SOLD.

Modiste-Mignon 33371 to C. K. Whitney, Anthony, Kans.	\$550
Daisy 687 to B. A. Packard, Phoenix, Ariz.	445
Agatha 2d 31577 to Hooper Monroe, Frederick, Kans.	350
Bernice 20969 to S. C. Strump, Herlington, Kans.	410
Lady Alice 42933 to B. A. Packard, Delphine 34568 to N. Kriberg, Springer, N. M.	430
Vera 34561 to B. A. Packard.	430
Helen 22851 to B. A. Packard.	630
Black Bess 23960 to Geo. R. T. Roberts.	680
Fancy 29403 to B. A. Packard.	505
Fanchion 28401 to B. A. Packard.	505
Brenill 22207 to M. W. Weaver, Newton, Kans.	500
Blenette 26624 to Dr. G. A. Waters, Pawnee, Okla.	500



CONGO ROOFING

A better Ready Roofing than Congo is not made. It looks like rubber, feels like it, acts like it in everything, but it wears like iron. It does not crack, buckle nor creep, but remains pliable and elastic. Tropical heat or icy blasts have no effect upon it—winds and rains may beat upon it without injury. It's acid, alkali and water proof. It's a good fire resistant. Its price is low—which is one of its most attractive features. Write to-day for free Sample and Booklet.

BUCHANAN-FOSTER COMPANY
484 Chestnut St. Philadelphia, Pa.

Mary Anne 16564 to J. T. Mowser, Lost Springs, Kans.	385
Valtine 33897 to D. E. Reber, Morrill, Kans.	725
Maud 40539 to W. E. Reber.	700
Mahala 20180 to B. A. Packard.	520
Celestine 41396 to Geo. R. T. Roberts.	505
Beulah 35662 to N. Kreiberg, Springer, N. M.	410
Brunette 17393 to E. W. Lee, Harveyville, Kans.	310
Neva (substituted for Sylvia) to H. T. Heneman.	440
Clofate Carlock 22076 to S. C. Strum, Herlington, Kans.	500

THE WICHITA SHORTHORN SALE.

The Shorthorn breeders' combination sale, or more exactly, the fifth annual sale of J. F. Stodder, of Burden, who was joined by S. C. Hanna, of Howard, and Marshall, Bros., of Burden, was held at Wichita following the Robison horse sale. While a number of the animals offered were young stock, the average throughout was highly satisfactory. The top price of the sale was for Mr. Stodder's Scotch show cow, Ceres, which went to W. S. Combs, of Yukon, Okla., for \$675. The top price for bulls was realized in the sale of Mr. Hanna's Cruickshank bull, Symmetry, which sold for \$300 to C. A. Francis, Runnymede, Kans. C. A. Shields, of Derby, Kans., got a great bargain in the Bates-bred bull, 8th Waterloo Duke of Karney, consigned by Marshall Bros.

SUMMARIES.

J. F. Stodder's consignment: 23 cows and heifers brought.	\$2,920.00
Average.	127.00
12 bulls brought.	1,370.00
Average.	114.16
S. C. Hanna's consignment: 2 cows brought.	320.00
Average.	160.00
3 bulls brought.	865.00
Average.	288.34
Marshall Bros.' consignment: 7 cows brought.	590.00
Average.	84.34
2 bulls brought.	300.00
Average.	150.00
Combined averages: 32 cows brought.	3,825.00
Average.	119.40
17 bulls brought.	2,535.00
Average.	149.12
49 head brought.	6,360.00
General average.	130.00
Highest price (Ceres).	675.00

The principal buyers of Shorthorns were: J. H. Cooper, Union City, Okla.; Henry Burline, Caldwell, Kans.; S. W. Stewart, Alden, Kans.; Fred Walton, Sterling, Kans.; W. S. Combs, Yukon, Okla.; B. A. Packard, Phoenix, Ariz.; R. A. Stewart, Hutchinson, Kans.; L. J. Work, Carmen, Okla.; A. L. Barnard, Belle Plaine, Kans.; F. W. Heaton, Coats, Kans.; C. W. Askew, Utica; M. H. Lyons, Fort Reno, Okla.; M. L. Hollenbeck, Pontiac, Kans.; A. R. & J. C. Hamilton, Roswell, N. M.; J. C. Gifford, Eldorado, Kans.; C. C. Trostol, Nickerson, Kans.; W. A. Price, Anthony, Kans.; Newell Bros., Stafford, Kans.; D. H. King, Nickerson, Kans.; H. M. Hill, LaFontaine, Kans.; C. W. Francis, Runnymede, Kans.; F. E. Grimm, Runnymede; Thos. Murphy, Caldwell, Kans.; C. S. Chaffin, Preston, Kans.; C. A. Shields, Derby, Kans.

THE HEREFORD SALE.

Following the Shorthorn sale, the Hereford breeders' combination sale was held but did not hold its own in rank with the other sales. A number of the offering were not in suitable sale condition, which had a tendency to bear the prices, more than the breeding of the animals seemed to warrant. Robt. H. Hazlett, of Eldorado, sold four young bulls at an average of \$160. The highest price of the sale was for Steele Bros.' cow, Day Dream, which sold for \$205 to B. A. Packard, of Phoenix, Ariz. The principal buyers at the sale were: J. P. Sands & Son, Walton, Kans.; John Gosling, Kansas City, Mo.; Thos. Taylor, Belvidere, Kans.; B. A. Packard, Phoenix, Ariz.; E. H. Davis, Norwich, Kans. The foregoing list of purchasers took the entire tops of the sale.

SUMMARIES.

23 bulls brought.	\$2,375.00
Average.	103.26
16 cows brought.	1,665.00
Average.	87.70
42 head brought.	4,040.00
General average.	93.95

Are you thinking of buying a carriage or a buggy, or a harness? If so, be sure to write to the Elkhart Carriage and Harness Co., Elkhart, Ind., and get a catalogue. You can then select what you want with the assistance of every member of the family. This company is now in its thirty-third year of manufacturing and selling direct to the consumer. The guarantees are ample and are made by a responsible company.

A Poland-China Record-Breaker.

The Bollin & Aaron sale at Leavenworth on February 22, was another record-breaker. The 22 sows bred to Nemo's Dude, selling for more money on an average than any like bunch of sows bred to one boar, in the history of the hog business in the State.

The entire sale was good. All of the offering were bred to the boars on the above-named gentlemen's farms. No outside reputation was bought to help lift the average, it being a public sale made expressly to dispose of the product of these good breeding farms. This proves that Poland-Chinas can be bred, reared, and sold in the ordinary way at the very best prices if the breeding, merit and mating of the offering is right, and the sales advertised are conducted in an honorable legitimate way. The list follows:

No.	Name	Price.
1.	L. Calhoun, Potter, Kan.	\$100.00
2.	A. G. Wyatt, Florence City, Neb.	150.00
3.	L. Calhoun	155.00
4.	C. S. Moore, Nortonville, Kan.	110.00
5.	James Mains	57.50
6.	A. P. Rearidon, McLouth, Kan.	55.00
7.	A. Jones, Rosedale, Kan.	57.00
8.	A. P. Rearidon	57.00
9.	John Harvey, Maryville, Kan.	132.50
10.	H. J. Northup, Frankfort, Kan.	120.00
11.	E. H. Anderson, Kearney, Neb.	50.00
12.	M. C. Vansal, Muscota, Kan.	50.00
13.	Sandquist Bros., Oakland, Neb.	54.00
14.	C. O. Fimpay, Fontanelle, Neb.	52.50
15.	H. M. Kirkpatrick, Wolcott, Kan.	46.00
16.	R. H. Hargrove, Nettleton, Mo.	40.00
17.	John Murphy, Bonner Springs, Kan.	26.00
18.	J. R. Young, Richards, Mo.	20.00
19.	C. M. Pritchard, Leavenworth, Kan.	35.00
20.	O. N. Thorson, Everest, Kan.	21.00
21.	Joe McElvory, Leavenworth, Kan.	16.00
22.	C. R. Ryan, Leavenworth, Kan.	20.00
23.	E. L. Marshall, Bonner Springs, Kan.	14.00
24.	John Forge, Leavenworth, Kan.	16.00
25.	G. G. Clement, Ord, Neb.	70.00
26.	Dietrich & Spaulding	64.00
27.	J. C. Meese, Comstock, Neb.	152.50
28.	L. Calhoun	50.00
29.	A. Johns	60.00
30.	C. S. Moyer, Nortonville, Kan.	45.00
31.	H. M. Graves, Atchison, Kan.	41.00
32.	L. Calhoun	68.00
33.	J. M. Devenery, Cameron, Mo.	50.00
34.	J. W. Henninger, Potter, Kan.	60.00
35.	A. Johns	52.50
36.	H. M. Kirkpatrick	39.00
37.	J. M. Devening, Leavenworth	45.00
38.	R. H. Hargrove	47.00
39.	John Harness, Leavenworth, Kan.	35.00
40.	A. Johns	64.00
41.	A. P. Rearidon	36.00
42.	John Murphy	27.00
43.	H. M. Kirkpatrick	31.00
44.	M. C. Mansell	28.00
45.	M. C. Vansell	38.00
46.	A. H. Robertson, Clark, Mo.	28.00
47.	J. M. Ross	35.00
48.	A. Johns	32.00
49.	W. R. Davis	20.00
50.	W. R. Vansell	17.00

The total was \$2,700. The sows bred to Nemo's Dude averaged \$81. The entire sow offering averaged \$60. Six boar pigs averaged \$20.

Gossip About Stock.

Write Samuel Drybread for catalogue of the combination sale of cattle and hogs of the beef and lard herds at Elk City, March 17, 1906. Some excellent stock will be sold. The consignors are some of the best breeders of the locality. Address S. Drybread, Elk City, for catalogue.

Wyatt Stanley, of Anthony, Kans., has for sale three fine Percheron stallions, and if you are in need of one write him for full particulars. Mr. Stanley is one of the oldest breeders in the country, having bred Percheron horses for fifteen years at Stronghurst, Ill., before coming to Kansas.

Geo. Hebbard, of Peck, Kans., who has one of the good herds of Poland-Chinas, topped the Caldwell sale of Poland-Chinas at \$105 for the good young sow, Perfect Meddler. Mr. Hebbard has been getting good results from his advertisement, recently receiving an order for 8 head from a KANSAS FARMER reader.

L. L. Vrooman, owner of the Rose-lawn Herd of Hereford cattle and Duroc-Jersey swine, which was established at Hope, Dickinson County, Kansas, has recently purchased a farm near Topeka and may be addressed hereafter at Route 8, Station C, Topeka, Kans. The breeding fraternity will be pleased to welcome Mr. Vrooman to the ranks of prominent breeders in Shawnee County.

The Marshall County Hereford Association will hold its annual sale at Blue Rapids, April 5. The offering consists of 27 bulls and 13 cows and heifers consigned by the following well-known breeders: Miss Lou Goodwin, A. Borck, Brown Brothers, E. R. Morgan, F. W. Preston, L. P. Larson, Geo. E. Miller, McKee Brothers, and W. A. Gilson. Mention the KANSAS FARMER and write F. W. Preston, Blue Rapids, for catalogue.

Albert King, of McPherson, Kans., is offering an attractive proposition to real-estate investors. Mr. King offers to bona fide purchasers a number of farms in Sherman County, Kansas, at from \$5 to \$15 per acre on easy terms. This land is owned by the company he represents, and when you buy it you save the expense of paying three or four real-estate men's commissions. Read his advertisement in this paper.

Hon. B. P. Waggoner, State Senator in the second district, was a heavy buyer of the best things in the Leon Calhoun Poland-China sale last week at Atchison. Mr. Waggoner is a great admirer of good stock and is equipping

his splendid farm, 5 miles southwest of Atchison, with all modern conveniences for handling stock and is stocking it with registered horses, cattle, and hogs. Having filled many positions of honor and trust we predict a bright future for him in the stock business.

The Brown County Improved Stock Breeders' Association will hold a Shorthorn sale at Hiawatha, Kans., April 5. The offering will consist of 50 head of males and females consigned by Jas. P. Lahr, Sabetha, Kans.; G. Y. Johnson, Willis, Kans.; T. J. Sands, Robinson, Kans.; Geo. Mantle, Faucett, Mo.; E. D. Schuler, Falls City, Neb.; J. F. Stricker, Highland, Kans.; and Everett Hayes, Hiawatha, Kans., who is secretary of the association. Their catalogue will soon be ready for distribution. Mention the KANSAS FARMER and write for one.

W. J. Honeyman, Madison, Kans., writes that on account of changing his farm location he is selling his herd very close, letting many go in the sale that he had expected to retain. He sells a number of daughters of Chief Perfection 2d. One is the good sow, Chief's Orphan 5th, the dam of one of the best boar pigs sold in the Kansas sales last year. Others are by Corrector 2d, Truant Boy, Chief Perfection 3d, and other great hogs, all well bred and good individuals. Nearly all are bred to U. C. Perfection. One is bred to Perfection E. H., that was first at the Iowa State Fair 1905. The boar, U. C. Perfection, is producing a lot of the kind expected from a first-prize State Fair winner. His get have been bought by the best breeders at the fall sales and are extra good sellers in the brood-sow sales being held. Mr. Honeyman is one of the good breeders who buys and breeds the good ones. Write for catalogue addressing him at Madison, Kans. Send bids to J. D. Snyder of the KANSAS FARMER.

C. S. Nevius, owner of the Glenwood Herd of Shorthorn cattle and Poland-China swine at Chiles, Miami County, Kansas, has out his catalogue for his first annual sale of Shorthorn cattle and bred Poland-China sows to be held at his farm on Tuesday, March 13, 1906. This offering of Shorthorns includes his entire 1905 show herd of ten head, and the offering as a whole comprises as much fashionably bred and prize-winning Shorthorn blood as was ever offered by any breeder in the State. The sale will be held on Mr. Nevius' farm, where most of the cattle were bred and cared for. Buyers can "see the whole works"—an advantage worth considering. Other notices will go into the detail. To better follow it, please get a catalogue. Mention the KANSAS FARMER in writing Mr. Nevius. Those who like a big, stretchy Poland-China will be interested in the hog sale the forenoon of the same day (March 13). The sows will be sired to Designer, the best finished son of Expansion the writer has ever seen. Ask for separate catalogue for the hogs.

L. M. Monsees & Sons, Smithton, Mo., are selling one of the greatest lots of jacks and jennets in their 28th annual sale at Limestone Valley Farm that was ever offered at public sale. It has been said by one who knows the stock, "Don't come to the sale unless you want to buy good jacks and jennets, because if you do you will be disappointed, as nothing but good ones will be sold." They are all good, although some are better than others; but all are of that high degree of quality that has made the herd so famous. Don't fail to be on hand early the sixth, or better the day before. Messrs. Monsees leave no stone unturned to make this annual event pleasant and profitable for their guests. The stock sold by them that day is of the kind that will produce profits that will help make the future days more pleasant. It is a little late to get a catalogue but it is not necessary, as the breeding is right and the individual merit of the offering is of the same quality as the bunch that made the greatest of all prize-winning records at the great St. Louis World's Fair. Remember the place, Smithton, six miles east of Sedalia, Mo., the time, March 6, 10 a. m., 1906.

J. R. Young's On and On sale of brood sows March 7, is to be the meeting place of the East and the West, the North and the South—all in friendly competition for the best bunch of sows, breeding and individual merit considered, and bred to the greatest of all the recent champion sons of the lamented Keep On, and the old champion, Successor, that were ever offered in one sale. Mr. Young has spared no time or expense in getting this great offering together. The sows are of the cream of the greatest sales of the year, selected by the fieldman and auctioneers representing Mr. Young, bought without limit as to price but with the admonition to be sure of the breeding and individual merit, and are beyond criticism. To realize how well their policy has succeeded this offering must be seen, as word of tongue or pen can not portray the offering as it would appear on inspection. Be sure to arrange to attend, or if it is an utter impossibility to be Mr. Young's guest that day, either follow his example and instruct your representative to buy what you want without limit, or be sure to place the limit high enough to get what you want. The experience of this year proves that the man who has an On and On litter will be assured a good sale next fall. Richards, Mo., the place; March 7, the time; J. R. Young, the host. Be there.

Zenoleum Veterinary Adviser.
A copy of this interesting and well-printed book containing sixty-four pages of valuable advice, prepared by the leading veterinarians in the world for live-stock owners, and printed at a great expense by the Zenner Disinfectant Company of Detroit, Michigan, will be sent to you and to your friends, upon request, absolutely free of all cost.
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Years of experience have taught us that there is only one way to make a roofing that is both cheap and durable. That is by using coal tar pitch as the waterproofing agent in combination with wool felt. Pitch is the lowest priced material known that is adapted for protection against water. That it is the most durable, is proved by tests of thirty years in actual use. If pitch is used, it is really possible to secure a cheap, durable, ready roofing. There are other materials besides pitch that will make a satisfactory roofing, but they all cost very much more. None of them is as good as pitch, for pitch is ideal. Water is absolutely ineffective against it, both chemically and physically.

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TOPEKA BUSINESS COLLEGE, Topeka, Kans.

The Veterinarian

We cordially invite our readers to consult us when they desire information in regard to sick or lame animals, and thus assist us in making this Department one of the most interesting features of the Kansas Farmer. Kindly give the age, color, and sex of the animals, stating symptoms accurately, and how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. In order to receive a prompt reply all letters for this Department should give the inquirer's postoffice, should be signed with full name and should be addressed to the Veterinary Department of the Kansas Farmer, Topeka, Kans., or to Dr. C. L. Barnes, Veterinary Department, Kansas State Agricultural College, Manhattan, Kans.

If in addition to having the letter answered in the Kansas Farmer, an immediate answer is desired by mail, kindly enclose a 2-cent stamp. Write across top of letter: "To be answered in Kansas Farmer."

"Blind Stagers."—We have a disease among our horses that we do not understand; they first go blind and seem crazy, and run over anything in their way. Some die within an hour, some live for twenty-four hours; only one got well. They are dying all over the country; the horse that is getting well was bled in the neck and given linseed oil and turpentine. What is the disease and cause?
H. P. C.
Palso, Kans.

Answer.—Under separate cover we have sent you a bulletin regarding the trouble to which you refer. The bulletin is too long to copy in this column.

Diseased Tooth.—My 4-year-old sorrel mare has a yellow, offensive-smelling discharge from left nostril for the last eight or ten days. She eats well and seems all right other ways. There is no swelling about the head. I thought it might be from a diseased molar, but from the way she eats hard corn it can hardly be that. She had several attacks of distemper last summer, and an abscess may have formed. No treatment has been given. What can I do for her?
X. X.

Answer.—From the nature of the discharge I would judge that it came from a diseased tooth and would recommend having a competent veterinarian examine the animal and locate the affected tooth, as the pus has probably collected in one of the cavities in the head and then discharged into the nose.

Barbed-Wire Cut.—I have a horse that was cut on barbed wire just below the fetlock, last July. It healed pretty well but the flesh grows in a ridge along the cut, and runs some—also causes a liquid with a bad odor to cover the surface under the fetlock. I have used lunar caustic on the proud flesh, washed with carbolic-acid water and then applied air-slaked lime. It does not heal fully. What would you advise?
H. L. M.
Eldorado, Kans.

Answer.—I would advise your cutting the proud flesh out of the wound and then searing with a hot iron; then heal the wound with any of the astringent powders that you may find at a drug store. If none are available, have the following prescription filled and use it: Two ounces of iodiform, 1 ounce of boracic acid, 1 ounce of acetanilid, 1 ounce of tannic acid and 2 ounces of pulverized starch; mix and dust on the wound daily.

"Blind Stagers."—Will you kindly send me press bulletin in regard to blind stagers? Nearly every one in this neighborhood has lost horses with this so-called disease and I would like to learn something about the cause and cure.
F. B. S.
Stafford, Kans.

Answer.—We have mailed you the press bulletin you desire.

Ring-Bone.—My coming 3-year-old bay filly has an incipient ring-bone on left hind leg just above hoof; she is not lame but the enlargement shows quite perceptibly. A neighbor suggests that she may outgrow it. What do you think?
S. T. H.
Pleasanton, Kans.

Answer.—I would suggest that you secure from your drug store a fly blister, say 4 ounces, and blister the ring-bone every three weeks until you have given four applications. Allow the blister to act about 48 hours then wash off and grease. While the blister is acting keep the animal's head tied short enough that she can not reach the foot.

Lame Mule.—I have a coming 4-year-old mule that is subject to lameness in right front foot or leg. I can not tell which. He will get lame suddenly and be lame for from three to five days and then get all right, and probably be so for two or three months, then become suddenly and violently lame again. I can find no blemish or swelling or anything that looks as though it would cause lameness. Sometimes I see him in the pasture resting

his right front foot with tip of hoof on ground; he has been this way for 15 or 18 months.
W. C. C.
Cheney, Kans.

Answer.—The symptoms you give of the animal resting the toe would suggest the lameness being located in the back of the foot, the change in position being made to relieve the pressure from the tendon. You had better have some one who can give the animal a thorough test examine carefully those parts to locate the exact seat of the trouble.

Lice.—We have a cow that is bothered with lice; I never saw any like them. They bury their heads in the skin, and resemble a tick in shape. I have tried several remedies for their removal but have failed. Can you give me a good remedy?
C. E. J.
Omaha, Neb.

Answer.—We have sent you under separate cover a press bulletin on the preparation and use of lime-and-sulfur dip which we trust you can use with favorable results. The bulletin is too lengthy to publish in this column, and will be sent to any one having similar trouble in their stock.

Bunch at Hock Joint.—My 3-year-old colt, weight 1,200 pounds, has a soft bunch at hock joint, the size of a walnut; it is on the outside and can be pushed through in front; is there anything I can do for him? He has been worked some, but has never been lame.
S. L.
Shaw, Kans.

Answer.—A liniment containing considerable tincture of iodine rubbed thoroughly into the enlargement will be beneficial in removing it; such as 4 ounces of tincture of iodine, 2 ounces of capsicum tincture, and arnica tincture, 2 ounces; mix and apply to affected part daily.

Lameness.—My 2-year-old bay filly received a hurt while in pasture last summer. She was very lame in left hind leg, and we noticed a small running sore on the round of stifle next to flank; there was some swelling around the joint and she was very lame for two weeks, then the sore healed and swelling went down, and apparently she was all right; but in the course of a month it was noticed that she was a little lame; she stands with her foot turned back, and has grown worse the last month; we had to help her up yesterday. The sorest spot seems to be below the stifle joint. We have bathed it with Gumbault's Caustic Balsam.

I have a black mare that is always rubbing and scratching while in stable or in the lot. I can find no lice on her, but there is a scab or scurf in the hair next to the skin. She is falling off some in flesh.
N. J. G.
Langdon, Kans.

Answer.—The running sore from the stifle has evidently come from an opening into the joint. You had better use an astringent powder on the running sore, which can be obtained from any drug store, by having put together 1 ounce of tannic acid, 1 ounce of boracic acid, and 2 drams of powdered alum.

Illing Pigs.—I would like to know the cause of the death of two pigs which I lost this week. They heaved as though they had thumps, and would fall over and apparently have fits. After death they frothed and bled at the month. They were about 4 months old and in good condition and ate well until the day before they died. I have two more affected with the same trouble.
J. G.
Ottawa, Kans.

Answer.—Pigs that are badly affected with worms, until the entire intestine is filled, give the symptoms you describe. Better examine the ones affected and put them out of their misery. If worms are the trouble, preventive treatment should be followed. Will send you a prescription (bulletin) by mail which the Government has been using very successfully and I think will help keep the hogs in good condition.

Scours in Shoats.—Some of my shoats have scours. I had them on sowed rye, and fed shorts slop and corn. I thought it might be the rye that caused the trouble so turned them off, and have fed nothing but corn for several days, and to-day find another with the complaint. After being affected a few days, they get thin and weak and do not eat much. I should like to know the trouble and what to give them.
J. C. S.
Ottawa County, Kans.

Answer.—Would advise your discontinuing the corn entirely for the affected pigs, and give listerine in doses of a tablespoonful every three hours in half a pint of milk, to each hundred pound hog. Would advise feeding the rest of the hogs rather carefully on corn. A little bran fed to hogs when they have bowel trouble is often ad-

vantageous in remedying such conditions.

Fistula.—I have a mare that has had fistula for two years. She has been treated with different medicines, has a running sore on withers high up back of where the collar works, and a cavity between the shoulder blades. She has not been worked for 9 months; is 8 years old. I would like a remedy, also your bulletin.
W. T.
Wichita, Kans.

Answer.—We are sending the bulletin you desire on fistulous withers. You should open the abscess freely so as to get good drainage, and then follow directions in bulletin until it is healed. If you find that the tincture of iodine is causing too much irritation after using it for a couple of weeks, then resort to the use of tincture of calendula, a teaspoonful to a pint of water. Let us hear from you again if you have difficulty in treating this fistula.

Thin Stallion, and Blood Wart on Colt.—I have a colt that has a blood water on left side of body about size of a hen egg; what can I do to cure it?

I also have a 3-year-old stallion and I can't get him fat; he is in fair condition; what must I feed him to get him fat to sell in the spring?
X. X.

Answer.—Burn the wart off with a hot iron and then heal up with some common disinfectant.

Give the stallion a condition powder. If none are available, have the following filled: 1 ounce of pulv. nux vomica, 2 ounces pulv. gentian, 6 ounces pulv. glycyrrhiza root, 4 ounces of common salt and mix with 10 pounds of oil-meal.

Ringbone.—My 10-year-old mare has had ringbone for perhaps 18 months. When taken from the barn mornings she goes lame at first. Can it be cured, and will it stay cured? I would like to cure it before spring work begins. I have not treated it.
G. B.
Holton, Kans.

Answer.—A fly blister applied to your mare's ringbone every three weeks until you have given about four applications will doubtless be beneficial in removing the lameness. The animal's head should be tied rather short while the blister is acting, as otherwise she is liable to get her mouth blistered in biting at the parts that are irritated. We are sending under separate cover a press bulletin on ringbone issued by the veterinary department of the Experiment Station at Manhattan.

