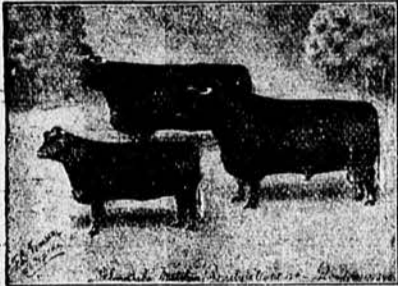


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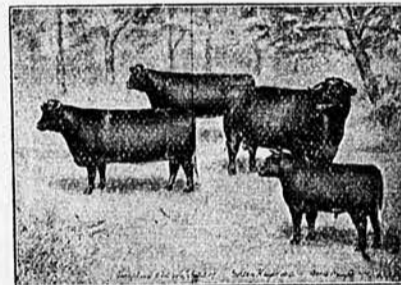
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LORD MAYOR was by the Baron Victor bull, Baron Lavender 2d, out of Imp. Lady of the Meadow, and is one of the greatest breeding bulls of the age. Laird of Linwood was by Gallahad out of 11th Linwood Golden Drop. Lord Mayor heifers bred to Laird of Linwood for sale. Also bred Shetland ponies. Inspection invited. Correspondence solicited. A few young bulls sired by Lord Mayor for sale.

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Agricultural Matters.

DIGESTION EXPERIMENTS WITH KANSAS FEEDS.

Bulletin No. 103—June, 1901. Chemical Department Kansas Experiment Station.

J. T. WILLARD, M. S., Chemist.
R. W. CLOTHIER, M. S., Assistant Chemist.

(Continued from last week.)

EXPERIMENTS WITH ALFALFA HAY.

The object of these experiments was to determine the digestibility of Kansas-grown alfalfa, and any variations in digestibility due to the stage of growth at which it was cut for hay.

The hay was all cut from the first crop of the season growing on the college farm, the first cutting being made when the plants were approximately ten per cent. in bloom; the second, when the plants were approximately fifty per cent. in bloom; and the third when they were in full bloom or a little beyond full bloom.

The hay from each cutting was well cured and of excellent quality when fed. The digestion experiment was performed upon the same steer in each case, which was a three-year-old grade Hereford and a good feeder. After determining about how much hay the steer would eat up clean at a feed which was about 7 pounds, he was fed 8 pounds at each feed and two feeds a day during the experiment. The steer was somewhat wild when first put in the stall, and so the first period of preliminary feeding was extended to ten days. By this time he had become quite docile, and during the remainder of the feeding periods he was exercised daily by being led around the barn-yard for about half an hour.

The other preliminary feeding periods were of six days each, and the periods of exact collection and observations were six days each, also.

The third cutting was fed first, and the second immediately after, these two experiments extending from June 22 to July 19, 1898. The steer was then allowed liberty for nine days before beginning the experiment with the first cutting. During his confinement in the stall, which was provided with wire screens, he was further protected from annoyance from flies by a thin muslin blanket the greater part of the time. The results of the experiments appear in the tables. [The tables giving details of the experiments are not given here, but the information desired by the practical feeder will be found in the tables in the summary at the close of the paper.]

For practically all feeding purposes, the most important nutriment to be considered is protein. Admitting this to be the case, the results obtained in these experiments with alfalfa are intensely interesting. It will be seen from the table that the amount of digestible protein in the air-dry hay of the first cutting is 13.24 per cent., while in the second cutting it has diminished to 11.90 per cent, and in the last cutting it is only 10.43 per cent. The proper stage of growth at which to cut alfalfa, then, is of vital importance to the alfalfa grower and feeder. The most distinguishing quality of alfalfa is its high percentage of protein. In this respect the best quality of hay would be produced by cutting the alfalfa when it is just beginning to bloom. On the other hand, a larger yield per acre of hay, and possibly of protein also, would be produced from a single crop by cutting when the plants have obtained full growth. At the same time, experience has proved that a greater number of crops in a single season can be secured by cutting at an early stage of growth, so that the total yield per acre for a given season would be in favor of the early cutting.

The evidence, then, both in regard to quality and quantity of hay produced, is vastly in favor of the early cutting, and feeders and alfalfa growers should bear this in mind. For feeding pigs, dairy cows, calves, and fattening steers, the early cut hay is undoubtedly worth considerably more per ton than that cut when the plants have reached the stage of mature growth.

Another point of interest to be noted is the variation in digestibility of the same nutrients in the different kinds of hay. Generally speaking, the difference is in favor of the early cut hay, though in the case of fiber the late cut hay has a slight advantage. It will be seen that

in the early-cut hay 78.52 per cent of the protein is digestible, while in the late-cut hay 76.7 per cent of the crude protein is digestible. The difference is much more marked in the case of the pure proteids, 77.55 per cent of this nutrient being digested in the early-cut hay, while in the late-cut hay the figures drop to 71.66 per cent. On the whole, all the nutrients in alfalfa hay are highly digestible when it is compared in this respect with other feeds used for roughage. It also compares favorably in this respect with many of the concentrated feeds, such as the grains, mill feeds, etc., and when we consider the fact that there are only a very few of these feeds that contain as much digestible protein as alfalfa hay, and then remember the immense yield per acre in a season, with the ease of production, we are inevitably led to the conclusion that alfalfa is the most profitable feed a Kansas farmer can produce.

EXPERIMENT WITH HAY FROM BUFFALO-GRASS.

In the western half of Kansas practically all of the forage and a large share of the winter roughage for stock is obtained from buffalo-grass, or what is now popularly termed "short grass." Hence, the digestibility of this grass is an important as well as interesting subject to the western feeder and stock-grower.

During the latter part of July, 1899, a young man, a graduate of the college, and who was at that time in Logan County, was commissioned with the task of cutting enough buffalo-grass to answer the purposes of a digestion experiment. After experimenting upon various methods of cutting the grass, he decided upon the lawn-mower as the most perfect and rapid means of securing a fair sample of the grass. After about ten days of hard labor with this machine he secured about 300 pounds of well-cured grass, which was shipped to the station at Manhattan. This hay was of excellent quality.

The hay was fed to a yearling steer, grade Shorthorn, and weighing 710 pounds at the beginning of the experiment. He refused to eat the hay when it was first given to him, although he was fed nothing else during two days. The hay was then mixed with alfalfa hay, and the mixture was eaten very readily. The proportion of alfalfa hay was gradually reduced until, in about six days, the steer began eating the pure buffalo-grass hay. He was then fed five days upon this hay as a preliminary period of feeding, after which he was fed five days for the actual digestion experiment.

At the beginning of the preliminary period of feeding, all the hay was thoroughly mixed and sampled for analysis, and the remainder accurately weighed out into nine-pound lots, to be fed at the rate of two feeds per day, nine pounds at each feed.

The steer was exercised daily during all of the experiment except the five days when the dung was collected. The table shows the detailed results.

Compared with all other feeds used for roughage, except hay from the leguminous plants, hay from buffalo-grass contains a remarkably high percentage of digestible protein. In this respect it ranks but a very little below clover hay and is much above millet, timothy hay, oat hay, orchard-grass hay, wheat straw, and corn stover.

It is remarkably rich in ash, but this ash seems to be very indigestible; however, this does not affect its value as a feed to any great extent. When all of the digestible nutrients it furnishes are considered, its value should be placed on a level with that of red clover hay.

EXPERIMENT WITH PRAIRIE HAY.

Prairie hay is one of the chief products of the Kansas farmer in many parts of the State. Their capacity to withstand the vicissitudes of Kansas climate give our native grasses a value that less favorable qualities in other respects have not outweighed, so that many acres are still preserved which would otherwise be devoted to the production of cultivated crops.

Very little has been done to determine the digestibility of prairie hay, and consequently little is known about it. In order to throw some light upon this subject, we performed a digestion experiment, following the same general methods that have been outlined previously. The hay was fed to the same three-year-old Hereford steer used in the experiments with alfalfa hay, and the preliminary feeding and the actual test were each of six days' duration.

The hay was cut near the 1st of August, 1898, and was of good average quality. On August 16 it was run through an ensilage cutter, thoroughly mixed, and a sample taken for analysis. The

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steer had been eating very nearly ten pounds of hay at each feed, and so 120 pounds of the cut hay was weighed out in ten-pound lots, to be fed in six days at the rate of two feeds per day. The steer was exercised daily, as in previous experiments. The results obtained are presented in the table.