Worms in Horses.—Will you inform me of some reliable remedy for worms in horses? Also full directions for using.
C. S. B.
Mt. Hope, Kans.

Answer.—The following prescription will be beneficial in removing worms: 1 ounce of pulverized nux vomica, 2 ounces of pulverized iron sulfate, 6 ounces of pulverized glycyrrhiza root, 4 ounces of common salt, 6 ounces of sulfur. Mix together and put in 5 pounds of oil-meal. A heaping teaspoonful twice a day in ground feed will be the proper dose of this mixture.

Lame Horses.—I have a 3-year-old mare that is lame in or above pastern joint or fetlock; it is swelled and sore to the touch; she hops around and when standing uses her toe; she is getting thin; she was the same way last summer; we used all sorts of liniments, and after three months she got well. She has not been in harness.
H. B.

A 10-year-old road-horse got hurt last November just above the large pastern; it is swollen and hot. He limps some, and rests the leg when standing.

Should the chill be taken off the water for a horse with distemper?

Is there any cure for a horse whose pastern joint seems to push over the under part? It seems that the joint is too weak to keep it in place so the upper part of the joint pushes forward over.
H. B.

McPherson, Kans.
Answer.—I would advise using a liniment on the first horse that will not blister, such as spirits of camphor 4 ounces; tincture of belladonna 4 ounces; fluid extract of poke root 3 ounces; compound soap liniment 8 ounces. Rub on affected part twice daily.

The same liniment is also proper to use on the 10-year-old road-horse.

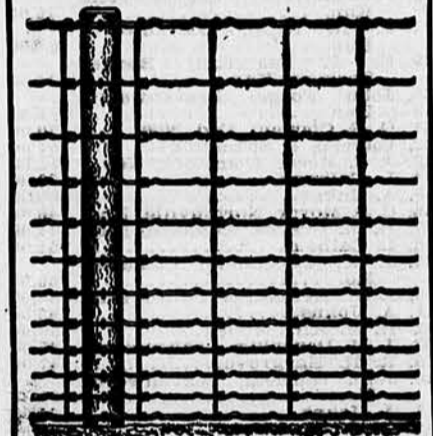
The chill should be taken off the water for a horse that has distemper; if the horse will eat bran mash, it should have a hot bran mash at least once a day.

In regard to the horse with weak pastern, would advise considerable rubbing with a stimulating liniment—4 ounces of turpentine to 6 ounces of linseed oil with 2 ounces of tincture of cantharides. Shake well together and rub daily on the joint, with considerable friction.
C. L. BARNES.

American Fence Talks

American fence is a structure of hard, stiff steel wires, possessing great strength and flexibility, adjustable to uneven ground, sound, durable and guaranteed. Great improvements are continually being made over the fences of years ago. See the modern, up-to-date American fence, built of big lateral wires, with heavy upright or stay wires hinged—the most perfect structure for a square mesh fence.

The thirty plants of the American Steel & Wire Co. make every known grade of wire, from the stiffest wire for pianos to a wire almost as soft as silk for weaving into wire cloth. With these enormous facilities for manufacture and observation of the action of wire in all kinds of service, not only is the best wire made for the use required of it, but for less money.



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We sell through dealers all over the country. In this way, the buyers' interests are best looked after. Dealer then becomes your business friend and he will see that you are treated right. See him, examine different styles get catalogue and make selection to suit your requirements. Or, write us direct and we will send catalogue and tell you where you can get the fence.

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T. C. DAVIS, Benedict, Kans.
Benedict, Kans., August 26, 1905.
I have this day sold my interest in K. C. Dailey & Co. to T. C. Davis, who will hereafter conduct the business in his name. Signed, K. C. DAILEY.



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Kansas Binder Twine.

EDITOR KANSAS FARMER:—At the last session of the Kansas State Grange, held at Madison, Kansas, December 12, 13 and 14, 1905, a resolution was passed advising that I act as a committee to go to Lansing at my earliest convenience and investigate the twine plant at the penitentiary (as there had been so much complaint, either imaginary of real, as to the quality of this twine) and to learn if possible whether this complaint came from the farmers who had used the twine or originated from the twine trust, or from the implement dealers on purpose to injure the sale of the penitentiary twine.

On February 7, 1906, armed with a letter of authority and recommendation from the master and secretary, approved by the executive committee of the Kansas State Grange, I proceeded on my mission, and met the warden, W. H. Haskell, in his office. He was very busy, as the State board was then in session. I handed him my letter from the secretary of the State Grange, and after reading the same, he introduced me to each member of the State Board; after which his chief clerk, J. C. Brown, showed me through and explained to me in detail the workings of the plant in its entirety. First he showed me a room where they had in store 1,000,000 pounds of manufactured twine ready for shipment, and 1,000,000 pounds more of raw sisal in the bale ready to be passed through their many looms and vast machinery to get it ready to be spun into a strictly fancy article of binder twine. It was quite interesting to me to note the starting of the crude sisal from the bale into the first machine and from that to the second and so on, through a score of powerful looms until it was thinned down to the proper texture, strength and firmness in order to get it spun into an even grade of twine, after which it was passed over in baskets to the other side and there reeled into balls, then pressed and weighed, and the balls assorted until ten balls were found that weighed the exact 50 pounds. Then it was passed to the sacker ready to be stored away for shipments on orders. The superintendent made this statement: They had finally overcome all obstacles and impediments that used to annoy them and are now turning out every working day an average of 711,000 pounds of No. 1, pure sisal twine, as good an article as is sold in the State, for they use no shoddy. Now, with the meager appropriation of only \$150,000 per annum, they expect to turn out nearly four million pounds of No. 1 twine, equally as good as the trusts' so-called manilla twine, at a less cost to the consumers, and the quality is fully guaranteed.

And now, farmers of Kansas, this twine plant belongs to you and the benefit you derive from its operation depends wholly upon the liberal patronage you give it. This twine plant, with a more liberal patronage and State appropriation, has a capacity sufficient to supply every farmer in the State with all the twine needed to bind his entire crop; so why not lay prejudice aside? This twine is not made under the contract system. It being a product of the State of Kansas, we should help it along by buying twine manufactured in our own State. If we can not get a reasonable profit, let the farmers of a neighborhood club together and send their orders direct to J. C. Brown, the gentlemanly superintendent of the plant who keeps a record of every transaction, the date of order received, by whom, and a detail of ship-

ments out so it can be referred to at any time; and your order for 500 pounds, or a car load, provided the cash or draft accompanies the order.

Every subordinate grange can have its secretary send in orders if dealers will not handle it for them. In conclusion let me say that as a representative of the grange, a farmers' organization, I was treated very nicely by all the officials. They did all in their power to make my call a pleasant one and I hope that our people and the farmers generally will assist by their patronage and support in making this Kansas product a success.

A. P. REARDON.

New Lancaster Grange No. 223, Miami County.

New Lancaster Grange gave a public installation at their January meeting, closing with one of the famous grange feasts. This was our first attempt in this direction and it proved a great success. Past Master Elkington acted as installing officer and the beautiful ceremony was rendered without a hitch. A full corps of officers were installed for 1906, and our prospects for the future, are bright. J. J. Clark was elected Master, F. B. Conner, Lecturer, and W. H. Grant, secretary. After the ceremony an excellent feast was served which in itself spoke well for the culinary art and cultivated taste of the sisters. At a late hour all went to their homes feeling that our first attempt in a social way was a success.

Brother J. R. Lemen, one of the delegates from Miami County to the State Grange at Madison, Kansas, and the writer were invited to visit Miami Central Grange located in Miami County. We accepted the invitation and visited with it on the evening of January 26. There was a large number in attendance and we were given a cordial welcome. Brother Lemen gave a very interesting account of his trip and the proceedings of the Kansas State Grange held at Madison, Kansas, in December. Short addresses were made by a number of the home members. Brother Lemen also communicated the annual word after which the good sisters served an excellent supper. A member stated to me that we were the first visitors that ever attended their grange, and the fact that this visit worked great good to that grange, reminds us that there is not enough visiting done by the neighboring granges.

This grange is over two years old, has fifty members, and is contemplating building a new hall at once. It has a good territory, and we predict for it a great future.

I want to call attention of cooperative circles in the State to the remarkable showing made by Brother J. R. Lemen, manager of the cooperative store at New Lancaster. In the last twenty months. On a paid-up capital of \$2,000, he showed a net profit of over \$700. Mr. Lemen was a student of Ed Blair, formerly of Cadmus, Kansas.

This grange is taking steps to introduce a bureau of information, whereby

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do more work and earn still more money.



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Only \$25.00

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For particulars, apply to

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Topeka, Kansas.

members may list articles they may have to sell, such as grain, stock, poultry, implements, etc. We believe it will help to further the principles of cooperation.

T. B. CONNOR,
Lecturer.

Removal of Tax on Domestic Alcohol Made Unfit for Use As a Beverage.

EDITOR OF THE GRANGE DEPARTMENT:—Vineland Grange No. 163 has taken favorable action on the petition for the removal of the internal revenue tax on domestic alcohol, and desires the local press to take the matter into consideration and, if possible, is urgently requested to give this matter its editorial support, believing that by the support of the press, this matter will come before the people, and if thoroughly discussed, will give the public a better understanding of the question, and will also be of much help to our members of Congress in their efforts to have this tax removed.

It is no longer a theory, but a fact, that alcohol is a great fuel, or a great saver of fuel in foreign countries, and can as well be applied in our home land. It has not only proven itself a saving in fuel, but it is also a channel through which the farmers with damaged grain can find a market thus making it profitable to the farmers directly, and to the whole country indirectly. There are hundreds of other uses for domestic alcohol which are retarded in this country on account of the high revenue. The principle one is its use for heating our homes. Gas, at the present time, is very satisfactory, but in alcohol we do not find the fumes which gas produces, and do not run the risk of explosion.

For the purpose of bringing this matter before the public, I send this to the

Grange Department of the KANSAS FARMER, asking in the name of Vineland Grange that you give this matter some of your valuable space.

CARL LINDSTROM,
Secretary.

RESOLUTIONS FOR THE GUIDANCE OF POMONA AND OTHER SUBORDINATE GRANGES.

Resolved; That we indorse the action of the National and State Granges at their recent annual conventions in unanimously adopting resolutions favoring the removal of the internal revenue tax from domestic alcohol, made unfit for use as a beverage, and,

Resolved, That the master and secretary are hereby instructed to sign the petition approved by the National Legislative committee to affix the seal of the Grange, and send it with a copy of these resolutions, and of those passed by the National Grange, to our representative in Congress, in order that he may be informed of our desire for the immediate enactment of the legislation necessary to accomplish the purpose of these resolutions, and of our further desire that he should at once use his influence to that end, and,

Resolved, That copies of these resolutions be sent by the secretary, to the local press with the request that they give their editorial support to the movement and open their columns to the work of educating the public as to its importance.

No Snub Intended, Either.

"Do you have matins in this church?" asked the High Church visitor of the verger of the village church. "No, indeed," replied that dignitary with scorn. "We has oil cloth, and right up to the chancel, too!"—Wisconsin Church Life.

Home Departments

CONDUCTED BY RUTH COWGILL.

JOYS OF THE COUNTRY.

I would from the city's rule and law,
Its fashions and forms cut loose,
And go where the strawberry grows on
its straw,
And the gooseberry grows on its
goose,
Where the rainip tree is climbed by the
cat,
As she reaches for her prey,
The guileless and unsuspecting rat
On the rattan bush at play;
Where the cow on the fragrant crowslip
feeds
Where the dew on her dewlap lies,
And the dog to the waving dogwood
speeds,
And the bull to the bullrush files.
—Exchange.

*Educated Motherhood.

FLORENCE SHAW KELLOGG.

IN TWO PARTS—PART II.

The wise mother studies each child as the horticulturist studies a new flower, and her education comes little by little to meet its need. There is scarcely anything of which she does not need some knowledge. She should strive earnestly to keep herself abreast of the times, that, as her child grows older, she may give him intelligent guidance and companionship. She should be able to sympathize with him in all his ambitions and have earnest part in all his life. She needs some understanding of chemistry and physiology to know what foods are best to build up a strong, healthy body; of botany and zoology to help him rightly appreciate the beautiful world in which he lives, the great work-shop of God (which thought so impressed Agassiz that he would never allow any levity among his students in his summer school on Penekese Island, but required them to bring the same reverent spirit there, as investigators of God's way in nature, as to church); of mathematics that she may help him in his reasoning and in the solving of the many problems that can be demonstrated by "line and rule;" of literature that she may direct his reading and help him to find the beautiful treasures in song and story, and become familiar with the great minds of all ages, finding in them a comradeship most helpful, a solace for his weary hours, cheer and encouragement for his dark ones, and a spiritual and mental wealth of untold preciousness and worth; of history that she may help him to an understanding of the way by which we have come, and through what cost of life and treasure his home is assured to him. And thus I might go on through the whole list, giving to each subject its due meed of praise, for all are good and helpful to us in our work as mothers; and yet I can not say they are indispensable, for many a good mother, untaught of schools, ignorant of books, has proved them otherwise.

THE MOTHER INSTINCT.

While we fully acknowledge our need here, and the broadening, deepening influence of true education we must admit that there is, for the mother, a something more—a something better and more imperative even than this, a sweet motherliness—an intuitive understanding of the child and its needs that education may help wisely to direct, but can not supply if it be lacking. It is something hard to define or name, a God-given instinct, an enrichment of the soul, an education of the heart that must be, whatever else be missed. Having this, the mother safely guides her little flock over the shoals and quicksands into the safe harbors of true manhood and beautiful womanhood.

The mothers of many of our great men and women have been uneducated, as the world regards it, and yet how grandly they did their work! How deeply, how enduringly they impressed themselves upon the minds and hearts of those for whom they lived and worked! Take the mother and step-mother of Abraham Lincoln, with what would now be considered scarcely more than the rudiments of an education, yet what a work they did in that noble soul! How deep and lasting, how potent for all things high and holy was their influence. They were God-taught mothers—mothers who looked within and learned of the sacred things hid in their hearts, as in the hearts of all good women and men. It is motherhood personified, that wealth of love

*This is a continuation of an article which was begun last week and should have read, "Educated Motherhood—Florence Shaw Kellogg. In two parts. Part I."

and brooding tenderness, that protecting care that awakens in the heart of the true woman with the first cry of her child, and grows ever stronger, deeper and more holy as life goes on. It is God's own education, gained only in His school, taught from the holy depths of His Fatherhood. "Like as a father pitieth his children" so the great heart of the Father-God yearns over and teaches us each one.

THE MINISTRY OF CHILDREN.

A vital part of the mother's education comes from the children themselves. No one can give herself up in loving care and ministry to them without receiving from them far more than she gives. Holland wrote, "I feel how wonderful to me has been the ministry of my children, how much more I have learned from them than they have ever learned from me; how, by holding my own strong life in sweet subordination to their helplessness, they have taught me patience, self-sacrifice, self-control, truthfulness, faith, simplicity and purity. Ah! this taking to one's arms a little group of souls, fresh from the hand of God, and living with them in loving companionship through all their stainless years, is, or ought to be, like living in heaven, for of such is the heavenly Kingdom."

Education gained from schools and text-books we may have—we should have if possible—for the more we are ourselves developed and trained, the better are we fitted to train our children; the more clearly we see the wonderful way of God in life and nature, and can better awaken thought and feeling in them. But education of this other kind we must have. We must understand that

"Artists of the Soul are we
Moulding life and destiny;
Workers at a task sublime
Which defies the touch of time."

fitted for the high work entrusted to us. The mother, more than any other, moulds the character of her child. It is her work to frame and develop, to evolve all that is good and pure, while she represses and eliminates all that is not good. She builds not for to-day alone, but for all the days to come.

THE HOME THE WORKSHOP.

Our homes are our workshops in which we build most beautiful structures. It is there that we learn the value of a simple, true, honest life; there that our children learn to know themselves and to understand the relation of each to each; there that they find that nothing is small or insignificant, nothing that may not weave into the web of life and help it to be beautiful. There, as Francis Bacon said, they see how "God hangs the greatest weights upon the smallest wires," and learn that each wire must be strong and trustworthy, ready in its place to fulfill the work assigned to it. In the home Love takes them by the hand and leads them out of self and into service, while they learn over and over again with each new day, "that the glory of life is to love, not to be loved; to give, not to get; to serve, not to be served;" and all the fair flowers of life grow and blossom there.

I read a fine thing in a recent number of "American Motherhood" that I am tempted to copy here:

"HOME LIFE A SYMPHONY.

"A young Swedish musician, ill and poor, was received as a guest in an American home. From her easy chair she watched the household life around her and saw that 'Mother was the center of everything.' One day when she and the mother were alone together she said, 'I have been thinking of you much, very much, to see if I can tell what you are. I know now; this family is a great symphony and you are its theme. Every one sings to you. Without you would be no harmony at all, only discords, but you hold it all together. No matter what is sung, I hear that same sweet theme through it all, now high, now low, now soft, now loud, but ever there. You sing with us all, not only your own, but with me, the poor stranger. It is a beautiful theme. I love it.' Is this not a beautiful and poetic tribute to the true mother and home, telling as it does, how surely the sweetness of the theme, the atmosphere of the love-bulld home is felt, 'even by the stranger within its gates,' and how much more surely and helpfully by the sensitive little children gathered there? Life in each home should be a 'symphony' with mother and the love she personifies the theme,

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leading in a natural, healthful way to the divine life and love and the home, 'not built with hands, eternal in the heavens.' Oh, mothers, know you not that 'Motherhood is priced of God, at a price no man may dare to lessen or misunderstand?'

Know you not that there should be,

"Many windows in her soul
That all the glory of the universe
May beautify it? Not the narrow pane
Of one poor creed can catch the radiant
rays
That shine from countless sources. Tear
away
The blinds of superstition, let the light
Pour through fair windows, broad as
truth itself
And light as heaven. Turn your ear
To all the wordless music of the stars,
And to the voice of nature, and your
heart
Shall turn to truth and goodness as
the plant
Turns to the sun. A thousand unseen
hands
Reach down to help you to their peace-
crowned heights
And all the forces of the firmament
Shall fortify your strength. Be not
afraid
To thrust aside half truths and grasp
the whole,"

as God shall give it to you day by day as you walk with him down "the long pathway of thought" and receive your education fresh from his great heart. Learn of books all that is given you to learn for this is good; but most and best of all learn of life, learn of nature, learn of God, for this is indispensable, this is eternal, and "fadeth not away."

Tested Recipes.

French Cream Cake.—One cup sugar, 3 eggs, beaten with sugar thoroughly, 1½ cups flour, 2 tablespoonfuls baking-powder (mix with flour dry); 3 table-spoonfuls water. Bake in two tin pans. When done turn out on molding-board, split with sharp knife and spread with cream.

Cream.—One scant pint sweet milk heated to near boiling. Add two small tablespoonfuls corn-starch, wet with a little cold milk; two eggs beaten with 1 cup sugar, juice and grated peel of one lemon. Spread with frosting if desired.—Mrs. K. J. McCracken.

Soft Ginger Cake.—Stir to a cream 1 cupful of butter and ½ cupful of brown sugar. Add to this 2 cupfuls of cooking molasses, 1 cupful of sour milk, 1 tablespoonful of ginger, 1 teaspoonful of cinnamon, 3 eggs, teaspoonful of soda, 4 teacupfuls of flour. Divide the mixture in two pans and bake in slow oven from 4 to 60 minutes.—Mrs. Clarke of Sabean Club.

Lazy Doughnut.—One cup sugar, 1 cup sour milk, 2 eggs, 2 tablespoons melted lard, ½ teaspoon soda; spice if liked. Stir stiff as you can with a spoon; roll, cut and fry.—Mrs. Mary Buckman, Sabean Club.

Pumpkin Pie.—One cup stewed pumpkin, 1 cup sweet milk, ½ cup sugar, 2 eggs, 1 heaping teaspoon corn-starch, flavor with nutmeg.—Mrs. F. W. Ross, Alden.

Custard Pie.—Three eggs well beaten, ½ cup sugar, 1 pint sweet milk, 1 teaspoon cornstarch, flavor to suit taste.—Mrs. F. W. Ross, Alden.

Apple Honey.—Select firm apples, peel and grind through a sausage mill; to 1 quart of apples after they are ground, add 1 quart of sugar and 1 quart of water, and cook till thick enough.—Mrs. F. W. Ross, Alden.

Rose Tournament.

The writer having had the pleasure of viewing the Rose Tournament, New Year's Day, at Pasadena, California, an account of it may be of interest to the readers of the KANSAS FARMER.

This spectacle was one of the most gorgeous in history, with its handsome equipages, masses of bloom and beautiful floats, while the leading hotels of the Crown City decorated turnouts lav-

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ishly. A flying detachment of automobiles, touring cars and runabouts formed the first part of the parade seen by the watchers along the route, who had been waiting for more than an hour after the scheduled time. Their appearance was the signal for applause which continued almost without a break until the last straggling burro at the end of the procession had passed.

The queen of the tournament, with her twenty-four maids of honor, rode on a royal barge, a low automobile truck with rows of seats running across from wheel to wheel, rising in tiers toward the rear. This barge was shell-shaped and made more massive in its general effect by a dense covering of greenery. The ground work was of pepper boughs, covered with a lighter coat of smilax and embellished with marguerites. Heliotrope and violets were used in the trimming and for lining the interior of the shell.

The Garfield School offering was a float representing the Pasadena Tournament of Roses. On the platform, that was in itself a miniature garden, were all of the girls in the eighth grade of this school. These girls occupied practically all of this entire float, each representing an American Beauty rose. The lower part of their costumes was of green. Turned-up berths of deep red gave the appearance of petals, and the yellow centers were made with yellow ruffs around the neck and also turned up. Each girl wore her hair in braids wrapped around and around the head and powdered. Five boys in white suits with long colonial coats, and white shoes and stockings, also occupied positions on the float. There was a touch of comedy about this float, contributed by a small colored boy dressed in a white suit with red vest and other gorgeous trimmings, who clung to the rear of the float.

There were also represented the Grant, Lincoln, Columbia and Madison Schools, all of which were lavishly decorated. This spectacle was one of genuine interest to the writer, and to any Easterner like myself a sight of this kind is marvelous.

I was also particularly interested in the California method of preserving fruits and eggs. The Pacific Supply & Brokerage Co., Severance Building, Los Angeles, gave me their recipes gratuitously and stated that they sent them to any one for the asking.

The Californians are certainly the most generous and entertaining people that I have ever had the pleasure to meet.

THOMAS F. MORGAN.

The Young Folks

THE SECRET OF THE SONG.

She stole to my side in the twilight.
The beautiful goddess of song.
Her cheeks, like the tints of the morning
And lips like the glow of the dawn.

Oh, tell me your secret I pray you,
Fair, Goddess—I boldly entreat;
Your words are like exquisite music,
Your voice is so low and so sweet:

There's a charm in each unstudied accent
Like the natural grace of a flower
I have sought it in vain in the art rooms,
I have searched for it hour by hour.

She smiled as she lifted the harebell
I'd gathered to throw away
"Why, song is a gift from God," she said,
But its mission is sympathy.

The soul of the song is greater
Than the rhythm for which you seek;
And the highest aim of the singer
Is to comfort the faint and weak.

Would you learn the fair art of the poet?
You must pass through the gateways of pain;
Drink deep, at the fountain of sorrow,
And suffer again and again.

Then listen and wait for the voices,
As you stand 'mid the hurrying throng;
And perchance in the hush of the twilight
You may catch the true "secret of song."

MARIAN GILKINSON.

Aunt Kate to Donald on the Farm.

Chicago, February 18, 1906.

My Dear Boy:—So you think that I'm neglecting you lately?

I'm sorry, but, you see, both Katharine and Jack have been getting more than their share of letters.

I have somehow gotten it into my mind that being in the city, attending Washburn, going into society a little and all that, they have needed letters from their maiden aunt, more than my big boy in the country, who might seem to have fewer trials and perplexities.

Never mind, if you go to college next

fall, you will be deluged with letters of advice and warning, as Jack and Katharine are. That's the privilege of a maiden aunt.

I have thought of you many times in the last few weeks, Donald, if I have not written.

Sometimes in the rush and push of the Chicago streets, where one has to watch out or he will be run down by teams or cars, so hurried and crowded is the traffic; where human life seems to count for so little, and where the rights of other people are quite lost sight of, apparently, I have had a quick vision of the wide, wind-swept fields, and of you, contented and happy on your upland farm. Working? Yes, but working out under God's blue expanse of sky, in the wind and the sunshine, with space to grow mentally, physically and spiritually; with the birds and bees and God's animals about you, and at your feet the springing wild flowers, and the waving prairie-grass—time to grow broad-minded and strong and manly; time to think—time even to dream, perhaps. How can men think their highest, noblest thoughts in the whirl of a city like this, Don?

I want you to go to college and, in some measure, fit yourself for life. Then I want you to go back to the farm and live. Much of this is not living, it is only existing. You can see it in the harassed, careworn faces and the indifferent glance.

Life becomes a great whirling machine, and the weary, seething mass of humanity needs must follow the ceaseless grind. By all means, Donald, choose the farm, if you want to live, and get the sweetest and best out of life.

You want to know what I think of fraternities? You are going to have your mind made up, as to what you shall do when you do enter college, I see.

Now, Donald, what I honestly think, isn't at all popular. But I am given to telling the exact truth when I do express an opinion, and since you ask it, here it is:

I believe that neither fraternities nor sororities have any proper place in high schools. I believe that colleges would be much better off without them. They do not belong to my ideas of democracy and general good fellowship. They necessarily detract from one's interest in school work, which is primarily the reason that young people are in college. Their tendency is to make study almost if not quite secondary. They add to the expense very materially, and help to foster a spirit of rivalry. During the times when new members are being "rushed," lessons are bound to suffer. They are exceedingly selfish, for many fine young people are neglected, and their good and sterling qualities hardly discovered, if they choose to join no fraternity.

I believe it to be true, that young men will condone a grievous fault or excuse a hurtful habit in another young man, if he happens to belong to the same fraternity with themselves. But, more than all, I believe that it takes from the interest that young men feel—or might be led to feel—in church affairs.

I think if you can be happy at college without joining a fraternity, your school work will be better, more effectual and less selfish.

You say that next week you want some advice of a different kind.

Why, I shall presently be getting vain—and conclude that I'm an oracle—a veritable "Lady from Philadelphia."

With love.

AUNT KATE.

Musical Insects: The Giant Katydid.

(Cyrtophyllus perspicillatus, Linnæus).

ELBERT S. TUCKER, MUSEUM ASSISTANT IN SYSTEMATIC ENTOMOLOGY, UNIVERSITY OF KANSAS, LAWRENCE.

One blessing, perhaps, that we ought to be thankful for is that only certain small groups of night insects are musical; if all kinds of insects were as noisy as some examples of the orthoptera, such as crickets and katydids, there is no telling whether a person would be able to sleep in the summer time. A year ago last summer, I heard reports of a noisy creature that disturbed the slumbers of people in its vicinity, and then I read in the local paper that it had met its fate. The notice was as follows:

"KATYDID SANG ALL NIGHT.

"The neighbors in the 700 block, Tennessee Street, have been greatly annoyed for the past week by a katydid. It would sing all night long and sang so loud that some thought it must be a tree-toad. All attempts to shake it from the tree proved useless. It was caught last night and could be termed a giant katydid. It measured

Backache, "The Blues"

Both Symptoms of Organic Derangement in Women—Thousands of Sufferers Find Relief.



How often do we hear women say: "It seems as though my back would break," or "Don't speak to me, I am all out of sorts"? These significant remarks prove that the system requires attention.

Backache and "the blues" are direct symptoms of an inward trouble which will sooner or later declare itself. It may be caused by diseased kidneys or some derangement of the organs. Nature requires assistance and at once, and Lydia E. Pinkham's Vegetable Compound instantly asserts its curative powers in all those peculiar ailments of women. It has been the standby of intelligent American women for twenty years, and the best judges agree that it is the most universally successful remedy for woman's ills known to medicine.

Read the convincing testimonials of Mrs. Holmes and Mrs. Cotrely.

Mrs. J. C. Holmes, of Larimore, North Dakota, writes:

Dear Mrs. Pinkham:—
"I have suffered everything with backache and female trouble—I let the trouble run on until my system was in such a condition that I was unable to be about, and then it was I commenced to use Lydia Pinkham's Vegetable Compound. If I had only known how much suffering I would have saved I should have taken it months sooner—for a few weeks' treatment made me well and strong. My backaches and headaches are all gone and I suffer no pain at my monthly periods, whereas before I took Lydia E. Pinkham's Vegetable Compound I suffered intense pain."

Mrs. Emma Cotrely, 109 East 13th Street, New York City, writes:

Dear Mrs. Pinkham:—
"I feel it my duty to tell all suffering women of the relief I have found in Lydia E. Pink-

ham's Vegetable Compound. When I commenced taking the Compound I suffered everything with backaches, headaches, and female troubles. I am completely cured and enjoy the best of health, and I owe it all to you."

When women are troubled with irregular, suppressed or painful periods, weakness, displacements or ulceration, that bearing-down feeling, inflammation of the female organs, backache, bloating (or flatulence), general debility, indigestion and nervous prostration, or are beset with such symptoms as dizziness, faintness, lassitude, excitability, irritability, nervousness, sleeplessness, melancholy, "all gone" and "want-to-be-left-alone" feelings, blues and hopelessness, they should remember there is one tried and true remedy. Lydia E. Pinkham's Vegetable Compound at once removes such troubles.

No other medicine has such a record of cures of female troubles. No other medicine in the world has received this widespread and unqualified endorsement. Refuse to buy any substitute.

FREE ADVICE TO WOMEN.

Remember, every woman is cordially invited to write to Mrs. Pinkham if there is anything about her symptoms she does not understand. Mrs. Pinkham is the daughter-in-law of Lydia E. Pinkham, her assistant before her decease, and for twenty-five years since her advice has been freely and cheerfully given to every ailing woman who asks for it. Her advice and medicine have restored to health innumerable women. Address, Lynn, Mass.

Ask Mrs. Pinkham's Advice—A Woman Best Understands a Woman's Ills.

about an inch and a quarter long and had a very large body; its wings were immense. It will be a good specimen for one who is collecting insects."

(From Lawrence Journal, August 4, 1904.)

On inquiring if the specimen could be obtained, I learned that chickens



A Pair of Giant Katydid—Male (upper figure) and Female. From Nature. (Reduced to one-half natural size, from plate in "Tenants of an Old Farm.")

had eaten it. However, my disappointment was banished a few nights later when I heard a strong, rasping noise which issued from a tree near a neighbor's house, on a lot next to where I lived; and as it continued all night, I



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judged that an accommodating specimen of what I wanted had located especially for my benefit. A night or two after, when another songster began calling, I concluded it was time to make an attempt, at least, to capture one or both of the supposed insects. So, provided with a lighted lantern and a poison bottle, one night I climbed the tree, a moderate sized elm, in which the first fiddler was harbored, and located the fellow by his racket. He was a little cautious when I approached him with my light and stopped fiddling, but remained within reach, although attempting to conceal himself among leaves on the under side of a branch. With one well-aimed grab, I secured him in my hand and soon he reposed safely in my poison bottle. However, his comrade in another tree, a smaller elm, repeatedly evaded me by climbing out to the tips of branches beyond reach and out of sight. The captured specimen was identified as *Cyrtophyllus perspicillatus*, Linnæus, and is now the only example of its species in the University collection.

To show some inquiring neighbors how the insect's call was produced by a rubbing action of the fore wings, I caused the note to be sounded artificially, after the insect was dead, by moving those wings back and forth in the grasp of my fingers, quite to the astonishment of my audience. As might be expected, however, the sound thus reproduced was not so loud as the live insect made.

For an explanation of the musical apparatus of insects, or in answer to the question, "Do all insects make their music in the same way?" I beg to refer the reader to the chapter treating of music-making insects, in the book entitled, "Tenants of an Old Farm." In part it says:

"In the katydid, for example, the musical instruments are a pair of taboretts." (Then follows a description of the insect, together with illustration, the latter, herewith exhibited, represents both male and female to better advantage than words can portray.)

"The taboretts are formed by a thin and transparent membrane, stretched in a strong, half-oval frame in the triangular overlapping portion of each wing-cover. When the male wishes to sound his call, he opens and shuts the wing-covers so that the frames of the taboretts rub rapidly and violently against each other. The mechanism of the taboretts and the concavity of the wing-covers reverberate and increase the sound to such a degree that it may be heard in the stillness of the night at the distance of a quarter of a mile.

"The music of the katydid is certainly remarkable considering how it is produced. It consists of two or three distinct notes, almost exactly resembling articulated sounds. These correspond to the rapidity with which the wing-covers are shifted across each other, and the note produced is very well expressed in the popular name of the insect.

"The story of katydid's development is but a repetition of the cricket's. It is found in the perfect state during the months of September and October, at which time the female lays her eggs. These are about an eighth of an inch in length, and resemble tiny, oval, bivalve shells in shape. The insect lays them in two contiguous rows along the surface of a twig, the bark of which has been previously shaved off or made rough with her piercer. Each row consists of eight or nine eggs, placed somewhat obliquely and overlapping each other a little, and they are fastened to the twig with a gummy substance. In hatching, the egg splits open at one end and the insect creeps through the cleft. Its history after that, as I have said, quite resembles that of other orthoptera."

Numerous examples showing these eggs in natural positions have come under my own observation. They have been found in fall, winter and spring, with the eggs exposed just as they were laid, both to enemies and weather. The instances are recorded as follows: In September, on weed-stalk; in February, on twig; in March, on apple twig; in May, on grapevine—all in Douglas County; and in April, on twig of peach in bloom, Sedgwick County, Kansas.

Another case somewhat perplexed me as to whether I had found cricket or katydid eggs. Two crickets, specimens of the common black kind, flew in at the window of my bedroom during one July night, probably being attracted by lamplight, and then escaped from my efforts to capture them by springing into the recesses among my books stacked on shelves against the wall. From this place, strong chirping sounds were emitted which frequently awakened me from sleep during two or three nights afterward, until finally search was made to catch them, but in vain.

The disturbance evidently caused them to move elsewhere, for they were neither seen nor heard any more. However, a few days later, while shifting some of the books, a double row of eggs was noticed on a paper-covered catalogue, one row extending along the back and the other adjoining along the edge of the cover. My first supposition was that one of the crickets, the mate of the fellow that chirped so freely, had laid these eggs; but, on the other hand, their appearance and arrangement was exactly like those of a katydid. Hence, I have since wondered how a katydid could enter and leave my room without being detected, or why it should lay eggs where the young ones when hatched would perish for want of food.

An explanation should be included here to the effect that in all these cases, very likely, the eggs belonged to common species of the katydid and not to the giant katydid, which, as mentioned, is a rare insect in Kansas. Katydid's usually frequent wild thickets and do little damage to vegetation, compared with crickets.

Since so much information has been drawn from the book, "Tenants of an Old Farm," due appreciation of this commendable work should be accorded here. The presentation of scientific truths in the form of a popular narrative, such as would hold the attention of the ordinary reader, is a plan well carried out by the author of this book, Doctor H. C. McCook, and its success is now attested by a new and revised edition. What grand opportunities for revealing Nature's secrets are found on every farm, but how few are the persons who regard the wonders about them! Even the smallest creatures, as the common insects and spiders, live romantic lives, making marvelous provisions for their protection and sustenance, which people are too prone to overlook.

The book purports to have been written by a professional man forced by ill health to give up a lucrative practice and live for a time on a farm. But here, he finds he is not the only tenant, and his love of natural history induces him to study the insects and spiders, thereby affording a healthful as well as instructive diversion. His observations are presented in the form of entertaining stories which are told in a conversational way, as if to friends and members of his household, who often enter into a general discussion during their evening gatherings about the fireplace, and many amusing incidents are related. Besides, the book is replete with illustrations from nature, interspersed with comical adaptations, from the drawings of master artists. It is not only a revelation to country folks, but brings the charm of rural study direct to the city home.

The Little Ones

WHY?

"Brother," said Ruth to Teddy, one day, as the children were out in the yard at play.

"I don't see how the little plants know they should send their leaves up and their roots below."

"How do you know," he scornfully said, "You should stand on your feet, and not on your head?"

Johnnie's Fun.

GERTRUDE L. ARNOLD.

"Johnnie, I want you to take care of baby Harold while I go over to Mrs. Brown's," mamma said. "He is asleep in his cradle and may not awake until I return."

"All right," Johnnie promised. It was great fun for awhile. He played that he was a soldier on guard and marched up and down before the sitting-room door; but that soon grew monotonous because, as he said, he "couldn't shoot nothing without wakening the baby." He went out in the kitchen and played that he was a great hunter, and had thrilling adventures with wildcats, until Puss and Tabby, tired of the fun, took themselves off to the barn.

He wandered listlessly into the sitting-room. The baby was still sleeping. Over in one corner stood the tin soldiers. Johnnie thought at first he would get them out and play war. "But, pshaw!" he thought, "I'd have to push them every step they took, and when I get ready to charge, as real soldiers do, they always fall over."

Suddenly he exclaimed: "I know what I can do. I'll have a sale. Guess they can listen most as good as anybody, if they can't walk."

The tin soldiers were arranged in the center of the room. A chair before them served for a platform. Papa's big hammer was brought from the tool-

house, and everything was now ready for the sale—except the things to be sold. Puss and Tabby were brought in, but they positively refused to be put up at auction. "Nobody would want to buy cats anyway," Johnnie reflected, nothing daunted. If he only had some pigs or a calf—but that seemed impossible, unless—he might go out to the barn if he could leave the baby. Then the idea came to him, why not sell the baby? Wouldn't it be fun to black it and pretend it was a negro? Of course, no one would want to buy a little white baby.

Now Johnnie was not naturally a bad boy. That is, he meant to do right. But sometimes in the excitement of his play, I fear his ideas of right and wrong became badly twisted, for he did things "just for fun," that at other times he would have thought mean. If he had any misgivings about making a negro of his little brother, he excused them with the thought that he "would wash it all off 'fore mamma came home. Besides, 'twouldn't hurt the baby and 'twould be such jolly fun."

"The baby looked comical when it was blackened, and Johnnie felt quite elated over his success. He climbed on a chair and began to auctioneer.

"Gentle-mens and Ladies," he said, "I has a little orphan nigger to sell. His Massa and Missus is gone and I'se his guardian. I'se going North and can't take him with me. He's as black as—as soot can make him. Black enough for two niggers. Aged one year the day Jimmy Brown and me made that big snow-man; and we had cake with his name on it for dinner—the baby's I mean. He won't run away, gentle-mens 'cause he can't walk yet. He—"

Crash! The hammer slipped from Johnnie's fingers and fell on the tin soldiers. The baby awoke and began to cry. Johnnie tiptoed over and rocked the cradle, but baby was wide awake now. He took it up, and it immediately began to slap his face with its little black hands. Johnnie found, to his sorrow, that it was "black enough for two niggers." Just then the door opened and mamma came in.

Johnnie fervently hoped that she would whip him right then, and not wait to ask questions. But mamma thought different. She heard his explanations while she washed the baby. Then she smiled and said: "Johnnie you look so comical; you may leave the black on your face. Some one might come in, and wouldn't they laugh to see my little negro boy?"

Poor Johnnie! He answered "Yes'm," and meekly walked out of the room. Some way acting a negro had lost its fun. He hurried out to the barn for fear some one might come and see him. He was having a nice time turning somersaults on the straw, when he looked up and saw Jimmy Brown in the door.

"Whoo-ee!" Jimmy exclaimed, with a broad grin. "Turned nigger, ain't you? Say, you're pretty. Oh, watch out, don't get too close to the horses, you might scare them," he said, as Johnnie jumped onto the floor before him.

"Jim Brown, you scat for home an' don't you never come here any more!" Johnnie cried, angrily.

Jimmy "scattered" off a little ways, then turned and called out: "Say, next time you turn nigger don't forget to black your nose. You'd make a first rate picaninny if the white didn't shine through."

Johnnie did not answer him but started toward the house. He met Uncle Fred at the door.

"Hello, Johnnie boy," he called out, and then started back, surprised. "Why, what's the matter with your face? Have you begun to mortify?" he asked, laughing.

"Ye—Yes, sir, I feel mortified," Johnnie stammered, not knowing what else to say, and thinking perhaps Uncle Fred would sympathize with him. But Uncle Fred only laughed the more. That was too much for Johnnie when he expected sympathy. He began to cry.

"Why, Johnnie, I thought it was such fun to play negro," mamma said.

"Well 'tain't," sobbed Johnnie, "an' 'twas mean to take 'vantage of baby that way. 'Tain't fun at all unless you can laugh with the other fellows."

"That's right, my boy," mamma said, "and I suspect it is not really fun for the 'other fellows.' I think it is just selfish amusement."

Burly Party—Are you aware, sir, that you deliberately placed your umbrella in my ear last evening?

Little Bifferton—Very careless of me, I'm sure. I wondered what became of it; and would it be too much trouble to ask you to return it?—Exchange.

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Club Department

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 Rec. Secretary.....Mrs. W. D. Atkinson, Parsons
 Treasurer.....Mrs. H. B. Asher, Lawrence
 Auditor.....Mrs. Grace L. Snyder, Cawker City

Our Club Roll.

Mutual Improvement Club, Carbondale, Osage County (1895).
 Give and Get Good Club, Berryton, Shawnee County (1902).
 Women's Literary Club, Osborne, Osborne County (1902).
 Women's Club, Logan, Phillips County (1902).
 Domestic Science Club, Osage, Osage County (1888).
 Ladies' Crescent Club, Tully, Rawlins County, (1902).
 Ladies' Social Society No. 1, Minneapolis, Ottawa County (1888).
 Chautauco Club, Highland Park, Shawnee County (1902).
 Cultus Club, Phillipsburg, Phillips County (1902).
 Literateur Club, Ford, Ford County (1903).
 Sabeau Club, Mission Center, Shawnee County Route 2 (1899).
 Star Valley Women's Club, Iola, Allen County (1902).
 West Side Forestry Club, Topeka, Shawnee County, Route 8 (1903).
 Fortnight Club, Grant Township, Reno County, (1903).
 Progressive Society, Rosalia, Butler County (1903).
 Pleasant Hour Club, Wakarusa Township, Douglas County (1899).
 The Lady Farmer's Institute, Marysville, Marshall County (1902).
 Women's Country Club, Anthony, Harper County.
 Taka Embroidery Club, Madison, Greenwood County (1902).
 Mutual Improvement Club, Vermillion, Marshall County (1902).
 Friends Reading Club, Cawker City, Mitchell County (1903).
 Cosmos Club, Russel, Kans.
 The Sunflower Club, Perry, Jefferson County (1905).
 Chaldean Club, Sterling, Rice County (1904).
 (All communications for the Club Department should be directed to Miss Ruth Cowgill, Editor Club Department.)

A WOMAN'S CLUB.

What is a woman's club? A meeting ground
 For those of purpose great and broad
 Whose aim is toward the stars; who
 ever long
 To make the patient, listening world
 resound
 With sweeter music, purer, nobler
 tones.
 A place where kindly, helpful words are
 said
 And kindlier deeds are done; where
 hearts are fed;
 Where wealth of brain for poverty
 atones,
 And hand grasps hand, and soul finds
 touch with soul.
 Where victors in the race for fame and
 power
 Look backward even in their triumph
 hour
 To beckon others toward the shining
 goal.

What is women's club? The fabric of
 a dream
 Touched with an altar coal and made
 alive,
 Instinct with hope for those who toil
 and strive
 And wait to catch that joyous day's
 first gleam
 That ushers in a better, freer age.
 When right for one shall be for all the
 right;
 When all who meet in life's recoil and
 fight
 The war for right and truth shall
 bravely wage.

—HELEN M. WINSLOW, in Club Member.

ART PROGRAM.

Jules Breton.

Roll call—Pictures.
 I. Childhood of Jules Breton.
 II. Years of preparation.
 III. "Gleaners."
 I. A paper telling of the childhood of Jules Breton (pronounced Bre-tong with accent on the last syllable) may be made picturesque and entertaining. It may be written so as to portray the customs and manners of the French people at that time, perhaps bringing in a little of their history.
 II. This subject may cover the years beginning with his life at the seminary, and embrace the few years he spent in college, the longer and more congenial period at the Royal Academy at Ghent, and his travels, carrying it to the death of his father and the Revolution of 1848.
 III. The "Gleaners" is one of his best paintings. It will be interesting to compare it with Millet's (Me-ya with accent of last syllable) "The Gleaners" and note the difference. They are both pictures of peasant life and represent work, but the point of view of the two artists is so different. Breton's is bright and happy, portraying work as joyous. Millet's is sad and cheerless. Millet spent his life in dull, cheerless rooms while Breton's life was one of joy in a happy home.

Sabeau Club.

The Sabeau Club has lost a number of its active members by removal, yet those remaining seem no whit discouraged.
 We have finished the course taken up last year, the Bay View course, through the history of Russia and Japan, deciding for the short time re-

maining for work, to adopt a miscellaneous program, leaving it in the hands of the president to formulate from suggestions by the members. A desire for a more comprehensive knowledge of politics was expressed, and that illusive and delusive subject was made the program for a particular meeting. Though nearly every shade of political creeds has its representatives in the club, it did not prove to be a remarkably warm number after all. The subject was fairly discussed. One thing upon which the club was unanimously agreed was that given the ballot, the women of Kansas are quite ready to prove that the purification of politics is not an iridescent dream. This does not refer to the municipal ballot.

The program for February 27, is quite varied and yet has a similar trend:

I. The situation in Parliament (British).—Mrs. John Clarke.

II. The separation of Sweden and Norway.—Miss Bertha Moore.

III. Affairs at Washington. (Not the Affair.)—Mrs. Alice Walton.

IV. Should women study the laws of Kansas?—Miss Netta Bliss.

V. The influence of woman in municipal affairs.—Mrs. Harding Buckman.

The club meets on alternate Tuesdays. At the beginning of the year it was decided to take up some charitable work in addition to the literary program. In this we have not been very successful. Living so far apart it is difficult to work unitedly, though each has accomplished something individually. I question if we might not accomplish better results by federating with the city clubs, and this idea has been made prominent by the president. However, at the annual business meeting it was decided in the negative.

The officers for 1905-1906 are: Mrs. McCracken, president, Mrs. J. D. Corbet, vice president, Miss Bertha Moore, secretary. The club colors are royal purple and gold.

That this club has maintained its organization for a period of six or seven years is proof positive of the progressive spirit of its members.

KITTIE J. MCCRACKEN.

The Club department is delighted to welcome another club to its roll. The Chaldean Club is a rural club near Sterling and was organized nearly two years ago by four ladies from the Sorosis Club, Sterling. The membership numbers fifteen and they meet every two weeks. The club flower is the sunflower, and the club colors are yellow and brown. They also have a club chorus which is as follows:

"Oh, the farmers' wives are extra superfluous,
 In the fashions they are strictly up to time;
 They have beauty, brains and worth,
 They are the dearest wives on earth,
 Hurrah, for the Chaldean Club."

Mrs. Zeno Dymond, the secretary, says, "Our programs are miscellaneous, but so far we have never had any but literary programs. We meet every two weeks when we lay aside our household duties and enjoy the afternoon, and rest from our work, a recreation we farmers' wives so much need." Here is a program of one of the meetings:

Roll Call.....Current Events
 The True Queen of the Home.....
Mrs. Peters.
 The New Cook.....Mrs. Feighner
 Reading, "When Company Comes."
Mrs. Hutchens.

Improved machinery which combines the performance of several operations, facilitates cultivation and lessens farm labor is something no agriculturist can afford to be without. In these days of large crops and small profits the great question with the market gardener should be the least expensive means he can employ for preparing the ground for planting his crop and cultivating it. Proper planting is a very essential object in saving labor in after cultivation.

The seed drill that has the reputation of many seasons' use, one that in operation opens the furrow, drops the seed accurately at the desired depth, covers it and lightly rolls the earth down over it and marks the next row with such precision as to admit of cultivation with implements that are furnished as attachments is a safe article for the farmer to invest in.

Such an implement is made by the Ames Plow Company of Boston and New York. They also offer the seed drill and Wheel Hoes as separate implements. The Mathews principle which is embodied in the construction of these implements has been copied by nearly all makers of seed drills. This in itself is the strongest kind of a recommendation for the genuine goods. As offered by the Ames people this year they have all the up-to-date improvements. You should send to these manufacturers for further particulars. The Ames Plow Company have probably had more experience in the manufacture of hand seeders and cultivators than any other concern in this country. They first illustrated them in a catalogue published as early as 1847. It is indeed remarkable that one concern should be able to keep at the head of the market for so many years, but the name, Ames Plow Company, and the sterling worth of their goods, are known throughout the world.



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OUR OFFER We will give \$5.00 to the person who arranges these letters into the fewest English words. \$25.00 cash to the next nearest. \$10.00 cash to the next, \$5.00 to the next, and \$1.00 to each of the next five. Send in your lists. There are no conditions in the contest for these prizes. Send in your lists at once. Just as soon as it is received we will send you our complete offer.

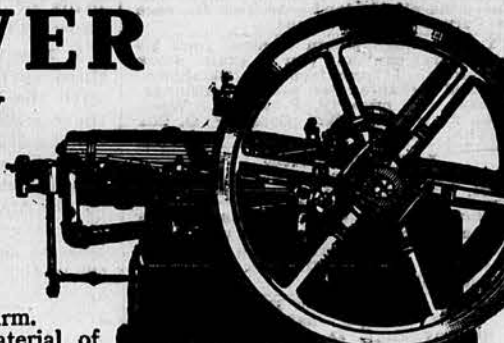
Here are the letters! **Q-A-E-M-C-I-N-T-A-S-A-N-C-D-I-U-E-R-T-S-N-E-E-N-T-C-N-T-S-T-U-T-O-I-N-L-A-U-O-A-I-V**

Use only the letters above and only as many times as they appear above.

An example! For instance the following words can be made: Us-an-sun-to-in-at-it-no-neat-vat-quit-me-scene-lald and three letters, c, r and c, left, counting same as 17 words. Now take the C left over and put it with "an" and you have "Can" and thereby reduce your words to 16. Another C added to "at" makes "Cat" and reduces your number to 15. See how few you can get. The words we have given are just a suggestion. Just to explain the idea. Of course the idea is to use as long words as possible so as to use up your letters. The word "consider," for instance, uses up eight letters. Go to work at once. We have given you a big jumble of letters. Don't expect to get them in too few words. The person winning first is likely to have over a dozen words in the list. If you can get that few, send in your list sure.

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REAL ESTATE

TO TRADE for stock, good 160-acre farm in Cherokee County. H. H. High, Faulkner, Kans.

READ, CONSIDER, COME, OR WRITE—80 acres of good land, with nice, comfortable buildings, \$2,500. 180 acres, 120 cultivated, good land for corn, wheat, and alfalfa, new 4000 barn, good five room house, close to school and town, \$4,200. 240 acres, well improved, all good land, \$8,000. Small payment down, balance to suit. 220 acres, improved, one-half bottom, will grow any farm crop, \$6,000. 480 acres, 15 acres tame grass, fine improvements, \$10,000. 633 acres, bottom and second bottom, fine improvements, one mile from town, timber, alfalfa, orchard, water, hog fence, easy terms, \$25,000. We have a large list of all sizes and kinds. Write for list, at once. Minneapolis, Florence, or Salina, Kans. Garrison & Studebaker.

FOR SALE—Improved farms, at prices from \$24 to \$50 per acre. Write, stating exactly what you want, and we will send description. The Nordstrom-Heusted Realty Co., Clay Center, Kans.

A BARGAIN—160 acre farm, 80 in cultivation, balance pasture; 5 room house with cellar, new barn, 60x50. Also cattle-shed, corn-crib, granary, hen house, and implement-shed, well, windmill, orchard; 1 1/2 miles to school 3/4 miles to Alta Vista in Wabaunsee County. Price \$5,000. A. H. Mesek, Alta Vista, Kans.