The most striking fact presented in these results is the very low quantity of digestible protein contained in the prairie hay, there being less than 1 per cent. The digestible carbohydrates and fat in the prairie hay are a little higher than in wheat straw, but the digestible protein is about the same, so that, as a feed, prairie hay should be classed with wheat straw according to these results. These conclusions are so different from the general idea concerning the feeding value of prairie hay, that we determined to repeat the experiment before publishing any results. The feeding had been done and the samples had all been prepared for analysis when the chemical laboratory was destroyed by fire, and in this catastrophe the samples from this experiment, as well as those from an experiment with sorghum hay, were lost. It is the intention of the department to repeat both of these experiments as soon as possible. It is to be hoped that further investigation of prairie hay will show that our first experiment was upon an anomalous example.

EXPERIMENT WITH KAFFIR-CORN STOVER.

In this experiment a good average quality of stover was used, which was prepared by first cutting and shocking, and later heading, the Kaffir-corn. It was fed to a two-year-old grade Hereford steer which was a good feeder. The steer was fed during a preliminary period of seven days, the purpose of which was to determine the amount he would eat in a day, as well as to clear the digestive tract of all other feed. It was found that the steer would eat between 5 and 7 pounds of stover at a feed, if he was fed twice a day. It was therefore determined to feed him 7 pounds at each feed during the experiment proper.

After the preliminary period the steer was fed seven days, during which time an accurate record was kept of the amount fed and the amount left uneaten; the dung was all collected, weighed, and sampled in the manner previously described. A sample for analysis was also taken from the stover left uneaten. The steer was exercised by being led around the barn-yard for a short time each day.

The table shows the results obtained, and if they be compared with the corresponding figures for the digestibility of the best corn-stover, it will be found that, while the total digestible nutrient of Kaffir-corn are slightly less in amount, the digestible protein is somewhat larger, thus giving a narrower nutritive ratio, with probable equal value in feeding. It is superior in all nutritive respects to average field-cured corn-stover.

EXPERIMENT WITH KAFFIR-CORN.

Since grains can not be fed alone, the determination of their digestibility can not be accomplished by as simple a means as that of those feeds that can be fed alone. They must be fed with a fodder of known digestibility, and the digestibility of the combination determined in the manner already described. Having ascertained the total amount digested from the mixture, we subtract the amount furnished by the fodder, as calculated from its digestibility, from the total, and the difference is the amount furnished by the grain. In this case it is obvious that if feeding the grain with the fodder alters the digestibility of the fodder, an error will be introduced in our calculations of the digestibility of the grain, but this is the best that can be done at present.

In this experiment the grain fed was Red Kaffir-corn ground to a fine meal. For roughage Kaffir-corn stover was used, the digestibility of which had been determined in the preceding experiment. As in that, the preliminary feed-

ing was one of seven days, and the actual experiment seven days also.

The steer was the same one as used in the preceding experiment. He was given 5 pounds of the meal and 5 pounds of stover at each feed, and was fed twice a day. He ate practically all of the meal, there being only 8-10 of a pound left out of a total of 70 pounds. This amount being so small, it was not analyzed.

Examination of the table shows that the fat of the Kaffir-corn meal is apparently entirely indigestible. In this respect it is markedly inferior to corn-meal, and is also inferior to that feed in its percentage of digestible protein and carbohydrates.

EXPERIMENT WITH SOY-BEANS.

The interest now being taken in soy-beans in Kansas should make this experiment of more than usual interest to farmers. Because of the high percentage of protein contained in them and the comparative ease with which they may be grown, they promise to become one of the most valuable of the nitrogenous feeds available to Kansas farmers. A digestion experiment with them affords a reliable basis for estimating their value in comparison with other feeds rich in protein.

The beans were of the Early Yellow variety, and were fed as meal to the same steer that was used in the experiments with Kaffir-corn stover and Kaffir-corn grain. The meal was fed with Kaffir-corn stover like that which had been used in the two experiments just described.

The steer did not relish the bean meal at first and refused to eat it, but by mixing it with Kaffir-corn meal and gradually reducing the proportion of the Kaffir-corn meal he was at length induced to eat about 5 pounds of pure soy-bean meal with 5 pounds of Kaffir-corn stover at each feed. He was fed upon the meal for a few days at this rate, and then for seven, constituting the actual experiment. The results obtained are shown in the table.

These results are certainly of great interest and also of the highest importance to the feeder. They present the fact that soy-bean meal contains a higher percentage of digestible protein than any other feed except cottonseed-meal. Not only is this true, but it is very rich in fat, the most valuable food principle next to protein, and this fat is practically all digestible. The protein also has a very high digestion coefficient, while, on the other hand, the digestibility of the nitrogen-free extract is rather lower than that of most other concentrated foods. As carbohydrates can be obtained cheaply in nearly all other feeds, their deficiency is of little or no importance. The problem of securing cheap protein has been the most difficult one for Kansas feeders to solve, and the absence of it has probably caused more loss in feeding than any other one thing. Where alfalfa can be grown the problem has been solved; but there are still many localities where farmers have experienced extreme difficulty in getting alfalfa to grow, and in such cases the value of the soy-bean should be quickly recognized. Next to alfalfa, soy-beans will be the cheapest source of protein to the Kansas feeder, if he grows them upon his own land. They can be grown at a cost of from fifteen to eighteen dollars per ton, and, if valued on the amount of digestible protein furnished, a ton of soy-beans is worth as much as one and one-third tons of linseed-meal, according to our digestion experiment. Results of other stations reduce this advantage somewhat, but they still leave soy-beans worth more than linseed-meal.

SUMMARY.

In the succeeding tables the important data of the digestion experiments described in this bulletin are collected for easy reference. With these is given a table showing the digestibility of some common feeds most likely to be compared with the ones experimented upon. To facilitate this comparison, in stating our results we have included a column headed "carbohydrates." This

includes the fiber and the nitrogen-free extract.

It will be seen that, with reference to alfalfa, all of our samples are better than the average composition given for comparison.

The buffalo-grass hay is very much superior to ordinary prairie hay of this region in its percentage of protein, and also far superior to timothy hay in this respect.

Kaffir-corn stover is superior to field-cured corn-stover in the digestibility of all of its food principles, but Kaffir-corn meal is noticeably inferior to corn-meal.

The soy-bean meal is seen to be one of our most concentrated feed stuffs, being scarcely inferior to cottonseed-meal in protein, and exceeding it in fat, and being considerably superior to old-process oil-meal in both these respects.

The station will continue its investigations upon the digestibility of the characteristic feeds of the State, especially those which have received little or no attention elsewhere.

ly reiterated boast that the crop of 1901 will exceed that of any other year as well as all expectations.

Chicago makes the price of wheat, and Chicago is ruled in her price-making by the condition of the crop of the world. Last year the total wheat crop of the United States was 522,000,000 bushels.

And there are other factors in the situation worthy of attention. On March 1 the invisible wheat, as reported by the government, was 30,000,000 bushels less than it was at the same date in 1900.

Besides, there is going to be a great shortage in the corn and oat crops. In some of the Kansas markets corn is worth to-day more than wheat, indicating a home demand for the last named that will still further lower the export surplus.

This much we have said in reply to a Kansas farmer who asks the Journal to advise him in regard to holding his wheat. It might be said further that under any conditions there is little danger in holding wheat for a later market.

poles as above described would cost about \$1 each, planting and wiring 25 cents each.

Table with 2 columns: Item (24 poles, 170 pounds of wire, Insulators, Erection) and Cost (\$24.00, 2.10, .24, 6.00).

Total cost of one mile of line... \$32.34

In a community where the farms average 160 acres each, an average of 3 'phones per mile of line should be possible.

The Clover Hay Worm.

E. A. POPEHOE, KANSAS EXPERIMENT STATION.

From specimens and inquiries reaching the Entomological Department of the Kansas State Experiment Station regarding the clover hay worm (Pyralis costalis), it seems that this insect is more abundant than formerly in Kansas.

This worm attacks clover and alfalfa hay, both in the mow and in the stack, cutting up the leaves into chaffy pieces and webbing the mass together by abundant cases of silken threads, which it is the habit of the worm to spin at all times.

TABLE showing coefficients of digestibility, or the percentage of each principle that is digestible, the total amount of a given principle being 100 per cent.

Table with columns: Feeding Stuff, Ash, Crude protein, Pure Proteids, Fiber, Nitrogen-free extract, Carbohydrates, Fat, Total dry matter.

TABLE showing the percentages of digestible principles, or the pounds per 100 pounds, in the feeds named, the amount of the air-dry feed being 100 per cent.

Table with columns: Feeding Stuff, Water in the air-dry substances, Ash, Crude protein, Pure proteids, Fiber, Nitrogen-free extract, Carbohydrates, Fats, Total dry matter.