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KANSAS LANDS—I have a choice lot of well-improved farms in Marion County, varying from \$20 to \$50 per acre. Also large lists of Western Kansas lands. For full particulars, address A. S. Quisenberry, Marion, Kans.

FOR SALE—320 acre well improved farm, 5 miles from Emporia. Price, \$25 per acre. Write Hurley & Jennings, Emporia, Kans.

A 320-ACRE FARM within two miles of good town. Good new house, barn and stables, all bottom land, the best of alfalfa land, two artesian wells, one at house and one at barn; good orchard, good for any kind of crop; a good fish pond near the house with plenty of fish. J. Bainum, Arlington, Kans.

BUY FROM OWNER—This fine alfalfa and sugar-beet farm, near school and town, only 6 to 12 feet to inexhaustible supply of sheet water; a bargain for quick sale. James A. Jackson, Syracuse, Kans.

440-ACRE FARM—Close to good town, very good buildings, with growing crops, at \$17 per acre. Other bargains in improved farms with crops. Missouri farms for sale, California land for sale. Western Kansas land at \$2.50 to \$30 per acre. Write or come and see what I have in the way of bargains in city property. J. Bainum, Arlington, Kans.

FOR SALE—The Dean Bartlett ranch, consisting of 3,200 acres on the New Topeka and Northwestern railway. Near the town of Emmet, Pottawatomie County. Will sell all or a part. Address Dean Bartlett, St. Marys, Kans.

FOR SALE—80 acres Arkansas second bottom, 4 miles east of Great Bend. All in cultivation. Fine alfalfa land. Address R., care Kansas Farmer, Topeka, Kans.

FIFTY farms in Southern Kansas, from \$15 to \$70 per acre; can suit you in grain, stock or fruit farms. I have farms in Oklahoma, Missouri and Arkansas for sale or exchange. If you want city property, I have it. Write me, I can fix you out. Wm. Green, P. O. Box 966, Wichita, Kans.

LAND FOR SALE in western part of the great wheat State. H. V. Gilbert, Wallace, Kans.

CASE for your real estate or business, no matter where located. If you want your property sold quickly send us description and price. N. B. Johnson & Co., 547 Bank Commerce Bldg., Kansas City, Mo.

FOR SALE—A good farm of 220 acres in Anderson County, Kansas, main line Missouri Pacific Railway, R. F. D., near to school and church. American community, good improvements; \$22 per acre. A bargain. Address O. J. Prentice, 156 Wabash Avenue, Chicago.

FINE STOCK FARM FOR SALE—640 acres, one-half in cultivation, balance in pasture, mostly seeded to Kentucky blue-grass, well watered, about 40 acres in alfalfa, all fenced and cross fenced, beautiful lawn with shade, large eight-room house, commodious barns for stock and hay, fuel, poultry, and ice houses and other outbuildings, feed yards, corrals, stock sheds, one tenant house; convenient to church and school, on Rural route; 1 1/2 miles from station on double track railway, 12 miles east of Topeka, the State capital, 54 miles west of Kansas City, in the midst of a splendid farming country. It is now occupied by the owner, who has lived there for more than thirty years. Price, \$37.50 per acre. Easy terms. Address WILSON & NEISWANGER, 114 W 6th St. Topeka, Kans.

FOR SALE—160 acre tract 6 miles N. E. of Council Grove, Morris County, 100 under cultivation, balance mow land, \$3,500. Easy terms. Eastman & Lakin, 115 West 6th Ave., Topeka.

FOR SALE—80 acre improved farm 3 1/2 miles N. E. of Harveyville, Wabaunsee Co., 45 in cultivation, balance pasture; 7 room house, barn, crib and out-buildings; \$2,500. Cash \$800. Eastman & Lakin, 115 West 6th Ave., Topeka.

FOR SALE. 640-acre ranch, 4 miles from Stockton, Kans.; big bargain of 320 acres at \$8 per acre. Write STEVENS & RUBY, Stockton, Kans. Mention Kansas Farmer.

FOR SALE—Dairy Farm in Loudoun County, Virginia. Between three and four hundred acres. Less than one and one-half hours' ride from Washington. Good railroad facilities. Outbuildings complete in every respect and in first-class condition. Good fencing. Large silo, filled for winter. Two dwellings on place for manager, etc. Good watering facilities with large storage tank. Excellent herd of cattle and well-equipped dairy. Good land and whole farm can be cultivated. Excellent opportunity to purchase first-class, well-equipped dairy farm. M. V. RICHARDS, Land & Industrial Agent, Washington, D. C.

Miscellany

Seven Principles in Making and Maintaining Earth Roads.

E. C. COWLES, BEFORE THE TRI-COUNTY FARMERS' INSTITUTE, WELLSVILLE, KANSAS.

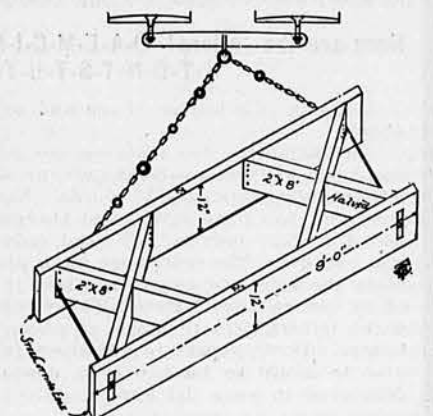
It is a general complaint that our roads are not made much better from year to year under our present system of working them.

It seems to me that there are no general principles applied in the working of the roads. There are at least seven principles which can and ought to be applied in road construction.

(1) Economy; (2) width; (3) completeness; (4) yearly care; (5) convexity; (6) hardness; (7) smoothness. Now while the sixth and seventh are by far the most important, they all center in the first.

1. Anything that touches our pockets we are apt to consider of the first importance. There is a true and there is a false economy in working the roads. The false is to work for present results without much regard for the future; the true is for future good.

2. The second principle is width. If we call the working and care of a 20-foot road with 10-inch rise one, the work and care of a 25-foot road with 12-inch rise will be one and eight-tenths; and a 30-foot road with 15-inch



rise will be three and three-tenths. Do we need the wide road? More than nine-tenths of the travel is on less than 8 feet of a good road. Twenty feet wide with 10-inch rise is sufficient for two loads of hay to drive abreast. What more width do we need?

3. Now for the application of the third principle, completeness. Even with the best use of the large grades, there will be some uneven places which eventually will become mud-holes without some extra work, and especially will it be the case with both sides of culverts, as the grader must be raised to pass the culvert. Also the ditch will not be open to let the ditch water away from the road. Under this head is a need of an extra man and team along with the grader to smooth the dirt the grader has thrown up, also with harrow and roller and slip scraper to complete the work.

4. The yearly care is quite as important as either of the others. How often we see the commencement of a mud-hole which could be stopped with two or three scrapers full of dirt, or the ditch-water starting to wear into the side of road. A few minutes' work would save the road, which work, if done in time, will save one-half of the work expended at that place. These little things, if not seen to and fixed in time, are the cause of the lack of improvement of our roads from year to year. When should this care be given? When the smoother is being used from time to time.

5. Convexity should be one-half inch to each foot of width of road worked, that water may leave the road-bed and not soak in.

6. Hardness will be accomplished by the use of a three-ton roller, puddling of road by travel and the use of some kind of a smoother.

7. The principle of smoothness, while not as costly as grading, should be the most frequently applied and is really of more consequence than grading or any other operation, for the purpose of keeping a good road. How frequent, depends upon the amount of travel and kind of soil; near town twenty to twenty-five times in the year or as often as the road becomes a little rough; farther in the country eight to twenty times, or at all times after a rain if there is any show of ruts or roughness.

Now for the cost for 1906. I will suppose that we have an eastern average township of 140 miles of road. As our roads are tolerably well graded, we will

REAL ESTATE

FOR SALE.—320 acres in Kiowa Co., 80 in wheat, which goes with the place. Six miles from county seat. Price, \$3,100. C. W. Phillips, Greensburg, K.

WANT WESTERN LAND or cash in exchange for the Best Welding Compound on the market. Something every blacksmith in the United States uses. One hundred pounds free goes with the formula for making the compound. Just the thing for the man who wants to retire from the farm. Address box 27, Waurika, Oklahoma.

FOR SALE.—If you are looking for a farm at a bargain, I have got it. Eastern owner wired me to sell. 160 acre improved farm in Woodson county, Kansas, south of Toronto. 100 acres in cultivation, all fenced with hedge and wire. If sold by the 15th of March \$11.00 per acre. W. W. Manspeaker, No. 818 Kansas Avenue, Topeka, Kansas.

FOR SALE.—Forty-two acres of land adjoining the city of Erie, Kansas, county seat of Neosho. This land was formerly the old fair grounds, and has about \$3,500 worth of buildings on it; some timber, good soil, and plenty of water. Will make the finest place in Kansas for a hog farm. Will sell or rent or go in partnership with a good man with some money who understands raising pure-bred hogs. C. E. Shaffer, care of Kansas Farmer.

FOR SALE

Farm 2,100 acres, 570 acres in wheat, 1,500 can be farmed. I also have 150 steers, horses and outfit. Will sell at a bargain. C. W. Phillips, Greensburg, K.

A CORN AND ALFALFA FARM.

FOR SALE—One of the richest improved farms on Prairie Dog Creek. Soil is black loam that yields big crops every year. This year an average of 80 bushels of corn, about thirty acres in pasture and timber, 15 acres in alfalfa, balance corn land. Good house and barn and other farm buildings. On account of change of business the owner desires to sell soon. Address

M. E. Beall, Woodruff, Kans.

If you have farms, ranches, or city properties for sale or trade anywhere in the State, we would like to have you list the same with us by sending a thorough description together with lowest prices and best terms. We have a fine list of city properties in Topeka and farms around the city, some for trade.

MOON, CHARLES & MOON, REAL ESTATE AGENTS.

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FOR YOUR FARM, HOME, BUSINESS OR OTHER PROPERTY. We can sell it for you, no matter where it is or what it is worth. If you desire a quick sale send us description and price. If you want to buy any kind of property anywhere send for our monthly. It is free and contains a large list of desirable properties in all parts of the country. CHARLES A. WILSON, REAL ESTATE DEALER, 415 Kansas Avenue, Topeka, Kans.

Rooks County Land

Where Wheat, Corn and Alfalfa grow to perfection. 37,500 acres fine farm land for sale. For list and county maps, address C. H. DEWEY, Stockton, Kans. (R. R. fare refunded if you buy of me.) Mention Kansas Farmer.

8,000 ACRES

Wheat and Alfalfa Land in Logan and Wallace.

These lands are prime No. 1 land, selected, smooth, well grassed and well watered. Price \$4 to \$6 per acre; part cash, and long time for balance.

Chas. A. Wilbur, 111 W. 6th St., Topeka, Kans

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For Sale—40 acres improved orchard, 4-room house and stable, 3 miles from College of Emporia, for \$1,200, on terms if sold at once.

HURLEY & JENNINGS, Emporia, Kansas.

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640 acres of fine wheat land, price \$10 per acre, \$1,800 cash, balance in small yearly payments, 6 per cent interest. Niquette Bros., Salina, Kansas.

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Some Special Farm and City Bargains.

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SHAWNEE COUNTY FARMS. TOPEKA RESIDENCE AND MERCANTILE PROPERTY. VACANT LOTS. TEXAS RANCH LANDS.

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Chamber of Commerce, Everett, Wash.

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on the American Continent, now being constructed by the

CANADIAN PACIFIC RY.

IN Southern Alberta, Canada

The land that's famous for its tremendous crops of Hard Winter Wheat, Alfalfa and Sugar Beets.

100,000 Acres ARE READY TO SELL

A million and a half acres will eventually come "under ditch".

Price \$18 to \$25 an Acre

On Exceptionally Easy Terms

This land is located just north of the main line of the

Canadian Pacific Ry.,

in the heart of the so called Gleichen tract, where 45 bushels of wheat and 80 to 100 bushels of oats have been raised to the acre without irrigation. What will the land do with irrigation? There is some attached areas of non-irrigable land which are perfect for grazing lands. This makes an ideal combination of irrigated and non-irrigated land. There are but few of these

Combination Farms

It will be wise for you to select at once.

For further particulars and certificate of low railroad rates, write

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REAL ESTATE.

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Wheat Farms on Easy Terms

We offer to BONA-FIDE SETTLERS their choice of one-hundred 160 acre farms in

Sherman County, Kansas

At from \$5 to \$15 per acre. ONE TENTH CASH, the balance payable in nine equal annual payments. One crop will pay for the farm. Healthful climate, splendid schools, railways close at hand, good neighbors. Soil is black loam, good depth, no sand, very productive. 1905 Wheat crop averaged 25 bushels to the acre. Write me at once, as these farms will not last long at the present prices.

Albert E. King, - - - McPherson, Kansas

need to grade only 70 miles, but care for and smooth 140 miles.

Grading for 70 miles at \$12 per mile, \$840; yearly care of 140 miles at \$1 per mile, \$140; smoothing, 140 miles at \$3 per mile, \$420; finishing 70 miles after grading, at \$3, \$210; total cost for year 1906, \$1,610; cost per mile per year \$11.50.

Cost for 1907, by need of less grading, need not cost over \$8 per mile. How shall this work be done? By contract per mile. Why? Because the average roadmaster will get only about two-thirds as much work done by the day at the same cost as will be done by contract per mile.

Why not smooth by voluntary work? Because after a little time the smoothing will not be done on time. Also, because only a few will volunteer to do the work, and therefore there will be no equality in the work of those who use the roads.

While we have much law concerning our roads, I think of only two changes needed. First, compel the town board to let all work by contract. Second, reduce allowance for poll tax to \$2 per day and make voting conditional upon payment of this tax.

Prizes for Good Roads.

The members of the Commercial Club of Manhattan, Kans., are very desirous of creating a deeper interest in good roads and various schemes have been proposed. At the regular meeting held Tuesday evening the matter was thoroughly discussed and it was voted that the Commercial Club of Manhattan offer the following prizes:

1. Fifty dollars (\$50) in gold for the best mile of road made with a "King road drag" within seven miles of Manhattan.
2. Twenty-five dollars (\$25) in gold for the second best mile of road made with a "King road drag" within seven miles of Manhattan.
3. Ten dollars (\$10) in gold for the best one-half mile of road made with a "King road drag" on each rural route leading from Manhattan.
4. Five dollars (\$5) in gold for the second best one-half mile of road made with a "King road drag" on each rural mall route leading from Manhattan.
5. No piece of road to take more than one prize.
6. No prize-taking piece of road to be eligible for the same or a lower prize the second year.
7. Competitors to furnish their own drags.
8. The Commercial Club to select the judges of the contest: said judges to be three absolutely disinterested parties.
9. The judging of the roads to be done at some time between April 15 and May 15, 1907.

Peculiar Well Water.

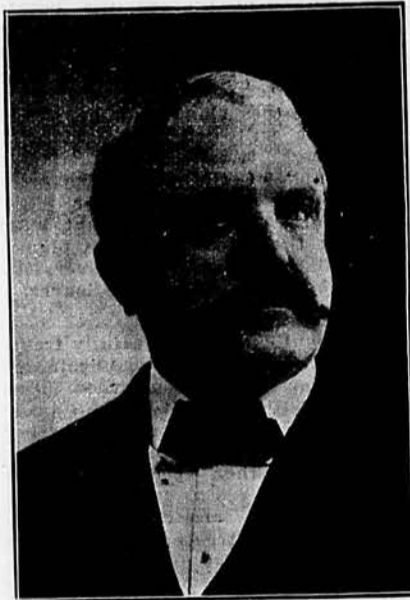
Replying to Frank Wishall, Liberty, Kans., Prof. J. T. Willard, Director of the Kansas Experiment Station, says: "I can not tell from your description what the substance is in your well-water that causes it to turn white when allowed to stand. You do not mention any odor so I suppose it is not what is called a 'sulfur water.' If you will procure a clean, half-gallon, glass-stoppered bottle, such as druggists get ammonia water or acids in, wash it per-

fectly clean, fill it full, lacking about as much as a tablespoonful, then tie the stopper in by means of a cloth put over the top, pack it carefully and ship it to me by express prepaid, I will make sufficient examination of the water to ascertain what it contains. To wash the bottle clean as specified above, there must, of course, be nothing visible sticking to it inside; then you should fill it entirely full of the water, pour this out completely, then rinse the bottle five or six times more with the water from the well before putting in the water to send to me.

"As to the effect upon you when you went down into the well, it is possible that the well contains carbonic acid gas or, as it is sometimes called, 'choke-damp.' You might test it by lowering a lighted candle into the well, which will be extinguished if a dangerous amount of the gas is present."

Stands Up for Osborne County.

A. L. Brown, of Osborne, Kans., is one of the real estate agents of Kansas who makes a business of selling his home land exclusively. He deals in nothing but Osborne County farms,



and by square business methods has built up one of the best real estate businesses in Kansas. He believes in a great future for Osborne and Osborne County which lies in the great Solomon Valley where alfalfa, corn, wheat, oats and grasses grow in abundance. If you are looking for land write Mr. Brown and mention the KANSAS FARMER. He will furnish you full information.

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Room 3, Central National Bank Bldg.,
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Stand Up for Osborne County

In the great Solomon River Valley, the richest section of the Northwest. The best all-purpose county in the State. The home of Alfalfa, the king of all grasses, where land values are always increasing, where prices now are very low. The most productive soil the sun ever shown upon, ideal climate, abundance of pure water and timber. Prices \$10, \$15, \$20, \$25 and \$35 per acre. These prices will double inside of two years. Write me for full particulars and list of farms.

A. L. BROWN, (the man who sells Osborne County lands),
Osborne, Kans.

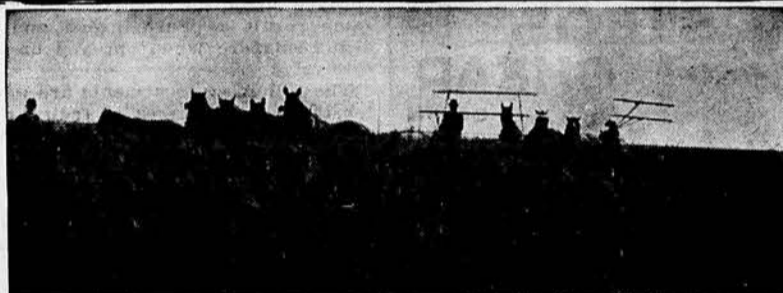
We do not deal in extreme Western lands, hot air, hot winds, sand, sage brush and blue sky, but handle Osborne County lands, exclusively. That's what makes our business grow.

Mention Kansas Farmer when you write.

Western Kansas Wheat Farms

Deal with the owner direct. Save commissions. Know you are getting your land at the right figure. We own and control 60,000 acres of the finest wheat and corn lands in central and western Kansas. We have one price for everybody. You can buy a farm on ten years' time with interest at 6 per cent, or you can pay cash and get 5 per cent discount. Our farms are bargains, every one of them, and are in the best counties of Northwestern Kansas; close to schools, railroads, towns and churches, in well settled localities. If you have \$300, you can own a farm and home of your own. No poor land.

The Grain Belt Realty Company, Concordia, Kansas



Wheat field on farm of Samuel Cox, Radison, Sask.

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TREES THAT CHEAP In price and of the best quality, free from disease and true to name. Com- plete assortment. Don't bill good for size and 100 Grafted Apple Trees \$1.00 ease and true to name, Com- 100 Budded Peach Trees \$1.00 plete assortment. Don't bill good for size and 100 Concord Grape Vines \$1.00 catalogue free. Freight paid on \$10.00 orders. FAIRBURY NURSERIES, Box L, Fairbury, Neb.

FRUITFUL TREES MILLIONS OF FRUIT AND FOREST TREES Small Fruits and Evergreens. Russian Mulberry and Black Locust, \$1.00 per 1000. Carefully dug and packed. Freight prepaid on \$10.00 orders. Catalogue free. Fine trees guaranteed. Gage County Nurseries, Box 609, Beatrice, Neb.

SEED CORN Boone County White, Farmers' Interest, Reid's Yellow Dent, Improved Leaming and Riley's Favorite, best pedigreed and tested seed, grown on my own farms, \$1.50 per bu. Sacks free. Delivered on car for any station in the United States.

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Trees, Plants & Seeds THAT GROW BEST QUALITY. Good bear- ers. Low prices. Apple 4c; Plum and Cherry 12c; Peach 4c; all budded; Con- cord Grapes 2c; Forest Tree Seed. Write for catalogue. GERMANY NURSERIES, Carl Sonderberger, Prop., Box 9, Beatrice, Neb.

HARDY EVERGREENS 12 FREE million. To grow them by the healthy and vigorous we offer 12 Spruce and Pine 2 years old FREE to property owners. Mailing expense 5c, which we will bill you. Catalogue with 48 colored plates of Hardy Plants etc. Write today. The Gardner Nursery Company, Box 740, Osaage, Ia.

Iowa Produces the Best SEED CORN and Southwestern Iowa produces the best seed corn in the State. Every grain from which our seed is grown is carefully selected by us, and the cultivation of the crop is carried on by a member of our firm. We raise every grain of seed corn we sell, and we make it as perfect as it can be made. Write us for prices. W. W. VANSANT & SONS, Box 54, Farragut, Iowa

GINSENG is a money-making crop. Room in your garden to grow hundreds of dollars worth annually. Thrives throughout the United States and Canada. We sell roots and seed during spring and fall planting seasons and buy the dried product. You can get started in this profitable business for a small outlay. Send 2c stamp to-day for illustrated literature telling all about it. THE ST. LOUIS GINSENG CO. St. Louis, Mo.

GOOD SEEDS CHEAP BEST EVER GROWN A wonderful big catalog Full of engravings of every variety, with prices lower than other dealers. The book is worth a dollar to any one who plants seeds. Big Lot of Extra Packages Free to Every Customer. Send yours and neighbors address. R. H. Shumway, Rockford, Illinois.

Proposal To give advice if needed. Lay out your plans and start your team, and if anywhere along the route, between planning and cropping, you need help, just draw on our accumulated capital of 50 years' experience. At the start off you will need good seed. Catalogue free. J. J. H. GREGORY & SON, Marblehead, Mass.

TENERIFFE Canary Grass A wonderfully productive grass from the Canary Islands. Succeeds in all parts of America from Florida to Manitoba, even in sections where Millet fails. Produces an immense crop of hay as well as a large and very profitable seed crop which can be sold at a high price there being practically no limit to the demand. Is used for feeding birds and poultry and also makes a fine grade of flour. Our seed is especially desirable for sowing here. Special introductory price per large pkt. 10c, lb. 35c, 3 lbs. 90c, postpaid, with full directions for growing. Free to Farmers. We want every- one to try it and if you will mention this paper in writing we will send a sample of the seed free together with a copy of our large illustrated catalog of Farm and Garden Seeds. IOWA SEED CO., DES MOINES, IOWA.

Horticulture

Spray For Profit. PRESS BULLETIN NO. 129, OKLAHOMA AGRICULTURAL EXPERIMENT STATION.

The following information, regarding spraying, is intended for the grower, that he may see at a glance what to apply and when to make the application. Only the more serious pests are named, but other pests are kept in control by the spraying advised. The greatest success will come by preventing rather than by attempting to cure. Sometimes, spraying does not seem to be necessary, but the time has come when the man who does spray, regardless of appearances, will not suffer the losses of his less careful neighbor. Plant injuries are rarely cured. The fruit-grower should prevent them. He should know the cause, know the remedy, and know when to apply the latter so as to prevent losses. Spraying is as necessary a practice as cultivation and pruning. Get the spraying apparatus in shape before spring farm work begins. If necessary to purchase, send for circulars to those companies advertised in your farm papers. There is no best pump or nozzle. Some devices are better for particular kinds of work. Know what you want the machine for, and buy with that in view. The kind of machine will depend upon the kind of plants to be sprayed and the kind of spray to be used. It does not pay to get other than a good pump, one that works easily and has power enough to throw the spray in a fine mist, at the same time, keeping the solution thoroughly agitated in the barrel or tank.

Be ready to spray this year. It is good insurance and will pay good returns on short time.

Begin to spray the orchard and vineyard before the buds swell in the spring and repeat the operation every two weeks for at least four times, and the result will be a saving of from 85 to 95 per cent of the crop.

If spraying solutions are correctly made and applied, there need never be any danger of poisoning the fruit for food. Fruit to be placed upon the market should be sprayed the last time with a solution that will not discolor it. Bordeaux mixture will destroy fungus diseases and Paris green will kill insects. These two sprays may be easily combined, making a solution called Paris green Bordeaux, which when sprayed upon the trees will have the same result as Paris green and Bordeaux mixture when sprayed on separately.

The following treatments are general for the named classes of fruits, but if carried out each year by the orchardists and agriculturists in the same way that they would carry out cultivation, rotation or fertilization, it will mean the saving of thousands of dollars to their income each year, in Oklahoma alone. The diseases and insects, although they have not been here long, have come to stay, and will be even more troublesome from year to year.

Look over the following groups of plants to see what to do and when to do it for that particular group.

APPLE ORCHARD.

- 1. Spray with copper sulfate just before buds start in the spring, for bitter-rot, black-rot and scab.
2. Spray unfolding leaves with Paris green Bordeaux for bud-moth and apple-scab.
3. Spray as soon as the blossoms fall with Paris green Bordeaux for codling moth, curculio, canker-worm, caterpillars, scab and sooty blotch.
4. Keep the foliage well covered with Paris green Bordeaux until fruit is nearly grown, for succeeding broods of insects and further fungus troubles.

When the fruits are nearly matured, a spraying with ammoniacal solution of copper carbonate will have nearly the same effect as Paris green Bordeaux, and will not discolor the fruit.

Do not put copper sulfate on the trees after the foliage is out.

Flat-headed and round-headed borers burrow in the base of the trunk. Watch trees and cut out borers whenever castings appear.

Keep all windfalls picked up and destroyed or feed out.

CHERRY, PLUM, PEAR, APRICOT AND PEACH.

- 1. Spray with Bordeaux mixture before the leaves unfold.
2. Spray with dilute Bordeaux mixture just after the blossoms fall.
3. Spray with dilute Bordeaux mixture two weeks after the second spraying.