TABLE showing digestible food ingredients in pounds per 100 pounds of certain feeding stuffs. Adapted from Farmers' Bulletin No. 22, United States Department of Agriculture.

Table with columns: Feeding Stuff, Water, Protein, Carbohydrates, Fat.

Should Farmers Hold Their Wheat?

In discussing the position of wheat in the markets at the beginning of the new crop year the Kansas City Journal says editorially:

"A thing difficult to understand is why almost everybody has joined in a movement to exaggerate the wheat crop and to lower its price.

els less than there was a year ago. No doubt the invisible wheat at the opening of the present harvest was fully 40,000,000 bushels less than it was a year ago.

How They Build a Farmers' Telephone.

I am one of a company of thirty-three members that was organized almost two years ago, and known as "The Farmers' Independent Telephone Co., of Reeds' Mills, Ohio, which followed the following plan of organization, which I will give for the benefit of Mr. C. and others.

The poles we used were mostly second-growth white oak and chestnut, being 21 feet high and having a cross arm on them, which gives better service than a bracket tacked on the side.

It is stated that in eastern Kansas

Channels.

He—Now let me hear from you every day, dear, while you are away.

She—All right. If I don't have time to send it through the post-office, I'll send it through the bank.—Harper's Bazar.

"ELI" Baling Presses advertisement featuring an image of the press and descriptive text about its features and availability.

Important News!

Send us Your Name

and P. O. address on a card and we will give you some information about Wagons that will benefit you greatly. DON'T BUY ONE until you hear from us.

The Stock Interest.

THOROUGHBRED STOCK SALES.

Dates claimed only for sales which are advertised or are to be advertised in this paper.

October 7, 1901—Newton Bros., Duroc-Jersey swine, Whiting, Kans.

October 8-10, 1901—American Berkshire Association Sale at Kansas City.

November 21, 1901—Ernst Bros., Shorthorns, Tecumseh, Neb.

November 20-22, 1901—National Hereford Exchange, E. St. Louis, Ill.

December 10, 11 and 12, 1901—Armour-Funkhouser, Herefords, Kansas City.

December 18, 1901—H. C. Duncan, Shorthorns, Kansas City.

January 28 to 31, 1902, for Sotham's Annual Criterion Sale, at Kansas City.

March 25-27, 1902—National Hereford Exchange, Chicago, Ill.

April 22-24, 1902—National Hereford Exchange, Kansas City, Mo.

May 27-29, 1902—National Hereford Exchange, Omaha, Neb.

June 24-26, 1902—National Hereford Exchange, Chicago, Ill.

Live Stock Conditions on the Ranges.

The secretary of the National Live Stock Association announces that semi-annual reports received from all Western States and Territories regarding conditions of the live stock industry on the range, indicate a most prosperous year for the industry as a whole. The winter losses were lighter than for many years, but heavy spring storms in some sections caused about the usual spring losses, but the average will not reach over three per cent. Many sections report losses from predatory wild animals greater than usual, showing that this pest must soon be met in some way. Another cause of loss has been thieves, who have been unusually bold and successful during the last few months, especially on the horse ranches. Reports from round-ups show an average above the usual calf crop. At the present time the only sections threatened with drought are southern and eastern New Mexico and southern Arizona. There is still time, however, for summer rains to relieve these conditions. The northern half of Montana and western North and South Dakota suffered from a late spring and drought, but these conditions have lately been relieved and the range feed, though late, was never better. There has been a large movement of stock cattle from the southwestern to northern ranges, approximating 150,000 head. The movement of western cattle has been very much lighter than usual, being principally from Pacific coast States to Montana and Wyoming. Many sections report the range badly crowded and early in the spring there were many clashes between sheep and cattle owners for possession of the range, but the good rains and consequent improvement of the feed on the range has temporarily relieved this condition. Prospects are considered good for a heavy movement of western range grass cattle commencing about a month earlier than usual and probably continuing late into the fall. Prices on stock cattle have been from \$1.50 to \$2.50 per head lower than last year. Strictly high grade cattle are steady with a year ago and in demand.

SHEEP.

The sheep situation is not so satisfactory. Reports all indicate a general expectation of lower prices, due to the crowded condition of the ranges and the absolute necessity of reducing the flocks to fit the range conditions. The lamb crop has been unusually heavy, owing to the mild winter and favorable weather at lambing time. The movement from the range to market will commence earlier than usual on both cattle and sheep, and a heavy run of sheep and an average run of cattle is expected.

RANGE BEEF.

Cattlemen expect to market a larger per cent of their cattle as beef than usual, owing to the good feed that has prevailed in nearly all sections. Owing to the general favorable conditions of the beef market, range prices are holding steady and cattlemen are looking for steady prices in the fall at about an average with last year. The strong demand on the Pacific coast for all kinds of stock has diverted many cattle in that direction that usually come east. The movement in this direction will continue this fall and is caused by the increased home and Asiatic demand for meats. This is particularly true of Nevada, Utah, Idaho, Arizona and western Wyoming. Quite a number of Montana cattle, mostly fat stuff, have also gone west instead of east, to market, and more will go in the fall. The movement of horses is unusually large owing to the generally remunerative prices prevailing in the east, and the ranges are being cleaned up of many bands

which only a few years ago were considered worthless and a nuisance.

The situation in the corn States of the Mississippi and Missouri valleys is too uncertain at this time to enable a prediction as to the feeder demand in the fall. According to reports received at this office, the number of cattle on summer feed is very much lighter than usual and the markets will be compelled to depend to a certain extent upon grass cattle. There are an unusual number of cattle on pasture in Kansas and Nebraska and grass conditions are reported to be very good in most sections, although the late warm wave has threatened the situation somewhat.

RANGE DEMAND FOR PURE-BRED BULLS.

A feature of the western range situation has been the large demand for pure-bred and high-grade bulls and rams. This demand seems to be satisfactorily increasing, and as the western range man usually desires this class of animals in car-load lots and prefers them already acclimated, it may be said that the demand is coming principally from ranchmen who are putting in pure-bred herds for the purpose of breeding the stock needed on the ranch. This accounts for the unusual demand for female stock. The western range breeder realizes thoroughly now that he must breed a first-class grade of beef cattle and mutton in order to compete with the small ranchman, and plans are being made to accommodate this demand on a liberal scale.

The outlook for the live stock business on the whole is good. While much depends upon the growing crops of corn and hay, stockmen are not looking for any advance in stockers and feeders, but they do anticipate a steady market at about last year's figures. Should the corn crop be unusually large these prices will be much firmer, but should it fall short they will expect to take something off the present prices.

The Duroc-Jersey, from the Producer's Standpoint.

O. S. SWEET, BEFORE THE IOWA SWINE BREEDERS.

Many years ago when I first saw a herd of Duroc-Jerseys I must confess I was not favorably impressed with their general appearance, and especially their color was not to my notion and taste. I had been educated up to the idea that the black hog was the only ideal and standard to go by as a producer of pork. Having heard that the Durocs were very prolific, I resolved to try them in a guarded way, and after two years' trial I discarded the blacks altogether in favor of the reds. Having bred them pure since 1888, I believe they, as a breed, are second to none. I do not think that I have the color craze so bad that redeeming features can not be seen in any other breed, but from the standpoint of a breeder and producer of pork I can honestly say that I would not change to any other breed.

Years ago, of course, they were not bred up to the standard of the present time, and their admirers were few and far between. Look at them at the present time; there are probably 40 breeders of Durocs to-day where there was 1 fifteen years ago, and the demand is harder to supply at the present time than ever before. There must be something underneath that red coat that is profitable for the pork producer to have or the breed would soon pass into obscurity. There is no question but what they are of the most prolific breed of hogs. By referring to my records, covering a number of years, I find the sows usually farrow an average of 9 to 10 pigs and save 6 to 7, the pigs usually being remarkably even in size and general appearance. The dams are abundantly able to suckle them. The pigs are active and will hold their own as grazers, and when finished for market will account for every bushel of corn that they have eaten. As proof I will submit the following experience: I had 85 culls out of 121 April pigs. They averaged 116 pounds October 1st. I sold them on December 26th, their average weight being 264 pounds. They brought the extreme top on the market. These were high grade Durocs, or the third generation from black sows. One year I had pigs farrowed late in October, November, and some as late as Christmas. They had usual winter care and were turned out to grass in April. They had no other feed but grass until in August and they were finished out the last of October. Their average weight was 287 pounds. I sold a boar to a hog raiser and the man got a crop of pigs from him the following year. He sold a car-load at about eleven months of age and their average weight was 340 pounds. These hogs had not been

forced in any particular way, and when finished walked to the station (several miles) without fatigue. The party told me the get of that boar made him more money than any boar he had ever used. This cross was from black sows.

Just a few words about crossing breeds. If a male of any particular breed is crossed on another breed keep on in the same line of males. There can be no permanent success in crossing back and forth, using a Poland-China, then a Berkshire, then a Duroc, or a Chester White, and to cap the climax use a Red Tamworth. This manner of breeding is to be condemned, and can not bring success. Those who breed along these lines are not market toppers and generally have to make an occasional clean-up and start anew. Select your color of breed and stay by it. Should any one cross breed, and it is a Duroc-Jersey boar that is selected, follow him up with another year after year on the grades and success is certain. It must also be remembered that there are Durocs, good, bad and indifferent, which can also truthfully be said about all breeds of hogs. I believe I can look with as much charity on other breeds as any one else. I admire a good hog regardless of color, and can see their good qualities crop out. I also admire a man who is ready at any time to fight as it were, for his favorite breed. After all my experience with the Durocs I must say for myself, give me a Duroc first, last and all the time. They are prolific, have good suckling qualities, are kind, gentle to handle and fatten at any age, with large size and traits that many admire. The Durocs have come to stay, and will occupy the first rank as a profitable hog to feed for the general farmer.

Doings of the National Live Stock Association.

EDITOR KANSAS FARMER:—For the purpose of advising the members of the National Live Stock Association of the work that has been accomplished during the first half of the current year, it has been deemed advisable to make the following brief report.

To carry out the intention of several of the important resolutions adopted at the Salt Lake convention, President Springer early in the year appointed the following special committees:

Committee to take steps to test the validity of the law by which a reinspection and inspection fee is levied upon inter-state shipments after said shipments have been granted a clean bill of health by the government:

Paul McCormick, Billings, Montana.

H. A. Jastro, Bakersfield, California.

Joseph M. Carey, Cheyenne, Wyoming.

Peter Jansen, Jansen, Nebraska.

Frank M. Stewart, Buffalo Gap, South Dakota.

Charles Gresswell, Denver, Colorado. Committee to draft bill providing for government inspection of woolen goods:

C. O. Stocklagger, Boise, Idaho.

T. C. Powers, Helena, Montana.

Mortimer Levering, Lafayette, Indiana.

E. S. Gosney, Flagstaff, Arizona.

Dwight Lincoln, Milford Center, Ohio. Committee to draft bill providing for land exchange:

A. C. Huidekoper, Meadville, Pennsylvania.

John B. Castleman, Louisville, Kentucky.

John Sparks, Reno, Nevada.

R. M. Allen, Ames, Nebraska.

F. C. Lusk, Chico, California.

DOUBLE INSPECTION.

In carrying out the first resolution the committee experienced no little difficulty in getting a shipper to give the time and submit to the annoyance of making a test case. Finally, Mr. Ed. H. Reid of the Flato Commission Company of Omaha consented to being made the defendant in the case. He shipped twenty-seven cars of cattle from Hereford, Texas, on the 18th of June, having previously secured a federal bill of health. He submitted to a reinspection by the Colorado inspector at Amarillo, Texas, under protest, but positively refused to pay the fee. The Colorado & Southern road brought the cattle into Denver and they were taken on to Wyoming without unloading in this State except to feed. An arrangement has been made whereby the Colorado Veterinary Sanitary Board was to swear out the complaint, but when Reid arrived here the Board, for some unknown reason, positively declined to make the arrest. It is understood that this decision was brought about by the influence of Governor James B. Orman, Billy Wilson and F. P. Ernest, who strongly advised against the case. After several days of waiting the district attorney's office made the complaint. Reid was

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arrested and convicted in the criminal court and sentenced to six months in the county jail. Messrs. Talbot, Denison and Wadley, attorneys for the National association, then applied to Judge Moses Hallett, in the Circuit Court of the United States, for a writ of habeas corpus, which was argued on the 29th ultimo and the opinion reserved until Monday, the 1st inst. On this date the court denied the writ and remanded the prisoner back to the custody of the sheriff of Arapahoe County. The association's attorney then saved an exception to the opinion, gave notice of an appeal to the Supreme Court of the United States and asked that the prisoner be released on bail. This was ordered and bonds fixed at \$500. In making the ruling the court held that the federal statute governing inspection on inter-state shipments of live stock was not exclusive but could be supplemented by State inspection, the same as in instances where one State may quarantine human beings when attempting to enter the State from an infected State. He, however, made no reference to the right of State officials to collect fees for inspection, which point is a strong one in the contention of the association.

The result of the hearing is quite satisfactory to the committee, as it desires to get the case before the Supreme Court of the United States at the earliest possible date, and it is hoped a fa-

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CURES SORE SHOULDERS,
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Goulding & Co., City Stock Yards,
DENVER, COLO., Jan. 10, 1900.
DEAR SIR:—After an experience of over twenty years in the care & handling of live stock, I feel justified in recommending your Balmoline as the BEST HEALING SALVE that has been put on the market. Horsemen and others cannot make any mistake in it's use.
GEO. L. GOULDING,

vorable opinion will be given which will finally dispose of this annoying question in every State of the Union. This could not have been done had any other decision been rendered.

The cost of prosecuting this case is considerable, but if the practice be ultimately abolished it will be the means of annually saving hundreds of thousands of dollars to the stockmen of the country.

The other two committees are at work drafting bills covering these matters, which, with several other measures the association desires to have introduced early in the next session of Congress, will be considered and passed upon at the first session of the next annual meeting, to convene in Chicago on December 2d.

GRAZING FOREST RESERVES.

Our general counsel in Washington, Judge William M. Springer, has been quite successful in all his efforts before department officials, the latter expressing the greatest consideration for our association and a desire to do everything possible for the stockmen of the entire country. Secretary Hitchcock of the Department of the Interior, while not ruling in favor of promiscuous grazing upon forest reserves, has modified the original order to such an extent that present conditions and limited grazing is satisfactory to most sections.

Complying with the request of the association this department has assigned one of its leading experts in forestry to the western range States for the purpose of making a thorough investigation into the question of grazing stock upon forest reserves, and report as to how this shall be carried out so as to conserve the best interests of the stockmen as well as of the government.

FENCING GOVERNMENT LANDS.

The secretary was also addressed upon the subject of fencing government lands, which has created considerable trouble in the West during the present year. There being a statute against fencing government lands, the question is most difficult to handle to the satisfaction of all concerned. It is hoped, however, that there will be no further trouble and that the entire matter will rest in abeyance until after the adjournment of the next congress, when it is believed some action will have been taken in reference to individual control of the arid lands.

LIVE STOCK CENSUS.

Secretary James Wilson has agreed to recommend in his next annual report to Congress, an annual classified census of live stock, with semi-annual publication of these statistics, and will ask for the necessary appropriation to carry on this work. This is most important to all stockmen, and with the support of western members no doubt the order can be secured.

The secretary has also sent a corps of botanists into the range States for the purpose of investigating poisonous plants with a view of arriving at the most feasible means of their destruction. This also was at the request of the association made at Salt Lake City.

DECEMBER MEETING AT CHICAGO.

President Springer has just returned from Chicago, where he arranged the final details for the December meeting. The convention will be held in the Studebaker theater and the sessions will be so arranged that delegates may attend the meeting for one part of the day and the International Live Stock Exposition during the remainder. Secretary James Wilson of the Department of Agriculture, and Dr D. E. Salmon, chief of the Bureau of Animal Industry, have been invited to deliver addresses to the delegates, and 1,000 students from neighboring agricultural colleges one afternoon on pathological subjects.

Mayor Carter Harrison of Chicago and Governor Yates will welcome the delegates on behalf of the city and State.

The transportation companies have taken up the matter of rates and there is no doubt about a one fare for the round trip being granted. It is believed that the annual meeting of this association and the International Live Stock Exposition will attract a quarter of a million strangers to Chicago during the first week of December.

C. F. MARTIN, Secretary.

Denver, Colorado.

Attention Swine Breeders.

EDITOR KANSAS FARMER:—Please say to the Poland-China breeders that the subscriptions to the Kansas City show have been good in numbers, but too small in amount, and that we have not yet raised half of the amount needed. Other States are doubling Kansas in their subscriptions. There are a good many breeders that have not responded,

some have asked for information and gotten it, others have promised both by letter and word, but do not comply. Now we must have all subscriptions in by the first of August. That is, we must know the amount that will be given. We can not wait longer than that date. We should have all amounts known by July 20th so we can complete our premium list and get it out. If the Kansas breeders want to do their share in this they must do it now and quick. If any have not received blanks, a postal card will get them in 24 to 48 hours. We know some breeders are simply overlooking it, and ask all to delay no longer. If any are in doubt as to how much they should give, if they will communicate with me at once I will advise them. I will stop the haying if necessary to do it.