Dilute Bordeaux mixture is used for the second and third sprayings because of the tender foliage of this group of

trees. Pears may be, however, sprayed each time with the Bordeaux mixture.

These sprayings will be effectual for leaf-spot, mildews, leaf-curl, scab, brown-rot and plum pockets.

In case of pear blight, winter-prune all diseased branches, cutting off several inches below the diseased area. Several weeks after blossoming, remove all young dead twigs in the same way. Use a knife that is sterilized from time to time by wiping it with a cloth saturated with carbolic acid. The disease occurs also on apple and quince. Use the same treatment.

BLACKBERRIES, RASPBERRIES, DEWBERRIES.

1. In fall or winter remove all canes infested with cane-borers, orange rust, and crown-gall, and burn.

2. In spring, before the buds swell, cut off and burn all canes badly spotted with disease and spray the rest with Bordeaux mixture, repeating the spraying when the young shoots are about six inches high, and again in ten to fourteen days. Aim to cover the young shoots with spray. This treatment is for anthracnose, cane-blight, and leaf-spot diseases.

STRAWBERRIES.

Spray with Bordeaux mixture before blossoming and twice after the fruiting season.

In fall run over badly infested beds, add a little straw and burn.

Frequently renew beds. These treatments will keep the crown-borer and the leaf-spot diseases in check.

GRAPES.

1. Spray before buds break in the spring, with copper sulfate.

2. Spray just before blossoming with aris green Bordeaux.

3. Spray after fruit has set, with Paris green Bordeaux.

4. Continue spraying every ten days up to July 1, with Bordeaux mixture.

5. Spray three times from the first of July to the middle of August with ammoniacal solution of copper carbonate. This last solution will not discolor the fruit for market.

These sprays, if carried out, will be sufficient to hold in check the flea-beetles, leaf-rollers, caterpillars, birds-eye rot, black-rot, downy mildew, powdery mildew, and ripe-rot.

GARDEN VEGETABLES.

Spray with the following Paris green, when the insects appear:

Cabbage for cabbage-worm; cucumbers, squash, pumpkins, and melons, for the striped cucumber-beetle; tomatoes, for the tomato-worm.

Spray potatoes with Paris green Bordeaux for the Colorado beetle and the flea-beetles, when they appear. This spray will also prevent the potato blight.

Potato scab is treated by soaking the seed potatoes in formalin (1 pint in 30 gallons of water,) for about two hours. Treated potatoes should not be placed where they will get reinfected with scab spores.

Spray any of the vegetables with soap or kerosene emulsion for plant lice and any other of the plant bugs that suck the juices from the plants. Care must be taken to reach every insect on the under side of the leaves.

GRAINS.

Oats—Smut can be successfully treated by soaking the seed 8 to 10 minutes in hot water at 132-135 degrees F., or sprinkling with formalin (1 pint in 50 gallons of water) thoroughly stirring during the process, leaving in piles for several hours, then spreading out to dry.

Corn—Smut in corn cannot be prevented by seed treatment. Use varieties of corn most exempt from attack and avoid use of fresh manure on land giving the most trouble.

Corn-worms can be destroyed only by hand-picking.

Wheat—The Hessian fly can be controlled by delaying fall planting until after October 10. Fall grazing of wheat lessens the number of pests.

Burn over all infested land in fall, winter, or spring to kill hibernating chinch-bugs. When chinch-bugs migrate from the wheat to the corn, after the former is harvested, plow a dust furrow between the two fields, and cut a few rows of corn and lay in piles on the edge of the field toward the wheat.

Stored grain—Weevils in stored grain in tight bins, can be destroyed by use of carbon bi-sulfid placed in vessels on top of the grain, the latter not over two feet thick, at the rate of one pound to 100 bushels of grain.

SHADE TREES AND ORNAMENTAL SHRUBS.

All leaf-eating insects can be destroyed by spraying with Paris green the foliage they eat.

Leaf lice and other sucking insects should be sprayed with soap or kerosene emulsion.

Borers in maple and elm can be successfully treated in September, by ia-

SEEDS That will grow PLANTS That will bloom None better, even at the high price. Special bargains SEEDS, 10 pkts. Annual Flowers, 10c 5 pkts. Vegetables, 10c. PLANTS, 6 Boxes, 5c; Geraniums, 25c; 4 Begonias, 25c; 4 Polyanthus, 25c. My catalog prices will surprise you. Catalog and packet Royal Giant Panicle free. A. C. Anderson, Columbus, Nebraska.

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jecting carbon bisulfid into the burrows and stopping them up tight. Make your sprays according to the following formulae.

FUNGICIDES.
These solutions are designed for the destruction of the fungus diseases. They can be effectual only when they reach the fungus itself. They must, therefore, cover all parts of the affected plants. The solution will not penetrate the tissues of the plant and kill the diseases on the interior, but is effectual, more as a preventive against the entrance of the disease fungus into the plant, than a curative when the fungus has established itself in the tissue of the plant.

BORDEAUX MIXTURE.
Four pounds copper sulfate (blue vitriol); 4 pounds quicklime (not air-slacked); 40 gallons water. Dissolve the copper sulfate in hot water, or from a coarse bag suspended in cold water; slack lime separately. Dilute copper sulfate solution to about twenty gallons, into which pour the lime, diluted to about ten gallons, stirring the mixture. Dilute further now, to make 40 or 50 gallons. Stock solutions of the copper sulfate or lime, (rate 1 lb. to 1 gallon of water) can be kept indefinitely, but will not keep when mixed. After spraying, the solution left over should be thrown away.

DILUTE BORDEAUX MIXTURE.
Two lbs. copper sulfate, 2 lbs. quicklime (not air-slacked), 50 gals. of water. This is made as Bordeaux mixture.
AMMONICAL SOLUTION OF COPPER CARBONATE
Five ozs. copper carbonate, 3 pints of ammonia, 50 gallons water. Use just enough ammonia (if strong dilute with several volumes of water) to dissolve the copper carbonate, then dilute to final volume.

COPPER SULFATE.
Three to 4 lbs. copper sulfate, 50 gallons water. This strength can be used only as a winter spray; sometimes a weaker solution, 1 lb. to 250 gallons of water, is used on the foliage.

INSECTICIDES.
These solutions are used to destroy insects and are not effectual for the destruction of fungus diseases. Insects that chew the foliage can be poisoned through the stomach, while those that pierce the stems and leaves of plants must be poisoned from the outside. The arsenic compounds in the form of Paris green are the standard poisons to be used against the leaf-chewers, while soap and kerosene are the standard substances to use against the plant-sucking insects. Hellebore is used in the same way as arsenic compounds and is preferable to them in cases where a less violent poison is needed.

PARIS GREEN.
One pound Paris green, 3 lbs. lime, 100 gallons of water. Hellebore may be dusted on the plants or mixed with water, 1oz. in 2 gallons.

SOAP.
One lb. of soap, 8 gals. water.
KEROSENE EMULSION.
Two gals. kerosene, 1/2 lb. common soap, 1 gal. water. Dissolve the soap in hot water, add the kerosene, and churn all together until a white, creamy mass is formed which thickens on cooling. Dilute nine times before using.

LIME, SULFUR AND SALT WASH.
Thirty lbs. lime, 15 lbs. salt, 20 lbs. sulfur, 60 gals. water. Boil for one hour in an iron kettle, and apply while fresh to dormant trees in fall or spring to kill the San Jose scale-insects.
FUNGICIDE AND INSECTICIDE.
PARIS GREEN BORDEAUX.
Fifty gals. Bordeaux mixture, made as above, 4 ozs. Paris green. Make up when ready to use. It will not keep.

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The Poultry Yard

Poultry Notes.

At the annual meeting of the American Poultry Association held recently at Cincinnati, Ohio, Grant M. Curtis was elected president and T. E. Orr re-elected secretary and treasurer. Several new breeds were admitted to the Standard, viz., Rose Comb Rhode Island Reds, Columbian Wyandottes, Rose Comb White, and Single Comb Black Orpingtons.

Three judges have already been engaged for the next State Poultry Show, January 7 to 12, 1907, viz., Chas. McClave, New London, Ohio; D. T. Helmlich, Jacksonville, Ill.; and A. B. Shaver, Lanark, Ill. These gentlemen have a National reputation as experts in judging poultry. Mr. McClave has been president of the American Poultry Association, the highest honor in poultrydom, and all were judges at the World's Fair. Owing to the favorable outlook for a bigger show than ever, it may be necessary to have another judge. An effort will be made to get the breeders of the leading varieties of fowls to contribute towards a special purse to be offered to their breed. The secretary has already authorized A. H. Miller, of Bern, Kans., to take care of the interests of the Barred P. Rocks and will shortly appoint breeders of other varieties to look after their breeds. By working in unison we can get up a big show.

This is the time of year when sitting hens are in demand, but, as usual at this period, they are a scarce commodity. Their scarcity, however, can be overcome by the purchase of a good incubator, of which there are several on the market.

One good thing about the incubator is that it is always ready to set, no matter how cold or severe the weather, and it would seem to be a matter of economy as well as convenience for every poultry-raiser to purchase one, and allow the hens to lay eggs and thus get rid of the necessity of a sitting hen.

A Farmers' Institute Talk on Commercial Poultry Culture.

The poultry industry is one of great importance, and one at which many fail because they do not count the cost. They start in it in a haphazard sort of way, not knowing the amount of capital necessary to start and maintain a successful plant. The person who is successful is the one who counts the cost beforehand, and who knows just how much he has to invest. Then he makes up his mind as to whether he is adapted to the work, whether he has patience to work and wait for returns, and whether he really loves fowls. For a successful person knows that unless he is suited to his business and loves it well enough to give it undivided attention, it will never be a success.

After studying these questions and conditions, and finding that he has suf-

POULTRY BREEDERS' DIRECTORY

BARRED ROCKS EXCLUSIVELY—Lefel strain. Large, heavy boned, fine, clear; Barry's first-class birds, \$1 to \$5 each. Satisfaction guaranteed. Write for catalog to Lawndale Poultry Yards, John D. Ziller, Hiawatha, Kans.

EGGS—S. C. White Leghorn, exclusively. Blue Ribbons at Great Bend, Emporia, Wichita; 15 for \$2. W. C. Watt, Walton, Kans.

LOOK HERE—TRY me on the big-boned Black Langshans, scoring from 90 to 95%. Charles Leeper, Harper, Kans.

WHITE WYANDOTTE COCKERELS, (Stay White) \$1 to \$5 each. Eggs, \$1.50 per 15. S. W. Artz, Larned, Kans.

MAMMOTH BRONZE TURKEYS, Silver Laced Wyandotte cockerels for sale. Address Francis Long Madison, Kans.

MAMMOTH BRONZE TURKEYS for sale. Inquire of Mrs. T. M. Fleming, Fontana, Kans.

SINGLE COMB WHITE LEGHORN cockerels \$1 each; two or more 80 cents each. Fine white pure, thoroughbred birds. Also a few Barred Plymouth Rocks, barred to the skin, fine, pure and vigorous; hens, cockerels, cocks and pullets, \$1 each; two or more, 80 cents each. All of our customers are very well pleased. We will make reductions on large lots. Meadow Poultry Farm, Coulterville, Ill.

FOR SALE—150 B. P. R. and W. P. R. cockerels and pullets; strong, vigorous, cockerels, \$2 to \$5; pullets, \$1 to \$2.50. Exhibition cockerels matter of correspondence. Mr. and Mrs. Chris Bearman Ottawa, Kans.

BROWN CHINA GEESE, Indian Runner Ducks also Barred Rock Cockerels. Prize winners at State Poultry Show. O. C. Sechrist, Meriden, Kansas.

MAMMOTH BRONZE TURKEYS FOR SALE—Young toms and pullets, healthy and well-bred stock. Inspection and correspondence invited. Address J. E. Miller, Burdette, Kans.

LIGHT BRAHMAS More prizes than any breeder in the state; 10 first this season. Eggs, \$1.50. Cockerels, \$2 to \$4. T. F. Weaver, Blue Mound, Kansas.

High Class Buff Leghorns and Barred Plymouth Rocks

We furnish as good stock as any breeder in the world. Exhibition stock a specialty. Write for prices to S. O. LINEGREN, McPherson, Kans.

Buff Orpingtons S. C. Pure Bred, Cook Strain Eggs for setting, \$2 per 15. Order now. My stock is from Wm. Cook & Sons, originators. F. V. Turner, Sabetha, Kansas.

Barred Plymouth Rocks

Exclusively—"Superior Winter Laying Strain," noted for size and quality. Seventeen years of careful breeding. Eggs, 15 for \$1; 30 for \$1.50. E. J. EVANS, Route 4, Fort Scott, Kans.

R. C. Rhode Island Reds

At the State Poultry Show, Topeka, Kansas, January, 1906, won first and second prizes on cock, cockerel, hens, pen; fourth on hen and pullet. Cockerels all sold. Eggs for hatching, \$1.00 to \$3.00 per 15. Egg circular free. NO STOCK FOR SALE.

A. D. WILLEMS, Iman, Kans.

PRIZE-WINNING S. C. BROWN LEGHORNS

Exclusively. (Short's strain.) Pullets and Cockerels for sale. Pullets scored 93%; Cockerels 92%. Eggs for sale.

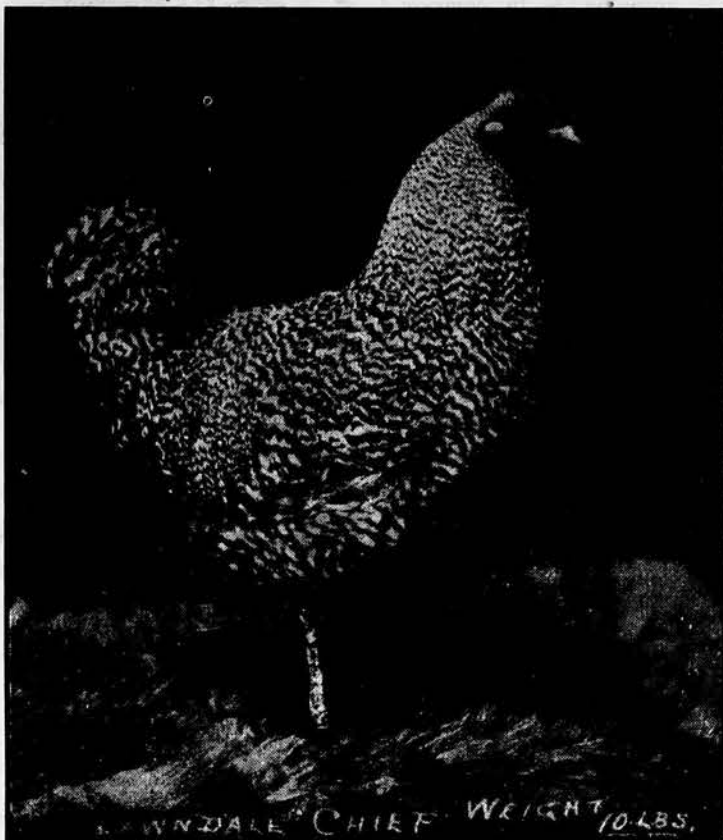
MRS. W. O. MAGATAOEN, BEATTIE, KANS. Mention KANSAS FARMER when writing.

BLACK LANGSHANS

Bred by John Shank, New Cambria, Kansas Stock and eggs for sale. Eggs, \$2 per 15.

Fancy Black Langshans

G. C. MILLER, Breeder. Stock for sale. Fifteen eggs for \$2. Address 546 Missouri St., LAWRENCE, KANS.



OWNED BY JOHN D. ZILLER, HIAWATHA, KANS.

POULTRY BREEDERS' DIRECTORY

Light Brahma Chickens Choice pure bred cockerels for sale. Write or call on Chas. Foster & Son, Eldorado, Kan. Route 4

PARK VIEW FARM

WHITE PLYMOUTH ROCK EGGS for sitting—Fine stock; farm raised. Price, \$1 for 15; special price by the hundred. Shipped by express, carefully packed, anywhere. Mrs. O. E. Walker, Route 8, Topeka, Kans.

S. C. RHODE ISLAND REDS

Winner at 1906 Kansas State Poultry Show—1, 2, 3, 4, 5 pen; 1, 2, 3, 4, 5 hen; 2, 3, 4, 5 pullet; 2, 4, 5 cockerel. Young cockerels for sale. Eggs, \$1.50 to \$2.50 for 15, from high-scoring pens. R. B. Steele, Sta. B. Topeka, Kans.

FOR SALE.

15 varieties pure-bred chickens, ducks, geese and turkeys. Fowls and eggs at low prices. Write for catalogue. H. H. HINKER, Mankato, Kans., R. R. 4.

ACME CHAMPIONS Bronze turkeys, Show Champion, Topeka and St. Joseph, winning ten 1sts, three 2nds, two 3d prizes; only 7 birds entered. Barred Rocks, 1st, 2d hen, Topeka, 93%, 92%, 5th cock 90%; 4th pen St. Joseph, 2d hen 92%, 3d cock 91. own 2d cockerel, 93%. Eggs, \$2 per 15; \$5 per 30. M. B. Turkey eggs, \$1 each. Cockerels for sale. Pullet breeders specialty. Mrs. W. B. Popham, R. F. D., Chillicothe, Mo.

SAVE YOUR CHICKS.

Use the Itamar Mite and Lice Killer, a mite and lice destroyer. Guaranteed to kill mites and lice if properly used. If not satisfied return bottle and label and money will be refunded.

CHAS. E. MOHR, Glendale Park, Hutchinson, Kans.

MERRITT'S BARRED PLYMOUTH ROCKS

FOR SALE—Pure-bred Barred Plymouth Rock Cockerels, \$1.00 each.

A. C. Merritt, Route 4.

HILL CREST FRUIT AND POULTRY FARM North Central Avenue, Topeka, Kans. Independent phone 4351.

Buff Orpingtons and Buff Leghorns

Cockerels for sale. Eggs in season, \$2 per 15, and infertile eggs replaced. Also breeder of squabs. Write for further information and price list to

W. H. MAXWELL,

1220 Quincy Street, Topeka, Kansas

Rose and Single Comb White Leghorns and White Wyandottes

IN ALL THEIR PURITY

Unsurpassed in every respect for beauty, utility and winter layers. At State show the largest in the United States, just held at Topeka Kans, 26 prizes were awarded me. Write for my catalogue, giving prizes on stock and eggs.

W. S. YOUNG, McPherson, Kans. When writing mention this paper.

At Topeka 1906

Our Buff P. Rocks won all shape and color prizes awarded. Our first prize pullet scored 94 (out 1 for injured eye). Our winning Houdans, White Plymouth Rocks, and White Plymouth Rocks, and White Wyandottes, are the same quality. We have very fine S. C. B. Leghorns. Judge Heimlich cut our White Rock cock 1/4 of a point for color of entire bird. Eggs from pens we hatch from \$2 per 15; \$3 per 100. Standard Poultry Yards, Abilene, Kans.

INCUBATOR EGGS

From high grade White Rocks and White Wyandottes.

\$3.00 for 50, \$5.00 per 100 SEND FOR CIRCULAR.

W. L. BATES, Topeka, Kans.

White Plymouth Rocks EXCLUSIVELY.

Good for Eggs, Good to Eat, and Good to Look at

W. P. Rocks hold the record for egg-laying over every other variety of fowls; eight pullets averaging 289 eggs each in one year. I have bred them exclusively for twelve years and have them scoring 94 to 95%, and as good as can be found anywhere. Eggs only \$2 per 15; \$5 per 45, and I prepay expressage to any express office in the United States. Yards at residence, adjoining Washburn College. Address

THOMAS OWEN, Sta. B. Topeka, Kansas

BEE SUPPLIES

We can furnish you bee and all kinds of bee-keepers' supplies cheaper than you can get elsewhere, and save you freight. Send for our catalogue with discount sheet for early orders.

Topeka Supply House
7th and Quincy, Topeka, Kansas.

\$7.90 FOR OUR 100 EGG HATCHING WONDER INCUBATOR

Delivered, with Brooder only \$11.50

Hot Water heat, large aluminum-coated tank, automatic regulator, triple case, nursery. Substantial, practical. Price includes thermometer, funnel and book of instructions. The Brooder is also a well built practical machine and when the two are shipped together the price is only \$19.50 delivered anywhere east of the Rocky Mountains. Note! The price of the incubator delivered west of the Rockies is \$9.00. Incubator and brooder together \$14.75. Order today. Money refunded if not as represented. Cat. free.

ESTABLISHED 1867
180, KENTEL CO., Quincy, Ill.

Dairy Interests

Suggestions for Construction of a Modern Dairy Barn.

FROM THE DAIRY DIVISION, BUREAU OF ANIMAL INDUSTRY, U. S. DEPARTMENT OF AGRICULTURE.

The plan is designed for 24 cows, and allows ample room for calf pen and box stalls for bull and cows; also space for feed-room, hay chute, wash-room, and silo.

In presenting this plan it is not intended to insist that the arrangement shown is the only satisfactory one, but the idea is to present some important features that are often overlooked by the builder and which are vital to a well-planned structure.

The amount of space allowed for the various purposes named on the plan is thought to meet the requirements so far as the square feet of floor space is concerned. The arrangement of the space can be adapted to the needs of the particular location.

SPECIAL FEATURES TO ALL WELL-PLANNED BARNES.

Size.—It will be noted that the width on the plan is 36 feet 4 inches outside. There are two main reasons for adopting this width, first, it allows ample room for the stalls and passageways, and, second, it permits of the most economical use of lumber in building.

While the length here shown is 84 feet 9 inches, this feature is wholly

animals and no bad effects result. The floor is intended to be raised about 1 foot above the level of the ground to insure drainage.

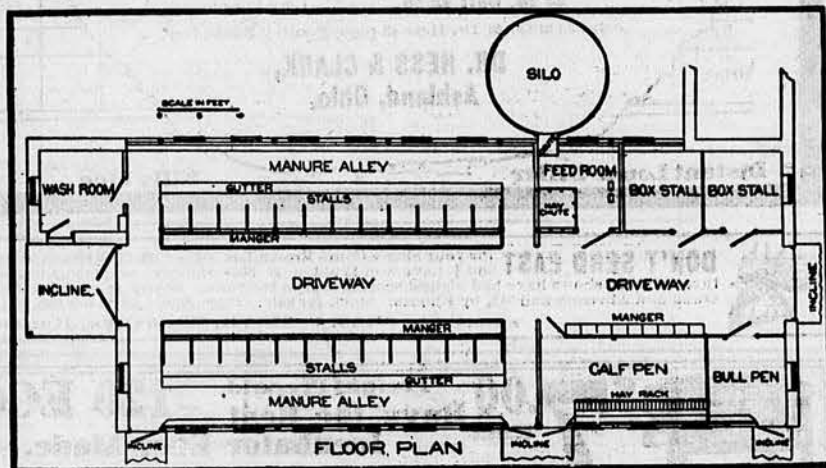
Alleys.—The alleys behind the cows are 4 feet wide; these give ample room for the passage of the manure trucks. It is designed to take the manure not only out of the barn, but away from the barn and deposit it in a manure shed or on the field. It is undesirable from the standpoint of construction to have a manure pit under the stable, for the reason that a concrete floor can not successfully be put on wooden joists, and steel joists are expensive. It is also unsanitary to have the manure cellar under the floor.

Calf pen.—This should be a feature in every well-planned dairy barn. The one shown is 21 by 11 feet, with manger on the front for feeding grain and hay-rack along the back wall. Individual stanchions are provided for feeding calves grain and milk.

Bull pen and box stalls.—These are approximately 10 by 10 feet, which is considered ample size for this purpose. There is a full window in each stall providing an abundance of light.

Feed room.—This is centrally located; a chute from the silo enters into it, also two grain chutes from the upper floor. The feed room is large enough for storage of trucks necessary to carry grain and silage. A hay chute from the loft above deposits the hay in the feeding alley.

Wash room.—No dairy barn is complete without a wash room for the milkers and barn attendants, and lockers for their clothes. It should also



FLOOR PLAN OF MODERN DAIRY BARN.

dependent on the number of cows the dairyman wishes to handle. The side walls are built of stone or concrete up to the window-sills, the balance of the walls being frame. The end walls are constructed of stone or concrete up to the ceiling. A partition extends across the barn, so that the cow stable can be entirely shut off from the other section. This is considered a strong point in this plan.

Posts and joists.—The posts carrying the upper floor are 6 by 6 inches, the girders 10 by 12, and joists 2 by 12. If yellow pine is used, the joists may be spread 24 inches between centers, but if hemlock is used, the distance should be reduced to 18 inches.

Windows.—One of the weakest points in barn construction is the small amount of window space usually allowed. The space in this plan provides approximately 6 square feet for each cow. It will be noted from the elevation that the windows are sliding sash, making them nearly twice as high as they are wide. This arrangement will admit much more light than the same space would if the windows did not extend to the ceiling. A common error is to make the windows too low.

Stalls.—The plan shows a width of stall of 3 feet 6 inches, which is as narrow as should be allowed. This width also fits into the construction better than any other. The depth is indicated as 4 feet 10 inches. This may be varied according to the size of the cows in the herd by increasing the depth of the stalls and decreasing the width of the alley behind, or vice versa. Manure gutter should not be less than 16 inches in width and not over 4 inches deep.

Manger.—The manger is planned to be 2 feet wide and 6 inches deep, with slightly rounding bottom, the bottom being 2 inches higher than the floor of the stalls.

Floor.—The entire floor is concrete 6 inches in depth when finished. We consider concrete the best material for a floor for several reasons: (1) It is the only material that is sanitary; (2) it is economical because of its durability; (3) when a reasonable amount of bedding is used it is comfortable to the

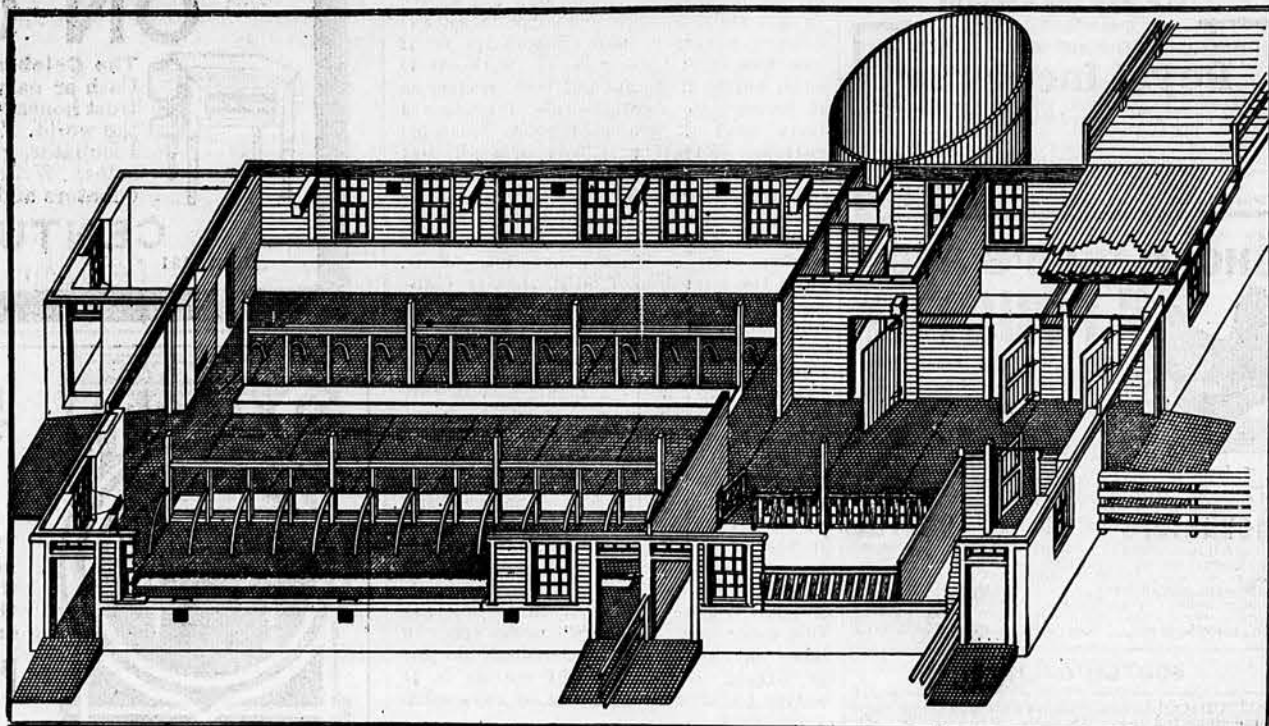
contain a small boiler for providing hot water and steam, as this is a necessary part of the equipment of a modern barn. Milk scales, record sheets, milk stools, etc., may also be kept here.

Watering.—Watering devices may be put in at the option of the builder and are necessary feature of a modern dairy barn.

Silo.—A silo is provided in the plan at a convenient location for feeding the silage. The silo planned for this barn is 16 feet in diameter and 28 feet high, and has a capacity of about 110 tons. This will provide silage for 24 animals for six to eight months.

GENERAL VIEW OF INTERIOR OF BARN.

The illustrations show the construction of walls, floors, and partitions, also location of doors and arrangement of stalls. The stalls are so designed that



GENERAL VIEW OF INTERIOR OF BARN.

A Big Difference

One Minute's Washing as compared to at least fifteen. Wouldn't you like to save at least fourteen minutes twice a day? One minute with a cloth and brush cleans the absolutely simple Sharples Dairy Tubular Cream Separator bowl shown in the upper picture. It takes fifteen minutes to half an hour with a cloth and something to dig out dents, grooves, corners and holes to clean other bowls—one of which is shown in lower picture.



Washed in 1 minute

Count the pieces—notice the difference—and you'll understand why the one who has to do the cleaning prefers the simple Sharples Tubular.

There are other advantages just as much in favor of the Tubular. Write today for catalog V-166—it tells you all about the gain, use, and choice of a separator.

The Sharples Separator Co.
West Chester, Pa.

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Chicago, Ill.



Washed in 15 to 30 minutes

Cream is Cash

—AT—

The largest exclusive Cream Butter Factory in the World

NO WAITING

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Cream shipped to us is paid for immediately.

Our motto is:

CORRECT WEIGHT,

HONEST TEST,

and the highest possible price for butter-fat.

Under this banner we have established an enormous business.

Through a continuation of this policy, we expect to increase our business each month.

A cordial welcome awaits every enterprising milk-producer, who appreciates having his product handled economically so as to get the greatest returns and that in Cash.

It's a pleasure to answer letters. Will be glad to hear from you.

Very respectfully,

BLUE VALLEY CREAMERY CO.,

ST. JOSEPH, MISSOURI.

stanchions or chain ties may be used. Builders who desire to use patent stalls will find the arrangement of gutter, platform, and feed manger applicable to their use.

Storage of feed.—There is no objection to storage above the cow-stable

proper, so long as the floor is constructed similar to the one in the drawing; that is, a double floor with paper between, the upper part being made of matched lumber.

Ceiling.—In colder climates it is deemed better to have a comparatively

low ceiling on account of temperature, and this construction admits of changes in this respect.

Ventilation.—The plan adapts itself to any system of ventilation. The openings shown give a suggestion as to where the fresh air may be taken in and the impure air discharged.

Driveway to second floor.—This is located on one side of the barn, at the end. The main reason for locating the driveway at this point is because it does not shut out any light from the floor below. Too often the driveway is placed in the center of the barn, where it covers a large area, which should be left free for windows.

Cost and Profit of Dairying.

[From Hoard's Dairyman—Continued.]

Herd No. 71—Contains 11 native cows.
Yield of milk per cow per year, lbs. 2553
Yield of butter fat per cow per year, lbs. 94
Net returns from the creamery per cow \$19.74
Cost of keeping cow per year 23.00
Net loss on butterfat per cow per year 3.26

The feed was as follows: Pasture—\$6; roughage—mixed hay and fodder corn—\$11; grain—bran—\$6.

The herd was well housed. The owner does not read dairy papers.

Herd No. 72—Contains 13 grade Shorthorn and 2 Holstein cows.

Yield of milk per cow per year, lbs. 4490
Yield of butterfat per cow per year, lbs. 164
Net returns from the creamery per cow \$34.44
Cost of keeping cow per year 27.00
Net profit on butterfat per cow per year 7.44

The feed was as follows: Pasture—\$6; roughage—wild hay and fodder corn—\$11; grain—oats and cornmeal and bran—\$10.

The herd was well housed. The owner reads dairy papers.

Herd No. 73—Contains 10 grade Shorthorn and 1 Holstein cow.

Yield of milk per cow per year, lbs. 3121
Yield of butterfat per cow per year, lbs. 106
Net returns from the creamery per cow \$22.26
Cost of keeping cow per year 27.00
Net loss on butterfat per cow per year 4.75

The feed was as follows: Pasture—\$6; roughage—mixed hay and corn fodder—\$11; grain—oats and corn-and-cob-meal and bran—\$10.

This herd was but fairly well housed. The owner does not read dairy papers.

Herd No. 74—Contains 15 grade Shorthorn cows.

Yield of milk per cow per year, lbs. 2854
Yield of butterfat per cow per year, lbs. 112
Net returns from the creamery per cow \$23.52
Cost of keeping cow per year 20.00
Net profit from butterfat per cow per year 3.51

The feed was as follows: Pasture—\$6; roughage—mixed hay and fodder corn—\$11; grain—ear corn—\$3.

This herd was fairly well housed. The owner reads dairy papers.

Herd No. 75—Contains 10 grade Shorthorn cows.

Yield of milk per cow per year, lbs. 1945
Yield of butterfat per cow per year, lbs. 69
Net returns from the creamery per cow \$14.49
Cost of keeping cow per year 25.00
Net loss on butterfat per cow per year 10.51

The feed was as follows: Pasture—\$6; roughage—mixed hay and fodder corn—\$11; grain—ear corn—\$8.

This herd was poorly housed. The owner does not read dairy papers.

Herd No. 76—Contains 6 grade Shorthorn cows.

Yield of milk per cow per year, lbs. 3848
Yield of butterfat per cow per year, lbs. 137
Net returns from the creamery per cow \$28.77
Cost of keeping cow per year 25.00
Net profit from butterfat per cow per year 3.77

The feed was as follows: Pasture—\$6; roughage—mixed hay—\$10; grain—ear corn—\$9.

This herd was well housed. The owner reads dairy papers.

Herd No. 77—Contains 7 grade Shorthorn cows.

Yield of milk per cow per year, lbs. 2490
Yield of butterfat per cow per year, lbs. 92
Net returns from the creamery per cow \$19.32
Cost of keeping cow, per year 20.00
Net loss from butterfat per cow, per year 0.68

The feed was as follows: Pasture—\$6; roughage—mixed hay and fodder corn—\$14.

This herd was only fairly housed. The owner does not read dairy papers.

Herd No. 78—Contains 11 native cows.

Yield of milk per cow per year, lbs. 5171
Yield of butterfat per cow per year, lbs. 200
Net returns from the creamery per cow \$42.00
Cost of keeping cow, per year 29.00
Net profit from butterfat per cow, per year 13.00

The feed was as follows: Pasture—\$6; roughage—mixed hay and shredded corn fodder—\$11; grain—oats and cornmeal and bran—\$12.

This herd was well housed. The owner reads dairy papers.

Herd No. 79—Contains 5 high-grade Shorthorn cows.

Yield of milk per cow per year, lbs. 4412
Yield of butterfat per cow per year, lbs. 164
Net returns from the creamery per cow \$34.44
Cost of keeping cow, per year 25.00
Net profit from butterfat per cow, per year 9.44

The feed was as follows: Pasture—\$6; roughage—mixed hay and fodder corn—\$12; grain—bran and beets—\$7.

This herd was well housed. The owner reads dairy papers.

Herd No. 80—Contains 7 native cows.

Yield of milk per cow per year, lbs. 8501
Yield of butterfat per cow per year, lbs. 313 1/2
Net returns from the creamery per cow \$65.85
Cost of keeping cow, per year 28.00
Net profit from butterfat per cow, per year 37.85

The feed was as follows: Pasture—\$6; grain with pasture—\$2; roughage—mixed hay and corn fodder—\$10; grain—oats and barley meal and bran—\$10.

This herd was well housed and kept in barn at all times during winter months. The owner reads dairy papers.

Below may be found the returns per cow for each dollar invested in feed:

No. Herd	Butterfat lbs.	Pro-ceeds.
71	86	1.27
72	127	.82
73	106	1.17
74	112	.58
75	115	.97
76	145	1.38
77	138	2.35
78	138	2.35
79	138	2.35
80	138	2.35

Comparing the best and poorest herds of this group results as follows:

No. Herd	Butterfat lbs.	Pro-ceeds.
No. 80, milk, lbs., 8501	313 1/2	\$37.85
No. 75, milk, lbs., 1945	69	*10.51

Difference, milk, lbs. 6556 244 1/2 \$48.36
*Loss

Again, comparing the best and the average of all, results as follows:

No. Herd	Butterfat lbs.	Pro-ceeds.
No. 80, milk, lbs., 8501	313 1/2	\$37.85
All, milk lbs. 3431	126 1/2	2.00

Difference, milk, 5070.. 187 \$35.85

Of this group of herds it may be said that for each dollar invested in feed, four sustained a net loss of 20 cents. The remaining six herds made a net gain of 29 1/2 cents. Of the herds sustaining loss, the owner of but one reads dairy literature. Of the profitable herds the owner of but one does not read dairy papers.

A Davis

Cream Separator direct from factory at factory prices, costs half as much as most others. No agents' fees to double prices. Investigate our liberal selling plan and the simple three-piece bowl machine. Gets every drop of cream. Tank 3 feet 7 inches high. Write for money saving catalog No. 125. Davis Cream Separator Co. 54 0 North Clinton St., Chicago, Ill.



GIVE YOUR COWS A SQUARE DEAL

The owner of but three, four or five cows as a rule keeps them simply for the purpose of supplying the home table with milk, cream and butter. He claims it does not pay to keep cows for the dollars and cents they will earn. Why he makes this claim is only because he has never given the cows a "square deal". It is a case of the pot calling the kettle black. The cows are well fed, milked daily and the milk set away in crocks or pans for the cream to rise by natural processes. Here is where the cow receives her bad reputation. From twenty to fifty per cent of the cream never rises and is thrown away with the skim milk. This twenty to fifty per cent of lost butter represent a snug little sum at the end of the year,—all lost, just thrown away, and the cow is considered unprofitable. A

DE LAVAL CENTRIFUGAL CREAM SEPARATOR

will stop this waste and at the same time produce purer and sweeter cream from which butter can be made that will sell for from five to ten cents more per pound than the gravity skimmed product. In addition the skim milk is left fresh and warm for the calves. Are not such savings as this worth investigating? Our illustrated catalogue of DE LAVAL machines is sent free upon request. Write for it today and learn the many benefits and advantages to be gained by the use of a DE LAVAL machine.

THE DE LAVAL SEPARATOR CO.

Randolph & Canal Sts., CHICAGO. General Offices: 109-113 Youville Square MONTREAL
1212 Filbert Street, PHILADELPHIA. 74 CORTLANDT STREET, 75 & 77 York street, 3 TORONTO.
9 & 11 Drumm Street, NEW YORK. 14 & 16 Princess Street WINNIPEG.

Take Care You Can't Afford to Make a Mistake

In Buying a Cream Separator

Of course you want the separator that will give you the best results. Don't make a mistake, then. Investigate before you buy. We claim and ask the chance to prove to you that the

OMEGA CREAM SEPARATOR

is more easily turned; more quickly, easily and thoroughly washed; requires fewer repairs and produces cream of a better quality than any other separator ever made.

Its superiority lies in its construction; it is the only cream separator made whose bowl is supported at both top and bottom—giving absolutely smooth running without vibration; the only separator which delivers both cream and skim milk from the bottom of the bowl; the only bowl which drains itself; the only bowl which can be stopped instantly; the only bowl which does not whip the cream and break the globules of butter fat.

We are so sure that any intelligent man or woman can see the Omega's superiority that we ask the privilege of setting one up for you on your own place. Try it and test it in every way and if you do not find it superior to any other—if it is not perfectly satisfactory to you—you to be the sole judge—we will not ask you to keep it. That's a fair offer. Don't you think it will pay you to find out more about this separator for which so much is claimed? Send for catalog, at any rate.

This Book Free to You. New book, "More Milk Money," tells how to care for separator cream; how to make good butter; how to select good dairy cows; how to prevent white specks in butter; how to wash and work butter and a hundred other things you ought to know. Ask for it. Free if you mention this paper, tell how many cows you keep and give address of a neighbor who keeps cows.

The Omega Separator Company, 23 Concord St., Lansing, Mich.

Thick Cream SELLS FOR ONE CENT MORE PER POUND THAN THIN CREAM

The creameries of the country have become so convinced of the increased value of thick cream over thin cream that many of them are paying one cent per pound more for cream testing 30 per cent. and over than for that testing under 30 per cent.

The reasons for this are—
First—Thick cream makes better butter because it contains less milk and therefore keeps in better condition.
Second—Thick cream is so much less in quantity that the cost of transportation is less.

It is much better for the dairyman to make thick cream because he has more skimmed milk left at home to feed calves—it then follows that dairymen should buy only such separators as can separate thick cream.

The U. S. Separators

Lead the World in this particular Beware of the cheap and poorly constructed separators that cannot make thick cream. They would be expensive even if furnished without cost. VERMONT FARM MACHINE CO., Bellows Falls, Vermont. 18 centrally located distributing warehouses throughout the U.S. and Canada.



Cleveland Cream Separator

The Only High Grade Separator Sold at a Reasonable Price.

Easy Running Because—
The Cleveland is the only all ball-bearing separator made. To compare ball-bearings with any other bearings made is like comparing a bicycle with a grind-stone.
Durable Because—
The Cleveland has the fewest parts of any separator made in the world. The fewer parts in a separator the less wear—the less repair.
Easy to Clean Because—
The fewest parts and the Cleveland skimming device made of aluminum. We were the first

to apply this wonderful metal to this use. It is non-corrosive, non-poisonous, has no coating to wear off and milk will not stick to it.
The Selling Plan:
30 days approval test in your own home under your own conditions. You don't need to take our word. Try a Cleveland, the guaranteed perfect skimmer. It won't cost you a cent to be sure. You try one in your own home without putting up one cent in advance. The new free catalog tells you how. Write for it.

The Cleveland Cream Separator Co. Dept. A, 34 Michigan Ave., N. W., Cleveland, O.

A Farmers' Institute Talk on Commercial Poultry Culture.
(Continued from page 229.)

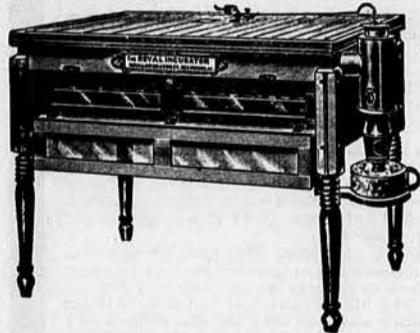
for them, but if you have not, remember they will do well on this sort of a diet.

The successful man knows diseases and their symptoms, and being so much with his birds, is sure to detect the first sign of trouble. Should "Biddy" take the roup, he knows it, and immediately separates her from the remainder; the same of cholera, liver complaint, etc. In treatment, he knows what to do. Sometimes in roup they may last over twenty-four hours, or if they have the roup with the dyptheratic touch, they die at once. Sometimes it is the very choicest bird, probably it is one for which he paid \$10 or \$15; but whichever it is, he knows the only thing to do is just to take it out and kill it, and then watch out for others. If he is up against it, he does not get discouraged, but takes into consideration that bad luck may come to all of us at some time. Remember that after a full meal, the Indian girds up his belt and starts out after a deer. If he goes all day without finding a deer, he then girds his belt a little tighter and runs on, it may be several days before he stalks one, but he does not give up, only girds his belt a little tighter and keeps on until he does find one. So it is with the man who succeeds in any business—if disappointments overtake him, he just takes a hook in his belt and goes on. This reminds me of a man who once told me, "You are not in it"—and went up in an alfalfa place and opened a plant. He hatched out some fine birds and lost none of them. This gave him room to boast "That he would show people how to do business in the right way." Then he hatched out more, but lost every one of them. After this he said bad luck had struck him and he soon sold out and went to teaching school. No system, just a haphazard way of doing business.

The practical breeder knows what it costs to produce an egg, he has a record of all his pens, number of hens in each, how each is doing, how old each hen is, knows the ones that lay and the ones that do not. If he has a pen that is not paying, he watches and takes out those that do not lay and puts them in the fattening pen. If it were not for the record, how could he tell which were paying? Another thing, he always feeds at the same hour; if not, the birds will be treading on one another; he uses a certain measure and feeds the same amount; if they are indifferently anxious, he gives them about what they will eat clean.—W. C. Stevens, in Live Stock Tribune.

The Royal Incubator at \$12.75.

These are days of low prices among incubator people, but a machine that seems to go just a little beyond anything else in the way of a bargain is this 230-egg No. 3 Royal at \$12.75. It is a double walled, self-regulating machine with all the appliances and devices, in finest working order, of the very highest-priced machines. Its weight is 140 pounds, and we have the



word of the manufacturing company that they really consider that in selling this 230-egg Royal at \$12.75, they are offering "the best incubator proposition that has ever been made by any incubator company in existence."

The Royal has been one of the most popular incubators before the public for years. It enjoys the enviable reputation among poultrymen of being the one really high-class incubator that has always sold at a popular price.

If you want an incubator bargain you can not do better than get in touch at once with the Royal Incubator Company, Drawer 66, Des Moines, Iowa. They will send you their catalogue free. Enclose ten cents with your request and they will send you their valuable little book on "Proper Care and Feeding of Chicks, Ducks, and Turkeys."

An Opportunity for Beginners.

There are many families who have considered the incubator hatching of chickens, but who have never made a start in that direction on account of the expense involved in purchasing an outfit. Not knowing just how successful they would be, they have desired to be very conservative in the outlay for hatching machinery. The Geo. Ertel Co., of Quincy, Ill., gave this desire careful attention last summer, and decided that they could afford to make a very close price on a small machine, which would do good work and which would serve to introduce their goods to users, who, making a success of the

small machine, would certainly want a larger one in time. By careful figuring on the manufacture of such a machine in large quantities, they decided that they could get the price down to \$7.90 for the incubator delivered anywhere east of the Rocky Mountains, and that it would be possible to include the brooder for a delivered price of \$11.50. On account of the high freight rates, the prices to points west of the Rocky Mountains have to be a little higher. They have thousands of these machines all crated and ready to ship, and those who have seen them say they are an up-to-date machine which will certainly do good work. This machine is made in one size, 100-egg capacity, and is an improved form of the Hatching Wonder which they have sold for a number of years, and with which, doubtless, many readers of the KANSAS FARMER made their start in chicken-raising.

How Long Should an Incubator Last?

Neither the case, the doors, the inside packing nor any of the structural parts of an incubator are subject to appreciable wear. Yet we find that many a man has laid aside his incubator, calling it "worn out." It seems a pity that so many good machines should thus be discredited, when a remedy is so close at hand, applicable to every machine, no matter of what make.

The great trouble with most of the above incubators is that the vital parts—regulator, thermostat, lamp and heating system, do their part for only a short period. They are often flimsy, cheap substitutes for the real parts they represent.

The faulty parts can be readily replaced by the reliable, durable "Acme" goods made by the H. M. Sheer Company, Quincy, Ill.

The Acme Wafer Thermostat is the only perfect thermostat on the market; has stood the test of time and usage. Their patented valve and filler is the keynote to its wonderful efficiency. All of their regulators are equipped with this wafer, making them sensitive to a fraction of a degree, controlling the temperature automatically, and requiring but one adjustment. Their action being almost human.

Their new catalogue just from the hands of the printers, gives full description, prices, etc., of their large and complete line of supplies. It also contains the complete illustrated plans, enabling any one to build the Famous Peerless Incubators and Brooders; so clearly described and illustrated a boy of 10 years old can follow them. They are free, together with their catalogue. Send for them to-day. They are worth \$2 to any one interested in artificial incubation. Address, H. M. Sheer Co., Quincy, Ill.

"A Sturdy, Yellow Puff-Ball—His Mother Was 'a Hatch-All'."

That is the legend on the title page of a newly written, 80-page incubator catalogue just off the press. A fluffy, happy chick, backed up by two of his brothers makes an appropriate illustration for the "Hatch-All" Incubator catalogue. Inside, the whole eighty pages are interesting, instructive, profitable to every poultry-raiser. There are over sixty half-tone illustrations reflecting nearly every phase of the poultry industry. The double half-tone (pages 36 and 37) illustrating "How I made money on a town lot" shows a thrifty flock of white Wyandottes in their own surroundings. They are a lot of beauties. The article is written by Mrs. Wagner, a Nebraskan. Every poultry-lover ought to send for this book if merely to own this handsome, double-page illustration. There are a score of valuable, money-making features about this catalogue. It explains in full the value of the "Hatch-All" incubators and brooders, their heating systems, ventilation, regulators, lamps, etc. These are fully illustrated in half tone. It explains how the Hebron Incubator Co. send their machines, freight prepaid, saving buyers trouble, annoyance, expense. An extended article details the proper methods of running an incubator, how to avoid mistakes and loss through lack of experience. Space is too limited here to tell all about this well-written piece of incubator literature. I urge every reader and keeper of poultry to send to the Hebron Incubator Company, Hebron, Nebraska, for this book.

ONE WHO HAS READ IT.

A Good Little Poultry Book.

We take pleasure in directing the attention of our readers to a little book before us, entitled "Proper Care and Feeding of Chickens, Ducks, Geese and Turkeys." It is published by the Des Moines Incubator Company, Des Moines, Iowa, and is sold for 10 cents a copy. No reader will begrudge the small price to get the accurate, specific information which this little book contains. It is in neat, compact form, and gives directions and pointers in a way that they will be applied every day by the poultry-raiser. The different classes of fowls are treated separately. Particular attention is given to right starting, the foods that are adapted and those not adapted to the new-born fledgelings. It is an especially valuable book for beginners. Old poultry raisers will get many valuable suggestions from it. A copy may be procured by sending 10 cents direct to the publishers.

In a new catalogue the Manson Campbell Co., Detroit, Mich., explains its claim to be able to produce the best possible incubators and brooders at less cost than is possible in any other factory. This catalogue is a beauty, is filled with useful information, and can be had for the asking. Mention KANSAS FARMER.

Racine, Wis., is a great place for the manufacture of agricultural machinery. Among the appliances made none is more in demand than the Bell City incubators and brooders. Send to the Belle City Incubator Co., Racine, Wis., and get a copy of "Hatching Facts"; it will give you information and entertainment on the production of the "helpful hen."

TALK ABOUT YOUR HAM

You never tasted meat so sweet and well kept as ham smoked in the new way with Wright's Condensed Smoke. If you have ham, bacon or any kind of meat to cure

WRIGHT'S CONDENSED SMOKE

will cure it perfectly without loss of time or meat. Easy, certain, safe, healthful. Bottle smokes 280 lbs. At druggists 75 cents. Fully guaranteed. Write for "The New Way." Tells ALL about it. The E. H. Wright Co., Ltd., 112 W. 4th St., Kansas City, Missouri!

PIONEER GUARANTEED NURSERY STOCK AT WHOLESALE PRICES.

All stock guaranteed disease free and true to name. Hart Pioneer Stock is pure bred and produces heavy crops. Value received for every dollar sent us. No Agent's Commission. WRITE FOR COMPLETE PRICE LIST. WE WILL SAVE YOU MONEY. HART PIONEER NURSERIES, Established 1895. Fort Scott, Kan.

LIGHTNING PORTABLE WAGON SCALE and STOCK SCALE

All above ground. Steel frame, only eight inches high. Octagon levers. Tool steel bearings. Compound beam. Most accurate and durable. Write for catalogue and price. Kansas City Hay Press Company. 129 Mill Street, Kansas City, Missouri.