H. M. KIRKPATRICK.

Walcott, Kans.

Entries for Coming Shorthorn Shows.

EDITOR KANSAS FARMER:—Please announce that the premium list and entry blanks for the four national shows to be held at Hamline, Louisville, Kansas City, and Chicago are ready for distribution, and will be sent to all who wish them. The entries for Hamline show will close August 20, for Louisville September 10, Kansas City October 1, and the time for closing entries for Chicago show will be announced later. Breeders who intend to exhibit at these shows are urged to send their entries at once, so that ample time may be given to prepare the official catalogue of show cattle, and in order that the managers of these fairs may know how many cattle to expect and what provision to make for their comfort.

For premium lists and entry blanks write, B. O. Cowan, Assistant Secretary, Springfield, Ills.

Appreciative.

EDITOR KANSAS FARMER:—Permit me to commend your "Stock Breeders' Annual." Your address on the "Relative Value of Feeding Stuffs" should be in the hands of every man who owns even a horse or cow, so that he may feed intelligently.

I have long wanted just such a table, did not know where to get it in so convenient a form. A. B. MATTHEWS.
Kansas City, Kans.

[The above is a sample of many letters received at this office. While the edition lasts copies of the Annual can be had for 2 cents each to pay for postage and mailing.]

Eli Benedict on Science and Dry Weather.

EDITOR KANSAS FARMER:—I will try to give my report to you. We gave a report in Medicine Lodge yesterday—Fourth of July—wet or dry. I tell you Mr. Editor it takes nerve to go on cultivating for it is so dry the fish are dead in the Medicine River, caused by their having no water to take a bath in. Our grass is rather dry, but not dead. It looks a little tough to a stranger, but we old-time fellows just put up with it, knowing that nature will have rain just fifteen minutes before everything is dried up excepting the early corn craze; and those science fellows, that take up with everything that comes out. O, it makes a fellow tired to read about using science in farming in western Kansas. As Governor Stanley says, one must have some cows with farming out here. That is science. It is a lottery to farm here. You can farm by science one year and win and farm by the same thing next year and lose. Say, I just poked that neighbor of mine in the ribs every time I see him. His 200 acres of "corn early" wilted. It looks just like a schoolma'am on a hot day. I show him my pretty fields of Kaffir-corn, green, clean and growing like mad. I will go fishing now. Got all my work done and water enough to carry my cane and Kaffir-corn three weeks before they suffer for rain. There is just a few things you must do in Kansas and leave your science business to warp up in the sun, for it surely will. Double list your ground, plant corn early, plant it late, plant thick, plant thin; in some fields plant and sow—the two best friends western Kansas ever had—sorghum and Kaffir-corn—the same way. The first time after seeded and harrowed I put 4 big horses on the cultivator and let it down deeper than you list. Tore up the earth with the hind shovels. What weeds you leave behind go after with a hoe and leave the rest to nature, and go fishing. If dry, the little Kaffir-corn and the cane will make you feed without any rain after July. That is the kind of science you want to use, and it is the only kind that does any

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Fitted for the Grand State Fair Circuit, and the Great Berkshire Show.
To be held at **KANSAS CITY, MO., NEXT OCTOBER.**
Attend this Sale of Prize-winners to be held at the New Kansas City Stock Yards Sale Pavilion, KANSAS CITY, MO., on

THURSDAY, AUGUST FIRST, 1901,
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50-- HEAD OF BERKSHIRES OF SHOW QUALITY--50
Will Be Sold to the Highest Bidder For Cash.

Only Strictly First Class Show Animals have been pledged to this sale, and the high character of the consignors is ample guarantee that, in point of extra quality and choice breeding, the Berkshires sold will be the tops of the best herds, and fitted up in the best condition for exhibition. All who want Berkshires that are fitted to win at the Fall Fairs are cordially invited to attend this sale and secure the best bargains that will be offered this season. The Association assures you of a square sale, first-class stock, and that the highest bona-fide bid will buy the hogs. The bids you send by mail will, as heretofore, be handled entirely in the interest of the sender, who will be treated as fairly as if he was present in person to make his own purchases. If you cannot attend this sale send bids by mail to the Clerk, **Charles F. Mills,** Secretary American Berkshire Association. For Catalogue, address **CHARLES F. MILLS,** Springfield, Ill.
AUCTIONEER—**COL. JAMES W. SPARKS,** MARSHALL, MO.

good out here, where it forgets to rain when you science fellows call for it.

The weeds always take our moisture—knock them out with a hoe or corn knife. Don't cut the roots off of corn or Kaffir-corn when it is so dry as it is now. Sled and harrow as long as you can until it gets too big, then cultivate and use the hoe. I have corn, planted in March, tasseling out and earing and suffering, O so much, for a drink of water. Corn planted in April is not so dry and the corn planted in June is knee high, green and growing fine. It is all lottery, I do not know which of these fields will win out. The fields of cane and Kaffir-corn are all rolling up their backs, but I have done all I can for them. **ELI C. BENEDICT.**
Medicine Lodge, Kans.

Talk About the Cereals.

The following, which was sent out from Chicago on the last day of June, expresses the views of the position of wheat which the board of trade would like to have prevail. It is given here to inform producers of wheat of the tactics of those who are likely to think prices should rule low until a considerable portion of the wheat crop is out of first hands:

To-morrow, July 1, the wheat world enters upon a new crop year, especially from a statistical point of view. In reality, the new crop has for a month or more been a dominant factor in shaping the current of the world's markets, so that the statistical data beginning to-morrow is without especial significance, except as marking the dividing line between old and new crops. Practically the world's wheat harvest is gathered between June 1 and October 1, the great bulk of it, all outside the southern hemisphere, and July 1 is generally recognized, in consequence, as the date on which the new crop year begins. Therefore it is new crop prospects that we must deal wholly with from this time forward. The close of the crop year of 1900-1901 finds the world in possession of fairly normal supplies of old wheat, or, of what are termed, old reserves. The beginning of the new crop year finds the world, as a general proposition, with full average new crops, if not above. In America we have a larger crop than ever before, over 700,000,000 bushels, perhaps it will turn out 725,000,000 bushels or over, if present prospects are not dimmed by unforeseen unfavorable climatic influences. This means a supply of 175,000,000 to 200,000,000 bushels in excess of the crop of 1900, about 40 per cent more. The visible supply is some less than one year ago, but larger than either two, three, or four years ago. The conclusion is therefore, that America will have for sale a greater surplus than ever before in her history.

European reports suggest a marked falling off only in one country, that Germany, and at best she will not require over 30,000,000 bushels extra from outside sources. France is put down as producing a crop equal to that of 1900, in round numbers of 310,000,000 bushels, but will require more foreign wheat this year because she has not the 40,000,000 bushels reserve she carried over last year. France imports on an average about 30,000,000 bushels of wheat annually, Germany not far from 50,000,000 bushels. The estimates this year do not vary greatly from this. Both impose import duties; France of 36.8c per bushel, Germany of 22.7c per bushel. So far as America is advised all the other wheat producing countries of importance have very fair crop prospects. The world's annual production on an average is 2,500,000,000 bushels, its consumption nearly that. In 1898 it produced 2,900,000,000 bushels, this, in

round numbers, statisticians disagreeing. This year there is a promise of at least 2,750,000,000 bushels, and should the southern hemisphere have good luck the coming crop season perhaps more than that. Of the total America will produce over 25 per cent, or rather the United States. If we add in the Canadian yield North America will produce quite a little over 25 per cent of the world's wheat harvest of 1901.

The winter wheat crop of the United States is being harvested under the most favorable conditions, dry and hot weather finishing the grain rapidly for market. Reaping and threshing returns show an enormous quantity of excellent quality. The spring wheat crop is making fast, promises to vie with the winter in both quantity and quality, that is the promise is for a big comparative crop of excellent quality. In round numbers, the United States will have exported during the crop year of 1900-1901 a total of wheat and flour as wheat of 215,000,000 bushels. Her largest exports were about 226,000,000 bushels in 1891, her next largest 222,000,000 bushels in 1898. On a crop of 523,000,000 bushels in 1900 she exported 215,000,000 bushels, which suggests that on a crop this year of 700,000,000 bushels and over, she can furnish if wanted perhaps 300,000,000 bushels. So the alleged shortages in France and Germany, both of which countries draw from other nations beside our own, notably Germany, amounts to but little as a suggestive price factor when measured by the admitted liberal world's production this year and the normal old reserves to be carried over. India has reentered the export field, Australia's last crop was a good one, and Argentina on her coming crop promises a growth in acreage.