The German Nurseries.
To purchasers of seeds, plans and trees the name of Carl Sonderegger and the German Nurseries is not new, but it is nevertheless not out of place to call attention to the fact that as usual Mr. Sonderegger is prepared to supply the very best in quality on his usual reasonable terms. Anything that is required in the way of apples, plums, cherries, peaches, grapes, etc., will be supplied by the German Nurseries in any quantity and the purchaser can rest assured that it will be of the satisfactory kind. For the convenience of his patrons Mr. Sonderegger issues two editions of his catalogue—one in English and the other in German. The catalogue lists a great many good things for the agriculturist and includes not only fruit-trees and small fruits but forest-tree seedlings and hundreds of choice varieties of tested seeds. Be sure and send for one of these catalogues before ordering your supply of seeds for this season's planting. Address The German Nurseries, Carl Sonderegger, Proprietor, Beatrice, Nebraska, mentioning this paper.

Coated Roofings.
Roofs generally need painting four times to one time that the rest of the building does. Most of the Ready Roofings on the market require a coating every year or so with a special kind of paint. Amatite, however, is a big exception to the rule. This roofing has a well-earned popularity because it never requires painting or coating. Just lay it—that's all. After that Amatite takes care of itself, needing no attention. The mineral surface is better than any paint could be. It will be found well worth while to send for a free sample which may be had without charge by addressing the Barrett Manufacturing Company, New York, Chicago, Cleveland, Boston, Allegheny, St. Louis, Minneapolis, Philadelphia, New Orleans, Kansas City.

At the various State fairs visited by the KANSAS FARMER representatives, it was particularly noticeable that the Gee Whizz Washing Machine, manufactured at Des Moines, Ia., and now advertised in the KANSAS FARMER, was a good seller, and it was evident that it was the most popular machine on the market. We trust our readers who are interested in securing a first-class washing machine will write these people for full information about the Gee Whizz Washing Machine and mention the KANSAS FARMER.

The American Galloway Herd Book, Vol. XV, is out. Its 507 pages contain an elaborate record of 1999 pure-bred animals numbered from 25001 to 27000, a copy of charter, constitution and by-laws of the association and a list of active members; also an index to breeders, importers, and owners of these animals. It is published at Cedar Rapids, Ia.

We call special attention to the seed advertisement of M. G. Blackman, Hoxie, Kansas, who is advertising the Great American Desert Seeds. His specialty for 1906 includes alfalfa, Kafir-corn, cane, millet, Russian Proso, spelt, etc. Write him for catalogue and he will explain why "the desert shall rejoice and blossom as the rose."

On page 225 of this issue, we call your attention to an original ad by Frank C. Clark, one of California's largest farmers that should appeal to the reader. He has won out in farming by practicing up-to-date Middle-western methods in his own State, using his own term, an old California phrase, "By staying with the '49 and spring of '50 ways."

Among the attractive catalogues of the season that of B. F. Smith the small-fruit man of Lawrence, Kansas, is especially neat. Mr. Smith has been known as the "berry king." His extended experience in small fruits in Kansas has enabled him to concentrate his efforts on the varieties that are most profitable for either the home, garden or the commercial plantation.

DROUTH DEFIER

NEVER LOSE A CROP
If you use the Topeka Foundry Packer, Packs surface as well as subsurface. Write for prices and circulars.

Topeka Foundry
TOPEKA, KANSAS
When writing mention Kansas Farmer.

Neosho Poultry Yards
Rose Comb R. I. Reds exclusively. Two first, one second and one third prizes at the Emporia, Dec., 1905, Show. One pen of fine red pullets and hens mated to a red male for producing red pullet eggs from this yard. \$2.00 per 15, others at \$1.50. J. W. Swartz, Americus, Kansas.

Combination Thief-Proof Whip and Walking Stick
The Greatest Novelty of the age. No buggy is complete without one. Price, \$1; postage paid to any part of U. S. Address E. T. Davis Co., Tippicanoe City, Ohio. Send your orders quick.

KIND FARMERS
Many of you need a Berry Patch
My 1906 Catalogue will tell you how to start it. Also, the price of plants, roses and other ornaments for the yard. B. F. SMITH, Drawer C, Lawrence, Kans.

13 WEEKS FREE
Or 15 months for only \$1
The Kansas Farmer

The "old reliable" KANSAS FARMER, established in 1868, the best genuine agricultural weekly paper in the west. It solves the problems for the busy farmer. It helps and interests every member of the farmer's family. It has 12 regular departments. Its contributors are expert authorities. It contains 24 to 32 pages each week. Sent on trial three months free. Test it. Clip the coupon below.

KANSAS FARMER COMPANY,
Topeka, Kansas.

I accept your trial offer to new subscribers to send me the Kansas Farmer three months free. At the end of the three months I will either send \$1.00 for a full year from that date or write you to stop the paper, and you are to make no charge for the three months' trial.

Name

P. O. Address

A "Peaches and Cream" Stallion.

Our illustration is from the "home of the winners," of Frank Iams, St. Paul, Neb. The largest individual owner and importer of black Percherons, Belgians, and Coach stallions in the United States. He imports stallions by special express train load, spends four months in Europe, selects and buys every stallion himself, direct from the best breeders. He knows the country, and how to buy "top notchers" worth "the coin." He uses his own money, owns his farms, horses and barn, has no two to ten men as partners. He saves you all commissions and middlemen's profits as he sells all his stallions at his home barns himself, and sells more stallions than any ten men in the United States. He is saving thousands of dollars to stockmen by selling "peaches and cream" stallions at \$1,000 to \$1,500. He guarantees them better than stallions sold to farmers' stock companies at \$2,500 to \$5,000 each. If you do not find this true, on a visit to his importing establishment, he will cheerfully pay you \$100 for trouble, you the judge. Iams speaks the languages; this alone saves him 20 per cent on his stallions. He is not in the great stallion trust; this saves you 25 per cent. He places \$1,000 insurance in reliable company at six per cent. His successful business of 24 years makes him a safe man to do business with. He gives every bank in his town as reference. "It's up to you," why will you pay \$3,000 for a \$1,200 to \$1,500 stallion? Iams has "the goods" just as you read about. This cut is true to life and is "Iams' Espoir-De-Ragnes (21653), Royal Belgian—5 years old; weight 2,140 pounds. He is a massive, big-boned drafter of smooth form, an up-to-date stallion that you are looking for; one that turns the heads of all the boys. He is a "peaches and cream" "black boy" with the "Iams' brand" on him. That alone stamps him as a "top-notch." Iams has 120 models of this type, that he is selling at \$1,000 and \$1,500, and all must be sold. Don't wait, write Iams for that "hummer" of a horse catalogue. It's the richest on earth. It will save you \$1,000 or \$1,500 and tell you where and how to buy a "top notch." Don't take any "con salesman's" word, visit Iams. His barns are filled to the roof with 1,600- to 2,600-pound stallions.

Tested Seeds.

This is the day when people want to know things. It is not enough to simply make an assertion, you must produce the proof for most of us are from Missouri, and have to "be shown." Especially is this true of the farmer with his seed. He has been reading how corn is bred and tested and sorted, and he thoroughly believes in that sort of thing. He knows that that is the only way he is ever going to get seed that will make his acres earn him the profit they should. Slip-shop ways of farming and haphazard seed might have answered the purpose a few years ago, but land is getting to be too valuable to admit of even pretty good farming. It must be good farming and tested seed must be planted if the farm is to yield him proper returns for the hard work of tilling the soil and harvesting the crop.

Same way with the garden. The seed counts a whole lot for the success or failure of the garden, as well as the farm, and the man who raises the seed you plant can help or hinder you. He should know that the seed he sells you is better this year than the seed he sold last. But most seedmen don't know that.

That method does not suit the wide-awake farmer and gardener of to-day. He has been studying along the lines of improvement, and he wants to know that the man who grows his seed knows how to test it, and how to grow better seed every year.



HENRY FIELD TESTING SEEDS.

In the accompanying illustration we show how Henry Field, an expert gardener and seed-grower of Shenandoah, Iowa, tests his seed in an incubator. He says, "I have struck a good plan for getting uniform warmth and moisture when I am testing seeds. I put them into an incubator. I put the boxes with the seeds in into the egg-chamber, set the regulator for about 70 degrees, and have spring weather made to order. The conditions are the same as spring out of doors, and the seeds sprout nicely if they are good grade."

Mr. Field is meeting with remarkable success, as a seedman, because he is a practical gardener and is making a scientific study of seed-growing. He applies the knowledge thus gained to the improvement of the seed he grows. He was the first man in the West to sell seed-corn in the ear, and also the first to sell shelled, graded and tested seed-corn, guaranteed "your money's worth or your money back."

Write to him for any information you desire about seed or any phase of gardening, he will gladly answer any questions that will help you to make your garden or farm work more pleasant and profitable to you.

The KANSAS FARMER has just had the pleasure of sampling a specimen each of Black Ben, Senator, and Delicious, apples sent by Stark Bros., of Louisiana, Mo. The Black Ben was as big as ever, well colored, firm, crisp, and looked capable of keeping until midsummer. The Senator was of nice size, shape, and color, and possessed a splightness of its own. It had been kept long enough as was shown by discoloration of its flesh

on one side. The Delicious was in exactly the right condition for eating. It was a large apple, well-colored, juicy and melting, delicately flavored, an apple among a thousand.

Wichita Nursery.

There has been a great increase of interest in tree-planting and fruit-growing in Kansas, Missouri and the Southwest in the past few years. This is a good thing for these regions, and gives promise of much more prosperous times for the farmer who uses such wise forethought as to plant plenty of tree and bush fruits.

W. F. Schell, proprietor of the Wichita Nursery, who was elected vice president of the Kansas State Horticultural Society last winter, has done much to increase the interest taken in fruit-growing throughout all these regions. He was the Kansas Commissioner of Horticulture at the World's Fair, and won the gold medal for the installation and display of the Kansas exhibit. He also received a gold medal from President Francis for merit in keeping up the exhibit during the seven months in so attractive a manner.

Mr. Schell states that the Southwest is an ideal place for the growing of tree- and bush-fruits of all kinds, but that stock should be selected that is especially adapted to the soils and climate of these States.

The Wichita Nurseries, Wichita, Kansas, are ideally located for supplying the right kind of trees, bushes, vines, etc., of every variety for these localities. They have direct connections with all points and sell at wholesale prices. All their stock is true to name and they are perfectly reliable people to deal with.

Mr. Schell gives all orders his personal attention, which means much to the purchaser, for the majority of nurseries leave the filling of orders to help who are often careless in their work and many times incompetent to select the right stock. Patrons of the Wichita Nursery receive the benefit of Mr. Schell's wide experience and knowledge of horticulture, as he cheerfully gives them any information they wish on this subject. They have just printed a beautiful new catalogue which contains much interesting and valuable matter. We advise all our readers who are interested in fruit-growing to write them for a copy. They will gladly send it free. Just address Wichita Nursery, Wichita, Kansas.

An Evergreen Specialist.

D. Hill, of Dundee, Ill., has long been known as an evergreen specialist, and a visit to his nurseries establishes his right to the title beyond question. For years Mr. Hill has made the study of evergreen culture a specialty with the result that within the confines of his ample grounds are to be found specimens of almost every variety of evergreens. Of those kinds which are in more general demand his stock numbers into the millions, while the most perfect specimens of the less hardy and rarer varieties are also to be found there. Many of these trees are natives of our own country and cover the slopes of the mountain ranges in their respective localities with vast forests of pine, spruce and cedar. There are others which have been imported from foreign countries, some coming from Russia, Switzerland, Japan, Australia, and other far distant climes. Mr. Hill has given the subject of transplanting and transporting these trees special attention and his method of digging and packing is such that there is seldom any loss caused by the operation, and the trees thrive and do well in their new locations even though they may have to travel many hundreds of miles before being placed where they are to remain permanently. While the Dundee Nurseries are particularly noted for the fine quality of their evergreens they also include deciduous trees, shrubs and other plants usually found in a well-stocked nursery. They are prepared to supply orders for almost anything in this line. Any one contemplating the planting of either evergreens or the other sorts will do well to secure a copy of Mr. Hill's catalogue. This book is but recently from the press and is beautifully illustrated and contains full information of value to any one in need of nursery stock. It will be sent free on request. Address Mr. D. Hill, Dundee Nurseries, Dundee, Ill., mentioning the KANSAS FARMER.

Cures Bone Spavin of 7 Years' Standing.

Wilton, Jct. Ia., Jan. 7, 1905.
Dr. B. J. Kendall Co., Gentlemen:—I have used your Spavin Cure and find it a great remedy. I have used it on a horse that had a bone spavin for seven years and after using two bottles of your Spavin Cure find it as sound as a dollar—a complete cure. You can use this testimony if you so desire.
Yours truly,
JULIUS GRODERT.

The Grain Belt Realty Company, Concordia, Kans., owner of 60,000 acres of fine farming lands, invites persons wanting farms on the great wheat, corn, and alfalfa lands of Central and Western Kansas to buy directly from the owner, thus saving commissions. The rapidity with which Kansas lands are going into new hands admonishes those wanting farms to move quickly. Write to the above-named company for detailed information of the bargains offered.

Are there farms in Kansas that pay 25 to 50 per cent? Such have been reported. The advertisement of Thos. D. Hubbard, Kimball, Kans., in this issue, tells about them. Write to Mr. Hubbard for particulars.

Has Not Lost Any Hogs Since He got Sloan's Liniment.

Dear Sir:—My hogs had hog cholera three days before we got your liniment which was recommended to me by a neighbor who was using it with success. I have used it now for three days and my hogs are almost well. One hog died before I got the liniment, but I have not lost any since.
A. J. MCCARTHY, Idaville, Ind.

GREAT COMBINATION SALE!

60 Thoroughbred Hereford, Shorthorn and Angus Cattle; Duroc-Jersey, Poland-China and Berkshire Hogs

ELK CITY, KAN., SATURDAY, MARCH 17, 1906

BREEDERS REPRESENTED

Hereford Cattle.—Raman Yohe, Elk City; I. L. Swinny, Lafontaine; Samuel Drybread, Elk City. Shorthorn Cattle.—H. M. Hill, Lafontaine; R. J. Conway, Elk City; B. H. Jeter, Elk City; D. O. Cripps, Elk City; Dunham & Logan, Lafontaine. Angus Cattle.—G. G. Coleman, Elk City. Duroc-Jersey Hogs.—W. O. Stephenson, Elk City; G. H. Coleman, Independence; Samuel Drybread, Elk City. Poland-China Hogs.—J. A. McDowell, Elk City; I. L. Swinny, Lafontaine; R. J. Conway, Elk City. Berkshire Hogs.—H. H. Miller & Son, Elk City; D. O. Cripps, Elk City.

TERMS OF SALE.—Cash or bankable note for six months, drawing 10 per cent interest. No postponement on account of weather. Sale held under cover, rain or shine.

For Catalogue apply to **SAMUEL DRYBREAD, Manager, Elk City, Kans.**

St. Joseph Stock Yards Co.

South St. Joseph, Missouri

A Short Story to the Point—Ship Your Live Stock to St. Joseph and return home well pleased.

Jno. Donovan L. D. W. VanVleet M. B. Irwin

Vice-President and General Manager Assistant General Manager Traffic Manager

PUBLIC SALE
Jacks, Jennets and Mules

Second Annual to be held in Savannah, Missouri, March 18, 1906

22 large Black Jacks with white points, the kind that has built my annual breeding trade to over 600 mares and jennets at one barn and that has made Missouri famous as a mule State. As a class they possess the essential points for good breeders, size, heavy bone, good width, length, heads, ears, style, substance, and of the best breeding known. Four large Black Jennets in foal of same character. 22 extra good coming 3-year-old mules, the good boned, wide out kind. Some of them will mature in mules to weigh 1400 to 1500 pounds; and 4 good young harness horses. Write for illustrated catalog.

G. M. SCOTT, Route 2, Res., Missouri.

Among Our Seedsmen.

Commencing with this issue, our readers will notice the advertisement of the Hart Pioneer Nurseries of Fort Scott, Kans., advertising high-grade nursery stock. This is an old established firm, having organized their business in a small way in 1865, until at the present time their nurseries comprise over 600 acres and are among the largest in the West.

They make a specialty of the mail-order business, and sell their stock direct to the planter at wholesale prices, which saves the consumer all agent's commission.

They advertise their stock to be strictly first-class, pure-bred in every respect and guaranteed true to name.

All of our readers who contemplate planting nursery stock of any kind this spring, will do well to drop a card to the above firm, asking for their wholesale catalogue. And you will do us a favor if you will kindly mention the name of this paper in writing to them.

One of the most interesting catalogues of grape-vines and small fruits is that of Geo. S. Josselyn, Fredonia, N. Y. At the World's Fair, St. Louis, Mr. Josselyn was awarded the only gold medal to any individual or firm for out-of-door grown grapes. About 90 per cent of his exhibit was Campbell's Early, a grape reputed to be of the highest quality, to begin ripening with Moore's Early and to improve for two to six weeks, making it a very early, a medium, and a very late grape. It is also claimed that it bears about three times as much fruit as any other variety. Write for Mr. Josselyn's catalogue, mentioning the KANSAS FARMER.

The advantage of planting perfect seed is but just beginning to be recognized. The genius of the inventor is therefore turned to the production of a seed grader that will separate the perfect from the imperfect, the large from the small, the heavy from the light. The Chatham Fanning Mill, made by the Manson Campbell Co., Detroit, Mich., is a machine that has been designed to meet the demand for a perfect grader. Get a catalogue and learn the merits of clean, pure seed and of the way to make sure of it.

Attention is called to the advertisement of nursery stock, trees, and small fruits in this issue, by John F. Dayton, of Waukon, Iowa, who is well known to our readers as having been for twenty-six years engaged in selling directly to the planter. He offers 400 strawberry plants for one dollar, and other stock at low prices. Write him for free catalogue.

The seed catalogue of Funk Bros., Bloomington, Ill., gives some exceeding-

ly valuable suggestions on breeding corn. These farmers of 25,000 acres were among the first to take up scientific breeding of plants in a large way. Their catalogue is mailed free on application. It should be in the hands of every grower of corn.

The Zimmerman Seed Co., of Topeka, Kans., is one of the vigorous and growing institutions of the State that does things. Get a 1906 catalogue of this company and select from it. Not one of the people who have had dealings with this firm has ever complained to the KANSAS FARMER.

A California trip is made doubly pleasant if it includes a daylight ride over the Rockies. This is the way of the Colorado Midland. Colonists' rates in effect daily February 15th to April 7th. For full information write Morell Law, traveling passenger agent, 566 Sheldley bldg., Kansas City, Mo., or C. H. Speers, G. P. A., Denver, Colo.

The KANSAS FARMER is in receipt of Vol. XX, Standard Poland-China Record, published at Maryville, Nodaway County, Mo. It is neatly indexed and contains record of pedigreed boars from No. 35080 to 37282; and of sows from No. 83310 to 88666.

A magnificent steel engraving of Hagerman Pass, the most famous mountain pass in Colorado, has been issued by the Colorado Midland Railway. This engraving is 26 by 40 inches and suitable for framing. It will be sent to any address on receipt of 15 cents in stamps by Morell Law, traveling passenger agent, 566 Sheldley bldg., Kansas City, Mo., or C. H. Speers, G. P. A., Denver, Colo.

Which?

- give me a haystack, a hen and a chicken,
- A healthy young farmer with bright-colored vest,
- A good horse, field of corn the pigs to fatten,
- And here's to you—a tale of the West.
- give me a bachelor, sour, nasal, lanky,
- With land that is mortgaged—a house fallen down;
- A pedigree lengthy, a school-teaching yankee,
- And here's to—a tale of a New England town.

Lucretia E. Levett.—

Like our shadows, our wishes lengthen as our sun declines.—Young.

Berry's Golden Rule Poultry Farm, Clarinda, Iowa.

This is the first season for this farm. It has assumed the poultry business recently conducted by Mrs. Berry in connection with the A. A. Berry Seed Co. It has been a breeder of pure-bred poultry for a number of years, and heretofore has made Plymouth Rocks its specialty.

Under the new management this company is offering stock and eggs from eighteen of the leading varieties of poultry. It also manufactures and sells the new "Biddy" incubators and brooders; a machine with some new features that are both labor- and money-savers. This company also carries a full line of poultry supplies.

Orders for anything in the poultry line will receive prompt and careful attention, and be filled to the entire satisfaction of the customer. We strongly advise all those who are interested in poultry and incubators to write for this firm's valuable book, "Profitable Poultry," which will be sent upon receipt of 3 cents in stamps to pay postage. See the ad on page 229. It will pay you to read it. Address Berry's Golden Rule Poultry Farm, Clarinda, Iowa.

THE MARKETS.

Kansas City Live Stock Market.

Stock Yards, Kansas City, Mo., Monday, February 26, 1906. The heavy marketing of cattle continues to be the feature, 43,200 last week, a small decrease from the week before, but 17,000 more than same week last year. Buyers tried to break the market the first of the week, but had no success whatever, and each day's trade closed up firm, until Thursday. The week finally closed 10@15c lower on nearly all classes, but lower prices only applied to what few cattle came in Friday and Saturday, a small proportion of the total receipts for the week. It is beginning to be doubtful whether there will be much more of an advance this spring. May corn has been selling 5c lower than a year ago, which fact, together with the fact that feeders have made money on the stuff already marketed, has had a tendency to put large numbers of cattle on feed for the spring market.

The cattle supply to-day is 10,000 head, and as other markets are lightly supplied, market is strong to 10c higher. Buyers have been favoring the light-weight beef steers, and choice heifers for the last two or three weeks, although, of course, prime heavy steers still bring top prices. The best price was \$5.80 last week top to-day \$5.50, bulk of beef steers \$4.75@5.40. Choice heifers sold at \$5. top cows \$4.50, bulk of heifers \$3.75@4.50, cows \$3@4. Bulls \$2.65@4, veals a shade lower, \$6@7.25. Stockers and feeders were at a point almost out of reach first of last week, and had to come down 15@20c before the close of the week to stimulate much trade. They are strong to-day. Feeders sell at \$4@4.75, stockers \$3.35@4.60. A string of 669 head of pan-handle stockers, 682 pounds, sold straight at \$3.90 on Wednesday, and some high-grade Colorado stockers at \$4.60 Thursday.

Hogs sold Saturday at the highest point this year, but weakness was evident at the finish. The market is somewhat nervous, subject to fluctuations, and some traders believe it has reached the limit. Supply was heavier last week, at 61,000 head, run to-day 6,000, market 10c lower, top \$6.12 1/2, bulk of sales \$5.95@6.10, light hogs \$5.90@6.05 mainly, pigs around \$5.50.

Lambs declined 15@25c again last week, sheep held steady. The quality of lambs is also inferior, and feeders either overlook the great benefit to be derived from the last twenty or thirty days feeding, often 30 to 50 cents per hundred, or they fear the future market. Supply to-day is 8,000, sheep strong, lambs weak. Some lambs sold at \$6.75 Friday, bulk of lambs to-day \$6.10@6.40, yearlings \$5.75@6, 116-pound Western wethers at \$5.80, 112-pound Western ewes at \$5.35, medium to common ewes \$4.25@4.75. J. A. RICKART.

South St. Joseph Live Stock Market.

South St. Joseph, Mo., Feb. 26, 1906. The trade in cattle to-day showed little change from the close of last week. Good, light, and medium-weight steers sold with a little strength, while others held about steady, although there was some dullness on the fairly good, medium, plain, heavy styles, selling around \$4.85@5. The market on cows and heifers was steady to strong, and veals and bulls indicated no special change. The market on stock and feeding steers was the dullest in many weeks, as the snow storm prevailing curtailed demand both on country account and regular dealer account. Good kinds were around 10c lower while the common to fair qualities were 10@15c lower, and in extreme cases more. Following are current quotations: Native steers, \$4@6; Texas and Westerns, \$3.75@5.35; bulls and stags, \$1.90@4.65; veals, \$3.50@7.75; yearlings and calves, \$2.75@3.80; stockers and feeders, \$3.15@4.50.

Owing to supplies of hogs at the five points showing a gain of 11,000 hogs over the number in sight on last Monday, and the further fact that three-fourths of the supplies were centered in Chicago, the market to-day broke very sharply, prices being generally 5@10c lower, with more selling 7 1/2@10c lower than any other way. Prices ranged from \$5.90@6.12 1/2, with the bulk selling at \$5.97 1/2@6.07 1/2. The country should still bear in mind that the upward course of values is very unsatisfactory to the packers and that they will take advantage of increased receipts to break the market, therefore advances should not be followed very closely. Demand here continues very strong, and while receipts are comparatively large, more could be sold to good advantage, as prices are well maintained with other points. The trade in sheep to-day was about steady, but lambs were weak to 10c lower. WARRICK.

KANSAS FARMER.

Established in 1868.

Published every Thursday by the Kansas Farmer Co., Topeka, Kansas

SUBSCRIPTION PRICE: \$1.00 A YEAR

Entered at the Topeka, Kansas, postoffice as second-class matter.

ADVERTISING RATES.

Display advertising, 20 cents per line, agate (fourteen lines to the inch). Continuous orders, run of the paper, \$1.82 per inch per week. Special reading notices, 30 cents per line. Special rates for breeders of pure-bred stock. Special Want Column advertisements, 10 cents per line of seven words per week. Cash with the order. Electrotype must have metal base.

Objectionable advertisements or orders from unreliable advertisers, when such is known to be the case, will not be accepted at any price. To insure prompt publication of an advertisement, send cash with the order; however, monthly or quarterly payments may be arranged by parties who are well known to the publishers, or when acceptable references are given.

All new advertising orders intended for the current week should reach this office not later than Monday. Change of copy for regular advertisement should reach this office not later than Saturday previous to publication. Every advertiser will receive a copy of the paper free, during the publication of the advertisement. Address all communications to

KANSAS FARMER CO.,

116 West Sixth Ave., - Topeka, Kan.



Special Want Column

"Wanted," "For Sale," "For Exchange," and small want or special advertisements for short time will be inserted in this column without display for 10 cents per line of seven words or less per week. Initials or a number counted as one word. No order accepted for less than \$1.00.

CATTLE.