It is not surprising, under these conditions, that the wheat markets of the world are tending downward rather than upward. There is little or no question first-hand marketings will be commensurate with the large productions, especially in America, this notwithstanding the fact producers are all well to do financially. These same producers no doubt realize, however, that there is so much of a surplus to be sold between now and the crop of 1902. It is history, and crop movement every year is in keeping with production—if that is large the movement is large, and vice versa. Continental markets as well as England always buy more or less wheat at this season, and have this year. But, in the light of supplies in the world, it is unreasonable to assume they will buy urgently; more natural to assume they will buy as their necessities require. The amount afloat to them is in a better position to command than to be commanded. Speculation is rather narrow, that an injury to prices.

Like wheat, corn and oats are tending to weakness. Crops of each are backward and there is no doubt the oats yield will be some 100,000,000 bushels under 1900. Very good weather from this time forward may give us a good corn crop. Visible supplies are considerably in excess of last year, but receipts are running light, as are the exports.

Advertise Cow-Peas If You Have Them.

EDITOR KANSAS FARMER:—We are receiving daily, requests for the addresses of firms who have cow-pea seed for sale. People want them immediately. Can't you get some ads in the KANSAS FARMER? We are also receiving many calls for alfalfa hay. It would be a good thing if you could advertise this for sale.
H. M. COTTELL.
Kansas State Agricultural College.

The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the Kansas Farmer. Give age, color, and sex of animal, stating symptoms accurately, 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 post-office, should be signed with his full name, and should be addressed to the Veterinary Department, Kansas Farmer, Topeka, Kansas.

Dislocation.—(Rye Neck). Last August I bought a mare about six years old from a herd of wild horses. In trying to break her she fell with her neck under her shoulder and crooked it. I immediately hitched a team to her halter and pulled the neck straight. I then turned her in the pasture with the rope on the halter dragging. In running she stepped on the rope and again jerked her neck down to her side as before. The veterinarian here said it would be all right after a time, and a proper application of his liniment, but it is as bad as before. Can anything be done for it after so long a time?
JAMES C. TYLER.

Great Bend, Kans.
Answer.—You should have placed heavy splints or boards on each side well padded and bandaged for a few days, but it is probably too late now and would likely kill her.

Scours.—Will you kindly tell me what to do for pigs that have the scours. I have over 100 pigs running with the sows. They have the run of a 20 acre pasture, 12 acres of which is in alfalfa and the rest timber. They are fed swill, made from wheat shorts, night and morning, and have access to fresh water all the time. There are now about 15 scouring and they are getting very thin.
R. SAMELSON.

Mariadahl, Kans.
Answer.—Give 2 ounces of dried sulphate of iron, 1 pound of hyposulphite of soda, and 1 pound of wood charcoal in their food once a day.

Eczema.—I have a black mare seven years old that rubs out her mane until it sticks straight up, otherwise she is a fine looking mare, slick and in splendid condition.
A. J. MOXLEY.

Madison, Kans.
Answer.—Apply with a sponge three times a week, 1 part of zemoleum to 5 parts of water.

Spavin.—I have two mares that have spavins on their right hind legs. One has a bone and also a bag spavin on the same spot. She will stand on three feet all the time, and when she lies down on that side I have to turn her over before she can get up. Is very lame when she starts out, but after going about 40 rods she gets better. The other mare just has a bone spavin. It is small as yet, but still it makes her lame. Can you tell me what to do, as they are getting weaker all the time?
A. M. MASON.

Pittsburg, Kans.
Answer.—Apply the following as directed: 1 ounce powdered Cantharides, 6 drams Biniodide of Mercury, and 2½ ounces of hogs lard mixed. Clip off the hair around the entire joint and apply the blister with the hand. Leave on thirty-six hours and wash off and grease. Repeat every eight days for 3 applications.

Curing Uncle Sam's Money.

It has been stated that Uncle Sam's greenbacks are wearing out fast and a big reserve fund is to be established, to be kept in the treasury vaults until it is more thoroughly cured than the notes now in circulation. Orders were given the other day for the clerks of the Bureau of Engraving and Printing engaged in printing greenbacks to work one hour extra each day beginning July 1. One hundred million dollars in greenbacks are to be accumulated and will be laid aside to get completely dried out before being issued. They will be one, two, and five dollar notes, and it is estimated that it will take about three months to print them. Whenever possible it is the policy of the Treasury Department not to issue greenbacks until they have been stored six or eight months. By that time they are well seasoned and are in a condition to withstand considerable handling. During the last two years, however, the unprecedented demand for notes, especially those of small denomination, has not permitted the department to lay aside any quantity. Most of those printed during that time have been put into circulation within one or two months after being received from the

big money mill. Any one accustomed to handling paper money can instantly detect the difference between green and seasoned bills. A note that has been thoroughly cured is crisp, firm, and tough, while a green note is thick, soft and mushy. After the latter has been in circulation it becomes rough like a piece of blotting paper and is soon unfit for currency. It rarely lasts more than a year, while the life of a well-seasoned note is anywhere from two to ten years. Bills issued in the sixties have come into the redemption division in good condition, showing that they were well cured before being sent out. Greenbacks stored for six or eight months after being printed get tough, the paper seems to get thin and some chemical action takes place that "sets" the ink.—*Brooklyn Eagle.*

A Poland-China Dispersion.

That magnificent herd of pure-bred Poland-China hogs, owned by Hiram Smith, of Colwich, Sedgwick County, Kansas, is to be disposed of. Having sold his farm, and in order to give early possession, Mr. Smith is compelled to close out at public sale his personal property, which among other things includes his entire herd of 181 pure-bred Poland-China hogs, consisting of 3 herd boars, 26 brood sows, and 150 spring farrowed pigs. Of this offering Mr. Smith says:

"I have been in the pure-bred hog business a number of years and have selected and bred the very best, and I think I have now one of the best herds in the State, in both individual merit and breeding. The herd is headed by the two fine boars, Black Chief 42357, he by Black Joe 28603, and out of Bettie Risk 77228; and Ideal U. S. 42259, he by Chief of All 45389, and out of Edith Ideal 110750; and assisted by Perfect I Am 50767, Vol. XXIII, he by Anderson's Perfect 47275, he by Perfect I Know 46493, and out of Bess King 121124. The sows are as equally well bred. The pigs are the offspring of the above sows and boars."

The sale will be held on Tuesday, July 16, 1901, commencing at 10 a. m. Trains arrive at Colwich over the Missouri Pacific from Wichita at 8 a. m. and via Hutchinson at 10.30 a. m. Catalogues will not be ready before the sale, but bids may be sent to Col. J. N. Harshberger, care of Mr. Smith.

The Kansas Farmer of March 21 had the following to say about this herd:

AN IDEAL POLAND-CHINA HERD.

"A recent visit was made to one of the ideal Poland-China breeding establishments of the West by a Kansas Farmer man. It is the Maple Grove Herd owned by Hiram Smith, Colwich, Sedgwick County, Kansas. It is a rare thing to see such a grand lot of hogs of such mammoth size and at the same time possessing an even and smooth finish. For quality, size, and style and mathematical uniformity, it is quite doubtful if this herd has an equal in the West. Finding such was a most agreeable surprise to the writer, and to his mind the herd was an ideal one in almost every respect, and it certainly is an object lesson to swine-breeders generally. Everything about the pens and building, as well as the records of the animals, is under a perfect system. There is no chance taken regarding perfect identification. Mr. Smith was scored for this one weakness—modest publicity. The herd boars are, Ideal U. S. 42259 O., an even, 3-year-old bred by Vivion & Alexander, a grandson of Chief Tecumseh 2d, and Ideal Black U. S. The aged herd boar is Black Chief 42357 O., bred by R. S. Cook, by Black Joe by Lawrence's Perfection; dam, Bettie Risk by Corwin U. S. The young herd boar is Perfect I Am, Vol. 23 O., bred by James Malns, sired by Anderson's Perfect 23772 S., by Perfect I Know 19172, and out of the famous Anderson's Model. All of these boars have proven very valuable sires. The youngsters are so even and uniform, just like so many peas in a pod. The leading herd sows, all recorded in the Ohio Poland-China Record, are, Worldbeater Beauty 109484, Dolly P. 105020, Lady P. 106604, Black Bessie 104244, Banner's Pride 103706, Maud S. 107344, Darkness Model 104958, Native Maid 107888, Susie Butler 50815, Bessie A. 114476, Bessie B. 114478, Faultless 115676, Black Beauty 114630, Dolly A. 115402, Graceful A. 115892, Graceful B. 115900, Graceful C. 115606.

Gossip About Stock.

Any stock breeder or feeder who has not received a copy of the 40-page Stock Breeders' Annual, may have it by sending a 2-cent stamp to defray the cost of mailing to the Kansas Farmer, Topeka, Kans.

The Union Hill Farm of Improved Chester White Swine, owned by D. L. Button of North Topeka, Kans., is reported as doing nicely. A fine lot of March and May pigs are now for sale, also a few gilts bred for September farrow.

N. B. Sawyer, of Cherryvale, Kans., a successful breeder of Duroc-Jersey swine, reports recent representative sales, among which were 3 boars to M. H. Alberty, Cherokee, Kans.; 3 gilts and 2 boars to P. & G. Pollock, of Indian Territory. Mr. Sawyer has for sale a number of young sows for September and October farrow, also 100 spring pigs.

On August 1, 1901, at Kansas City, Mo., there will be held a great public sale of 50 prize Berkshire hogs fitted for State fair shows this fall. The sale will be held under the management of the American Berkshire Association. Only strictly first-class show animals have been pledged by the leading breeders of the country for this sale. For catalogue address Chas. F. Mills, Springfield, Ill.

The Kansas State Agricultural College has received from George Groenmiller & Son, Coburn, Kans., a pure-bred Red Polled bull. This bull is a remarkably good animal and comes from the best families of Red Polled in the United States. His sire weighs 2,100 pounds and is the winner of many prizes. His grandsire was the greatest Red Polled show bull of his day. The dam of the college bull is a heavy milker

LEAN'S ALL STEEL HARROWS AND LAND ROLLERS

Lean harrows make fat harvests. They do more work and do it more efficiently than any other harrow. They tear up the ground, smooth it for sowing, harrow in the seed, kill the weeds after the crop comes up. The teeth are adjusted to suit any condition of the soil. By a touch of a lever they are instantly cleared of trash without stopping the team. The most substantial and finest finished farm implements made to-day. Made entirely of steel, light and durable. Both the spiked tooth and spring tooth harrow will save enough in a year to pay for itself.

If you want a Land Roller that will save its price in a single season, get a Roderick Lean Steel Land Roller.

ROBINSON & CO., General Agents,
Kansas City, Mo.

RODERICK LEAN MFG. CO. MANSFIELD, OHIO

and has never been beaten in the show ring.

A public sale of Shorthorn cattle that will interest many readers of the Kansas Farmer, is that to be made from the herds of L. J. Hitchcock and the Wm. Windle estate at Falls City, Neb., on November 11th. With Scotch bulls in service, and with numerous Scotch tops running through the entire female portions of these two good Southeastern Nebraska herds, it is a foregone conclusion that large interest will be manifested in the event by breeders of good cattle in Kansas. The Kansas Farmer hopes to present full details of this sale of 50 good Short-horns at the proper time.

Apperson & Lamb, Tecumseh, Neb., are to be found now at the front of the procession with their high-class herds of Duroc-Jersey and Berkshire swine. At the Nebraska State fair last year, they captured some of the best ribbons in both sections, and now they are planning what is to be a right brisk campaign again. They have plenty of first-class pigs on either side of the fence, and they have an eye to the good territory in Kansas tributary to their section. Requests for information will be promptly answered. Kansas Farmer readers will see this firm's business announcement a little later.

Mr. C. A. Stannard, proprietor of the Sunny Slope home of the Herefords, Emporia, Kans., writes the Kansas Farmer in which he claims date for his next annual sale of 200 head of Hereford cattle to be held at Kansas City, February 25, 26, and 27, 1902. Other prominent breeders identified with this sale, which is to be even a superior lot to those sold last February, will be from the well known herds of Gud-

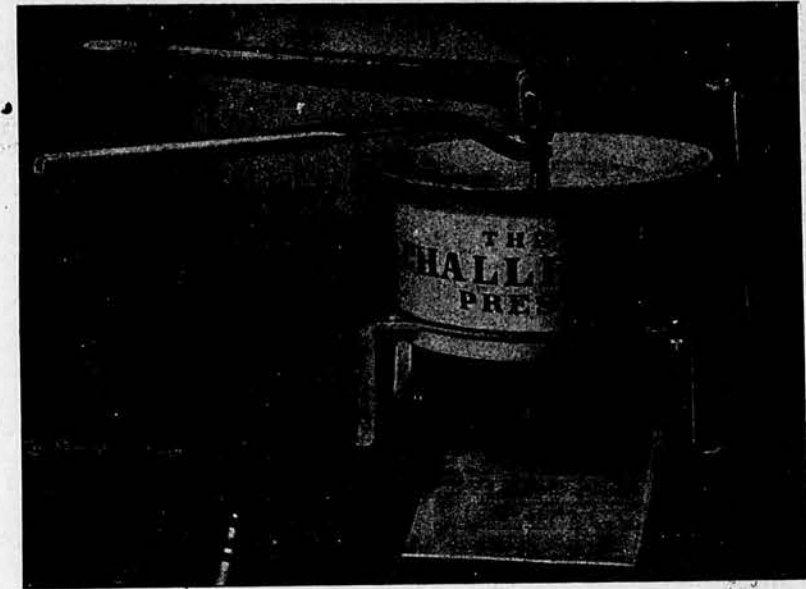
gell & Simpson, Scott & March, Frank Rockefeller, O. Harris, Walter Waddell, Stewart & Hutcheon, Mrs. C. S. Cross, and the Sunny Slope consignment. The number will be less than last year, but the offering will be made up of animals of quality.

Ideal Black Chief, the wonderful son of Missouri's Black Chief, who now heads the Poland-China herd of Dietrich and Spaulding, Richmond, Kans., is making a record as a sire of bors that is hard to equal. He is only two years old last 10th of May and the number of high finished boars to his credit is marvelous. During the last few weeks this firm has made sales in Kansas, Oklahoma, Indian Territory, California and Europe. The popular breeding of their Poland-Chinas combined with a first-class individual and square dealing is making these gentlemen a great record. One of the sales of which they are justly proud was made of six of their fine Poland-Chinas which were shipped to Finland, in Europe. Kansas is supplying the world with choice goods and animals, and Finland surely is fortunate in getting some of her finely bred swine.

Publisher's Paragraphs.

Drilling machinery is advertised in our columns by the well known and reliable manufacturers, Kelly, Tannehill & Woodruff Co., Waterloo, Iowa. Their machinery is suitable for drilling for water, oil, gas, and mineral. Explorers of the deep earth should consult them as they invite correspondence and inspection. They are equipped also for all kinds of repair work.

When writing advertisers please mention Kansas Farmer.



The Challenge fruit press and colander illustrated herewith is a modern helper in domestic economy. The ladies' great trouble in fruit working time, in preserving fruits of all kinds for jellies, butters, and catsups, with the ordinary colander, is staining and burning the hands, waiting for the fruit to cool, which is then much harder to work. With the Challenge the fruit is worked hot, thus saving time, fuel, labor, and fruit.

Any one who has ever seen the machine operated will not be satisfied with a common colander. It is full of convenience, utility, and merit, up-to-date in every way, and makes the over-worked housewife laugh for very joy when she real-

izes the long, hot day's work is cut to a short hour.

It saves all the juices for jellies, and all the pulp or fleshy matter for sauces, jams, butters, etc. It seeds berries, seeds and removes the skins from cranberries, gooseberries, currants, tomatoes, and grapes, at the rate of fifty gallons per hour. Apples cooked with peeling and cores will pass through the machine, without a particle of waste, at the rate of forty gallons per hour.

This little machine does the work so much better and quicker than you could possibly do, through any strainer or colander, and saves the unpleasant results from working hot fruit with the hands. See the advertisement in this paper.

An Angler's Reputation== California.

Is the one State where one may tell a big fish story and be truthful. Off Coronado, for instance, fish come easy. Not only that, but they're big. A lazy man wouldn't enjoy fishing there—he'd be kept too busy. There would be no time to read his novel, smoke his pipe and drink from his jug—(water, of course)—between bites. Our illustrated books tell something about California. Why not go? Low rates this summer.

T. L. KING, Agent The Atchison, Topeka & Santa Fe Ry.,
TOPEKA, KANSAS.

GEO. W. NULL, Odessa, Mo., LIVE STOCK AUCTIONEER.