MILK COWS FOR SALE—By V. B. Howey, Route 1, Topeka, Kansas.

FOR SALE—A herd of registered Red Polled cattle at a bargain. I. Sandusky, Route 9, Wichita, Kan.

FOR SALE.—Registered Hereford bulls, 18 to 24 months old, by Prime Rupert 4th; also car high grade yearling bulls. Duff & Sons, Horton, Kansas.

RED SHORTHORN BULL for sale. A. C. Rait, R. 4, Junction City, Kan.

FIVE REGISTERED HEREFORD BULLS for sale. All good individuals. Eight months, 9 months, 1 year, 20 months, and 4 years are their respective ages. Cooper Monroe, Lyons, Kans., R. F. D. 5.

FOR SALE—One registered double-standard Polled Durham bull, 2 years old in March, 1906, color dark red. Will consider trade for females of the same class of stock. Address Jacob J. Yoder, Haven, Kans., R. 2.

FOR SALE—The great show and breeding bull, 198 Duke of Wildwood 148143, that took 4th place at the Kansas City Royal in 1904; also 20 cows and heifers all choice individuals, some show stuff. Geo. Manville, Fawcette, Mo.

GALLOWAY BULLS—4 head, 16 to 18 months old, suitable for service. All registered. Address, C. A. Kline, R. F. D., Tecumseh, Kans.

FOR SALE—Hereford bulls, choice and blocky, aged 8 months to 2 years. J. W. Tolman, Hope, Kans.

ABERDEEN-ANGUS CATTLE and Percheron horses. Stock for sale. Garret Hurst, breeder, Peck, Sedgwick County, Kans.

FOR SALE—Registered Galloways. Bulls, cows and heifers, singly or in car lots. Dean Bartlett, St. Marys, Kans.

HOLSTEINS—Bull calves, 3 to 8 months old, one yearling, extra choice. H. B. Cowles, Topeka, Kans.

PEDIGREED SHORTHORN BULL—3 years old; sire Magenta, who cost \$1,100 at 8 months. Cheap. S. J. Rents, Leavenworth, Kans.

CHOICE registered Shorthorn bulls and heifers, cheap. M. C. Hemenway, Hope, Kans.

FOR SALE—The pure Cruickshank bull, Violet Prince No. 145447. Has been at the head of our herd as long as we can use him. An extra animal. H. W. McAfee, Topeka, Kans. (2 miles west of Kansas Ave. on 6th Street road.)

WANTED—Man to milk 25 cows and separate cream. Will pay \$25 per month, steady job to the right man. Miller Bros., The 101 Ranch, Bliss, O. T.

FOR SALE—One straight Cruickshank bull, 14 months old, dark red, extra good animal. H. W. McAfee, Topeka, Kans.

REGISTERED GUERNSEY BULLS—Ready for service. Also pure-bred Scotch Collie puppies. Dr. J. W. Perkins, 422 Altman Bld., Kansas City, Mo.

FOR SALE—Registered Jersey cattle. Two yearling bulls. Sires. A son of Bessie Lewis, 32 lbs. butter 7 days, and "Financial Count" (Imported); granddam held Island butter record 3 years. Sire's dam holds public milk record of 58 pounds daily, and his dam and Island winner in class for 2 years. Her 4 dams 22 to 28 quart cows, and all winners. Sayda Polo Jersey Farm, Parsons, Kans.

SWINE.

FOR SALE—25 Duroc-Jersey boars, large enough for service and 60 gilts, open or bred. Pigs strong boned and best of color. Prices low. A. G. Dorr, Route 5, Osage City, Kans.

FOR SALE—Bred O. I. C. gilts and some good boars. All good stock. A. W. Thoes, Inman, Kans.

FOR SALE—20 good, strong spring and yearling Berkshire boars that are just what the farmers want. Prices right. Address E. W. Melville, Eudora, Kans.

FORTY HEAD of pedigreed Duroc fall pigs; good color, well built. Write to Chas. Dorr, Route 6, Osage City, Kans.

HORSES AND MULES.

FOR SALE CHEAP and must be sold—Two stallions, one black registered Percheron, sound and good, weight 1,700 pounds; one dark brown coacher, sound and good, weight 1,300 pounds. One clipping machine, can be run by engine, motor, or by tread power. Dr. Hugh S. Maxwell, Salina, Kansas.

FOR SALE—At reasonable prices, Black Imported Percheron stallions. E. N. Woodbury, Cawker City, Kans.

HORSES AND MULES.

AN IMPORTED registered Percheron stallion, No. (43599) 24512, 8 years old, sound, color black. First class horse in every respect. Call or write J. H. French, 718 Kansas Ave., Topeka, Kans.

LEAVENWORTH COUNTY Jack Farm, 10 head of jacks and jennets for sale. Corson Brothers, Potter, Kans.

FOR SALE CHEAP—One gray registered Percheron stallion. Sound and all right. A. W. Thoes, Inman, Kans.

FOR SALE—Registered French draft and Percheron stallions, mares and colts; bays, browns and blacks. One gray stallion, 12 years old, sound and sure. Jake Howard, Hoyt, Kans.

LOST OR STRAYED—Brown mare, weight 1,100 pounds, white spot in forehead, barb wire cut on side, somewhat swaybacked. Suitable reward for return. J. W. Gillard, 836 Highland Ave., Topeka, Kans.

POULTRY.

S. C. W. LEGHORN cockerels and pullets scored by Rhodes 92 to 94 1/2 points. Write for prices. A. F. Hutley, Maple Hill, Kansas.

FINE BLACK LANGSHANS started from \$3.00 eggs. Thirty eggs for 50 cents. Minnie D. Price, Route 3, Paola, Kansas.

BLACK LANGSHAN EGGS—From main flock, 15 for \$1.00; 100 for \$5.00; from pen, \$2.00 for 15. Mrs. Geo. W. King, Route 1, Solomon, Kansas.

SEEDS AND PLANTS.

PURE KHERSON SEED OATS—cleaned and sacked, 50 cents per bushel, f. o. b. Hull. Thos. Williams, Hull, Kansas.

FOR SALE.—Kheron Seed Oats, recleaned, finest quality, 75c per bu.; 10 bu. lots, 60 cents. Sacked, f. o. b. Achenbach Bros., Washington, Kansas.

ONE DOLLAR will buy enough of McCauley's white seed corn to plant seven acres if you send to A. J. Nicholson, Manhattan, Kans.

SELECTED SEED CORN, Hildreth's Yellow Dent, grown in Sumner County, \$2 per bu. Send orders to W. A. Shreter, Argonia, Kans.

SMALL FRUIT PLANTS—For price list, which also contains a full description of the prize strawberry, Cardinal, send to Wm. Brown & Sons, Route 9, Lawrence, Kans.

PEDIGREED SEED-CORN—Raised from Funk Bros.' high-bred Boone County ("Special") White. The seed from which this corn is grown cost me \$5 per bu. It is now acclimated to Kansas. Select ears for sale at \$2 per bu. Address Edwin Taylor, Edwardsville, Kans.

FRUIT TREES half price, best quality. Catalogue free. Baldwin, Seneca, Kans.

PLANTS—Bulbs, shrubs, evergreens, roses, etc. Strawberry plants per 100, 35c; 1,000, \$3.25. Raspberry, 100, 70c; 1,000, \$6. Blackberries, 100, 70c; 1,000, \$5. Grapes, 2 year, 5c. Currants and gooseberries, per 10, 50c. Asparagus, 100, 40c; 1,000, \$2.25. Rhubarb, 10, 30c; 100, \$2.35. Gladiolus bulbs per 10, 10c; 100, 75c. Dahlias, each, 10c; 100, \$5. Hardy herbaceous plants, greenhouse plants, etc. Price list on application. Bonner Springs Nurseries, Bonner Springs, Kans.

FOR SALE—Spring of 1906 seed sweet potatoes, six kinds. Prices on application; also a fine lot of eating sweet potatoes. I. P. Myers, Hayesville, Kans.

SEED CORN—"Hildreth yellow dent easily ranks first as the best producing variety." Bulletin 123. Won three first premiums at Topeka and Hutchinson State Fair 1905. At the Kansas State corn-breeders' contest 1906, won 1st and 2d prize for the most productive acre—103 and 78 1/2 bushels. Write to C. E. Hildreth, corn-breeder and grower, Altamont, Kans.

ANNOUNCEMENTS.

GEO. A. HURON is a candidate for the office of Probate Judge of Shawnee County, subject to the Republican primaries.

BY WRITTEN REQUEST of many voters of the Thirty-seventh Representative district, I hereby announce my candidacy as representative from Shawnee County, subject to the primaries of March 10, 1906. A. E. DICKINSON.

I HEREBY announce myself as a candidate for the office of County Treasurer of Shawnee County, subject to the Republican primaries. G. W. VEALE.

YOUR BALLOT solicited for Register of Deeds at the Republican primaries. ROOSECO C. SQUIER.

SUBJECT to the Republican primaries to be held March 10, 1906, I am a candidate for reelection to the Legislature from the Thirty-ninth district, which comprises the Sixth precinct and additions to the Second ward, all of the Fifth and Sixth wards of Topeka, and all of the country south of the river. ROBERT STONE.

HELP WANTED.

WANTED—Single man on farm, must be congenial with stock. F. M. Linscott, Farmington, Kan.

MISCELLANEOUS.

"THE LAND," a monthly journal for the homeseeker and landowner. 25 cents per year to new subscribers. Address The Land, Cottonwood Falls, Kans.

WANTED—Men to learn barber trade. Don't miss this chance; special offer for limited number. Just opened branch of the well-known Moler System of Colleges, our fourteenth school. All modern facilities. Few weeks completes. Wages paid in finishing dept. Positions waiting our graduates. Catalogue mailed free. Moler Barber College, 6th and Delaware Sts., Kansas City, Mo.

SPECIAL ADVERTISING OFFER—Send your photo, any style, bust, or full figure, alone or in group, with 70 cents in stamps or money order and receive fifteen dainty miniature cabinet photos mounted on pretty, new style folder cards, size about 3 1/2x5 inches, copied separately in bust form from your picture. Original photo returned and copies guaranteed perfect reproductions. Don't miss this special offer. Hit of the season. If more than 15 wanted add 4 cents for each additional print. Cash must accompany order. Address E. R. Gregg, Gregg's Studio, Emporia, Kans.

STRAYED OR STOLEN from my farm, 2 bay horses, weight about 14 or 15 hundred pounds, one with blaze face, glass eyes, feet white; other, one hind foot white, patch of hair off of right jaw. Suitable reward for return. Allen Flesch, Route 1, Garfield, Pawnee County, Kans.

WANTED—At once, sound young men for firemen and brakemen on railways; high wages; promotion; experience unnecessary; instructions by mail at your home; hundreds of good positions now open. Write National Railway Training Association, 620 Paxton Block, Omaha, Neb.

MISCELLANEOUS.

EARN FROM \$47.50 to as high as \$155.50 per month. Wanted—400 young men and sound men of good habits to become brakemen and firemen. Big demand in Wyoming, Nebraska, Kansas, Colorado, and Missouri. Instructions sent by mail; stamp for reply. Northern Railway Correspondence School, Room 202 Skyway Block, Minneapolis, Minn.

LADIES—To do piece work at their homes. We furnish all material and pay from \$7 to \$12 weekly. Experience unnecessary. Send stamped envelope to Royal Co., Desk 49, 34 Monroe St., Chicago, Ill.

WANTED—Your apples to grind. I do custom work every Saturday at my mill on West Sixth St. H. W. McAfee, Topeka, Kans.

WANTED—Men to learn telegraphy. Write J. P. Tighe, care Santa Fe Ry., Arkansas City, Kans.

"THE CEMENT WORKER'S HAND BOOK" tells you how to do all kinds of cement work successfully—walls, floors, walks, tanks, troughs, cisterns, fence posts, building blocks, etc., etc. Second edition. Cloth bound. Sold in all English-speaking countries. Sent to any address for 50 cents. Address W. H. Baker, Seville, Ohio.

Stray List

Week Ending February 15.

Montgomery County—Samuel McMurtry, Clerk. PONY—Taken up by J. F. Shipley, in Parker, Tp., December, 1905, one sorrel pony mare, about 6 years old, white stripe in forehead; valued at \$30.

Week Ending February 22.

Chautauqua County—L. G. Wells, Clerk. COLT—Taken up by D. D. Scott, Peru, Kans., November 23, 1905, 1 dark mare colt, 2 years old, branded L on left shoulder; valued at \$15.

Riverside Stock Farm

Imported and home bred Percheron stallions and mares. Standard bred animals of both sex. Also Shorthorn Cattle. Twenty choice stallions for sale.

When writing mention Kansas Farmer.

O. L. Thisler, Chapman, Kas.

POLAND-CHINA Bred Sows

Have a few choice sows bred, mainly Harmonizer gilts bred to Hot Shot. Write at once to

M. S. BABCOCK, Nortonville, Kan.

Percheron Stallions FOR SALE

Three Percheron stallions:

Col. Carter 27952, grey and weighs 2,000 pounds, by Titus 17122 (36778).

Crichton 28007 by Titus 17122 (36778).

The other a black stallion of same breeding as Crichton.

Look up these horses and you will find their breeding of the best. Write me for full description.

Wyatt Stanley ANTHONY, KANSAS

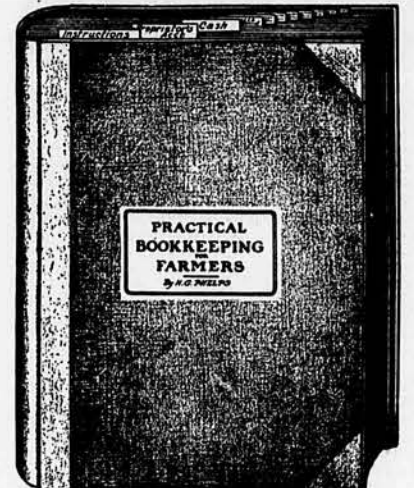
ORPINGTONS

Big Buff Busters.—Winners and descendants of the best stock in the U. S. Exhibition eggs, \$3.50 for 15; \$5 for 30. Infertile eggs replaced. Utility eggs, \$1.50 for 15; \$3.50 for 45; \$5 per 100; 25 utility cockerels, \$1 each.

S. C. BUFF LEGHORNS

Best Color, Shape and Style in the West. Exhibition eggs, \$2 for 15; \$3 for 30. Infertile eggs replaced. Utility eggs, \$1 for 15; \$2.50 for 45; \$5 for 125. Cockerels scored by Rhodes.—\$5 to \$10; 25 utility cockerels \$1 each.

W. H. MAXWELL, 1220 QUINCY STREET, TOPEKA, KANS. All stock line bred and farm raised.



The farmer's guide to success in farming. 200 pages 10x13 inches. 20 pages of instructions and illustrations. A full set of farm accounts worked out. The remainder of the book for use in keeping accounts. The results of a whole year's business are shown on one page which will show the farmer the cause of success or failure. Will last the average farmer three years. Price \$3.00. For a short introductory period the price will be \$2.00 delivered. Descriptive circular and testimonials free. Send us ten 2-cent stamps and we will mail you our latest book—a 50-page book on Business Writing and Lettering; or we will send you both books for \$2.15, regular price \$4.00. Address H. G. Phelps & Co., Roseman, Mont.

50 BULBS
25 Cents.



Will grow in the house or out of doors. Hyacinths, Tulips, Gladioli, Crocus, Fuchsias, Oxalis, Tuberoses, Begonia, Jonquils, Daffodils, Chinese Lily, Dewey Lily, Gloriosa, Lilies of the Valley—all postpaid, 25c. in stamps or coin. As a premium with these Bulbs we will send FREE a big collection of flower seeds—over 200 kinds.

HILLSIDE NURSERY, SOMERVILLE, MASS.

SEED CORN

IT ALWAYS PAYS TO PLANT THE BEST!

Ratekin's "Pride of Nishna", yellow, "Lowa Silver Mine", and "Imperial" white; Three Best varieties in the World; Pure bred, thoroughly graded and always Grows, Planted by thousands of farmers everywhere for quarter of Century. Earliest big eared corn in existence; won more prizes than all other sorts. It's guaranteed to please you. Change your Seed and grow bigger yields: It's the kind that PAYS to PLANT. Our big fine illustrated Catalog of all Farm and Garden Seeds is FREE. Write for it today; a postal card will bring it to your door. Address:

RATEKIN'S SEED HOUSE,
Shenandoah, Iowa.
(The largest Corn Seed Growers in the World.)

Your Crops Will Be Money Makers

If you sow our Hardy and Reliable Northern Crown Seeds. We are growers of new and improved varieties of Seed Grain, Seed Corn, Seed Potatoes and of pure and hardy strains of Vegetable Seeds. Our stock of high grade Timothy, Clover Seed, Turkestan Alfalfa, Dwarf Kasez Rape, etc., is the most complete. Clover-Grass mixtures for permanent Pastures and Meadows are our specialty. Also Hardy Small Fruit Plants and Ornamental shrubs. Reasonable prices. Best railroad connections. Special Seed rates to the west.

Large Illustrated Catalog Free. Farmer Seed Company, Fairbault, Minn. 34-4th Street.

TREE PROTECTORS

75 cents per 100
\$5 per 1,000



As valuable in summer against sun-scald, hot winds, etc., as they are in winter against cold and rabbits. Recommended by all leading Orchardists and Horticultural Societies. Send for samples and testimonials. Do not wait until rabbits and mice ruin your trees. Write us today. Wholesale Nursery Catalogue now ready. Send for copy. Agents wanted everywhere.

HART PIONEER NURSERIES
Box 17, FORT SCOTT, KANS.

GOLDEN YELLOW CALLA LILY, 5 Bulbs.

50 KINDS FLOWER SEEDS 10c.



Asters, Balsam, Cannas, Calliopis, Nasturtium, Morning Glory, Fanny, Larkspur, Job's Tears, Poppy, Golden Glow, Snapdragon, Cosmos, Pink, Zinnia, Verbena, Monkey Plant, Sweet Rocket, Primrose, Ice Plant, Petunia, Castor Oil Beans, Portulaca, Candytuft, Sweet Peas.

5 CHAMPION BULBS.

The Summer Hyacinth, Golden Lily, Humming Bird, Gladiolus, Giant Tuberoses, Baby Breath Oxalis, all this beautiful collection of seeds and bulbs only 10c. in silver or 5c. stamps to pay the cost of packing and postage. Order quick and be sure of this grand offer—only 10 cents.

CHARLESTOWN NURSERY, - CHARLESTOWN, MASS.

SEED PRICES CUT IN TWO

That's just what Salzer is doing—distributing among planters everywhere countless bushels of his hardy, Northern Grown Pedigree Seeds at one-half their real value. Take advantage of this unusual offer by sending *to-day* for a free copy of the Book of

Salzer's Bargains

and getting your year's seeds before the supply is exhausted. Cabbage, Beets, Radish, Onions, Corn, Beans, Tomatoes, also Salzer's famous farm seeds, such as Oats, Speltz, Barley, Potatoes, Timothy, Clover, Wheat, etc.—all of them the cream of last season's wonderful growth on our seed farms.

LUSCIOUS RADISHES

Everybody loves a tender, juicy radish! And we want everybody to have them! Send this notice to-day and receive free Bargain Seed Hook and sufficient Radish seed to keep you in luscious radishes all summer long! Remit 4c and we add package of Cosmos, the most fashionable, serviceable, beautiful annual flower.

JOHN A. SALZER SEED CO.,
Lock Box 56, La Crosse, Wis.

Live Farmers Meet at Stillwater, Okla.

The college town of Stillwater has recently been the "Hub" of Oklahoma agricultural and live-stock interests. Five hundred citizens representing every county in Oklahoma save one, and many parts of the Territory have been in attendance at the college short course in stock-judging and seed-selection, which is working harmoniously with sessions of the Oklahoma Improved Stock-Breeders' Association, and a public sale by its members of pure-bred horses, cattle, and hogs. It is doubtful if any one of these valuable features alone could have induced such a representative gathering from all over the Territory. But with a program full of good things for the breeders of horses, cattle, hogs, sheep, and poultry, has brought the live-stock talent of the new State—soon to be—the best gathering in its history. The grain and cotton farmers simply could not stay at home with such features as the Oklahoma Corn-Breeders' Association, and some of the best talent from the Department of Agriculture at Washington, and whole volumes of new experimental information fresh from the experiment station. The Oklahoma people attain by leaps and bounds the position that it has taken years for the older States to work out. The whole plan and program worked out as only such affairs can where the management has the details perfectly in hand as have Director Fields and Professor Burtis and their able corps of assistants at this station. The whole week was crowded, if not overcrowded, with good things, all too good to miss. The Oklahoma Shorthorn Breeders' Association, the meeting of which had been called for this week, found the time so taken up with the sale in which so many were interested as sellers or buyers, that it was decided to adjourn the annual meeting, to take place at the Midland live stock sale, at Oklahoma City, March 14-16, 1906.

Professor Spillman, Department of Agriculture, Washington, D. C. developed one of the features of the convention in his presentation of the subject of "Farm Management" and "Problems of Heredity" in live-stock breeding. Dr. Webber, specialist in plant-breeding, got very close to the stock-breeders and farmers with his address on the improvement of the corn and cotton plants by seed selection, both of which were nicely illustrated by some excellent lantern slides. J. F. Stodder, of Burden, Kans., had a very excellent paper "The Value of a Pedigree," which was well received by the breeders.

The attendance this year is several times over 100 per cent better than last year, and what is more encouraging to the management and close interest manifest by those in attendance. Whether at the Improved Stock-Breeders, at the Improved Corn-Breeders, or at a session of an institute on improved feeding methods, they were always improvers of some kind.

Unfortunately Colonel Harris could not reach here until the very last of the session, but as he was here last year and is quite well known nearly all remained to get the good things that he always has for his hearers.

F. S. Kirk, of Enid, was here all the week with his pets, the Air Ship and Council Chimes. Mr. Kirk and his horses have taken care of the interests of the light horse and added very much to the interest of the meeting. H. W. Avery, of Wakefield, Kans., was here to champion the cause of the draft-horse for the Oklahoma farmers, and, judging by the interest they take in the drafter, Mr. Avery is not going to have a very hard time in pushing the claims of the big horse in Oklahoma.

The consignors at the sale, while not enthusiastic on the prices realized for their stock are very much pleased with the outlook for good pedigreed stock of all breeds.

That the stock-breeder is well liked in Oklahoma is beyond question. At the last session lively interest was manifested in the location of the next meeting and nearly all of the good towns of the Territory vied with each other in the amount of good things they would do for the next annual meeting of the Improved Stock-Breeders' Association. After a lively consideration of the matter, it was decided to take the next annual meeting to Enid, and the prediction is freely made that this wheat-belt location will witness the largest attendance and the best contribution of high-class stock to the public sale, held in connection with the meeting, that has ever taken place in the Territory. Here we have the Improved Stock-Breeders' Association, Corn-Breeders' Association, The Improved Breeders of the Wheat Belt, and the Oklahoma Shorthorn Breeders' Association; all of which are prospering wonderfully in the work they have undertaken. Truly Oklahoma is great.

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J. B. ARMSTRONG & SON, Shenandoah, Ia.

Live vs Dead Rabbits.

EDITOR KANSAS FARMER:—For some years I have been interested in the utilization of by-products, and I have been wondering if there is not some way in which we can get more out of our common rabbits.

My idea is that we ought to trap them with the Wellhouse or similar traps, and ship them to the cities in crates like live chickens. This would be advantageous in various ways, as follows:

1.—It would give the consumer this variety of game in the very best condition possible. It would be fresh, free from gun-shot wounds, and would be a much more sanitary article of diet.

When we have a cold spell, the hunters go out and shoot a whole lot of rabbits, and ship them to the cities. As soon as the weather gets warmer, these rabbits are soon unfit to eat. Yet, no doubt, many poor people eat them at the expense of their health. The writer is quite fond of rabbit, and has lived in the city for some years, but he never could muster up enough courage to buy any of the rabbits for sale at the meat-markets. He lived at Mena, Ark., seven years ago, where there were wild turkeys, deer, black bear, and other kinds of game, and he thinks a nice, fat rabbit is as nice as venison. But it must be prepared properly, and to have it trapped is one of the first requisites. There is no doubt in my mind but what the flesh is tainted when a lot of rabbit-fur is shot into the body, as is the case with the common shot-gun. I have been told that in dressing a mutton, if the hand which holds the wool touches the flesh, it will taint the meat.

2.—It would make it so much nicer for the commission man to have the rabbits shipped alive. He would not have so many losses, and could pay a better price. Then there would be the satisfaction of handling this game in a sensible way.

3.—It would enable farmer boys to make some money out of this game in a much easier way than it is done now. It would be so much nicer to go around of a morning and take the rabbits out of the traps which are scattered over the farm. If they did not care to ship them, they could make arrangements with the local huckster, who, no doubt, would be glad to help the cause along.

I wonder how many farmer boys there are in this State who will be willing to take this matter up, and make it a success?

GEO. S. SOMERS.
Johnson County.

Stored Energy.

Will a mandrel 4 feet 1 inch long by 1 1/2 inches in diameter, weight 31 pounds and a 95-pound balance-wheel, 21 inches, 2 1/2 inch face, run as long as a straight mandrel 3 inches in diameter, of the same weight, if run at the same speed, if the belt fly off?

Nemaha County. OTTO C. WEYER.

In reply to the above I will say, that the 1 1/2 inch shaft carrying the 95-pound balance-wheel, should run longer after power is taken off than the 3-inch shaft without balance-wheel but weighing the same as the combined weight of the 1 1/2 inch shaft and fly-wheel. The length of time that either will run after the power is removed, depends upon the energy stored up in the rotating parts during the time that the power is applied. The amount of this energy depends not only upon the weight of the parts, but upon the distance of the center of weight from the center of the shaft. For this reason, the combined shaft and fly-wheel, having its center of weight farther from the center of the shaft, will store up more energy per pound of weight than will the large shaft run without fly-wheel.

This answer presupposes that the two shafts run at the same speed and that they are under the same conditions as to proper size and condition of bearings, and that each is properly adjusted.

E. B. MCCORMICK.

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