Have sold for, and am booking sales for leading stockmen everywhere. Write me before claiming dates. I also have Poland-China Swine, Bronze turkeys, B. P. Rock, and Light Brahma chickens. 150 birds, and a lot of pigs ready to ship. Write for Free Catalogue.

The Home Circle.

GOOD-NIGHT.

Good-night, Heart's-Burden, I'll come again
When the east grows white with dawn
But now my body claims rest from weary quests,
As the prize of the race it has won.
The sighing winds blow, so soft and low,
As the night crowds out the day,
While the fairy of sleep speeds upward
And carries me far away.

Good-night, Heart's-Worries, I'll leave you too
For since the day begun
More and more you have pressed me sore
With the work that must be done
But now I feel o'er my senses steal
The magic of fairy fae,
For the spirits of dreams with their angel wings
Are wafting my thoughts away.

Good-night, Heart's-sorrows I shall some time say
And lay me down to my rest
I shall sleep secure but for sorrow no more
Will there be a place in my breast,
The shadows will creep and the bright stars weep
O'er the farewell kiss of the day
But the Bird of my Life will wing upward
And carry my soul away.
Bridgeport, Kans. Inez Wheeler.

THE MAN OF THE WEEK.

Justin S. Morrill.

(Morrill Act approved July 2, 1862.)

Justin Smith Morrill was born at Strafford, Vermont, April 14, 1810. The Century Cyclopedia of Names, published in 1895, describes him as "an American Republican politician," and adds: "He was a member of Congress from Vermont, 1855-67, and has since occupied a seat in the United States Senate. He is chiefly known in connection with the so-called Morrill tariff, which was reported by him in the House in 1861."

But the cyclopedia is wrong for once—or has become wrong. Senator Morrill's fame rests on a surer foundation than a make-shift tariff law. The Morrill Act, which gives timeliness to this sketch, is the chief accomplishment of a long and honorable public career. By it and the Morrill Act of 1890 he will be known as long as Americans are interested in industrial education. Senator Morrill is the father of the agricultural and mechanical colleges—the far-seeing, sagacious man who long ago appreciated the needs of his country as few others have done, and planned and worked wisely, patiently, and effectively to make his vision a reality.

On December 14, 1857, Mr. Morrill introduced a bill into the House of Representatives "authorizing the establishment of industrial colleges in every State, and granting for their maintenance 20,000 acres of public land for each member of Congress." The bill was defeated through an adverse committee report. It was introduced in the next Congress and passed—only to be vetoed by President Buchanan. Yet Mr. Morrill was not ready to give up. He had a great idea and was willing to fight for it. The bill was introduced a third time, was carried through both houses, and was approved by President Lincoln the day after McClellan's fruitless victory at Malvern Hill.

Strangely enough, Mr. Morrill was not taught modesty by repeated defeat. The bill as it finally became a law granted 30,000 acres of land where 20,000 had been asked before. The States were quick to accept the bounty of the nation, and in the midst of a great war was begun the establishment of agricultural colleges—one of the most remarkable educational movements of the nineteenth century.

When Mr. Morrill first introduced his bill to give aid to industrial colleges, there was only one agricultural college in the United States. Eight months and one day before, the Michigan Agricultural College had opened its doors. A beginning had been made in the Michigan woods. The Morrill Act provided for a rapid development; and now every State provides for instruction in agriculture and the mechanic arts.

During the past ten years we have heard much in praise of the men who have endowed colleges, universities, and libraries. The liberal givers have done nobly and deserve to be honored for what they have done. But Mr. Morrill did more than any of them. An un-scholarly man himself, 64 educational institutions owe a large share of their endowments to him. In 1898 the income of these institutions from the original Morrill Act and the Morrill Act of 1890 was \$1,745,156.66. And this vast annual revenue represents only a part of the benefits flowing from legislation secured by Justin S. Morrill. A more comprehensive idea may be obtained by considering the following facts from an article by Dr. A. C. True:

"The aggregate value of the permanent funds and equipment of the land-grant colleges and universities in 1898 is estimated to be as follows: Land-grant fund of 1862, \$10,170,549.99; oth-

er land-grant funds, \$1,204,234.44; other permanent funds, \$11,816,258.16; land grant of 1862 still unsold, \$3,838,219.48; farms and grounds owned by the institutions, \$6,046,500.16; buildings, \$15,185,476.95; apparatus, \$1,916,225.85; machinery, \$1,383,137.14; libraries, \$1,634,190.25; miscellaneous equipment, \$1,765,243.19—total, \$53,632,852.25."

And all these institutions—endowed through the foresight and perseverance of one man and by the liberality of a great nation—are doing something. They are enlisted in the service of the people—"in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

It were impossible to estimate the influence for good of the colleges and other institutions established or strengthened by the acts which bear the name of Senator Morrill. Thousands of students have been helped thereby to a free education; the science and the practice of agriculture have been promoted; the mechanic arts have been given an impetus that has put the United States in the front rank as a manufacturing nation; and the meaning of education itself has been changed. We no longer think that a man must know Greek in order to be educated. Science has made its great conquests in the educational world since the Morrill Act gave a new meaning to industrial education. D. W. WORKING, Denver, Colorado.

An English Miller's Story.

The following good story was told at a recent meeting of the British and Irish Millers' Association. It is a little hard on the American, but he was of a kind well-known to farmers on this side the water:

My father was a farmer—a prosperous one, too. The poor old man died before farming became unprofitable, so that, although he had a numerous family, he was enabled to leave each of his sons and daughters a nice little sum. With my little fortune I started, at the age of five-and-twenty, as a miller in a small mill in the Midlands. The mill was driven by water, and was situated in a very charming spot. It was, in fact, one of those mills of which poets rave and write; but for me, inartistic as I am, it presented merely a very prosaic means of earning a livelihood. Flour milling, however, was a more profitable industry in those days than it now is, and by steady application to business, and a little bit of luck in buying wheat, I did very well in my small way, and cared little for my competitors. I only had to buy one sort of wheat, viz., what the farmers showed me, and I sold more flour to customers who came to the mill of their own sweet will than to those who were attracted by my own powers as a seller of flour.

This happy state of affairs, unfortunately, did not last long. In the early eighties I heard of a certain man going about my district selling American flour. At first I pooh-poohed the idea of American flour competing with me in my own district. I know better now!

By what I considered a somewhat curious coincidence, it happened at about this time that a gentleman called upon me. Strangers in my little village were very scarce, and it caused quite a flutter when I was told that a gentleman wished to see me on private business. He proved to be a most affable gentleman; well dressed, and easy both in manner and speech. The latter betrayed him as hailing from America, as did also a habit he had, as I subsequently found, of taking his whisky neat and washing it down immediately with a little plain waer. Asked what his business was, he handed me a card upon which was printed:

ABNER J. JONES,
Milling Engineer.

I told him that I was glad to see him, but I was not buying any milling engineers; and then he began to talk. Said he:

"I guess you're beginning to feel this American competition a bit, and I reckon I can show you how to lick it all ends up."

I felt quite interested, and asked him how this was to be done. Before replying to this question, Mr. Abner J. Jones (of course this was not his real name), deliberately took out of his pocket what looked like a piece of baked mud about the size of a potato. This he placed upon the table, and, after regarding it with a sort of triumphant smile, he said:

"That's what's killing you."
"How do you explain that?" said I.
"Well," he replied, "I'll tell you. What you see on the table there is made of similar flour to that which you make."

I began somewhat angrily to expostulate, but he stopped me, saying:

"Hold on, mister; let me explain. That bit of dough on the table is made of what we call crease dirt, which is to be found in all wheats, and which, if not separated, naturally gets into the flour."

I quite saw the logic of his remark, but I asked him how the crease dirt got into the wheat, and how much there was of it.

"Well," he replied, "I guess the dirt grows up with the wheat, and there is more of it than is good for a sack of flour. What you want," he continued, "is my Patent Crease Dirt Separator, which handles every grain of wheat just as tenderly as a mother does her first-born baby. After the wheat has passed through my machine you would hardly recognize it."

Pressed for further particulars, he described with an airy grace what was then called the gradual reduction system.

It all sounded very nice, and I felt half inclined to adopt his machine. But when I asked him the price of the machine, it (the price—not the machine), frightened me, and I told him I would think the matter over. He then left me, with the remark that "the sooner I adopted his machine the more money I would make."

After that he came again and again, and I became more and more perplexed and bewildered. One day he came and told me that my nearest competitor was going to adopt his patent "Crease Dirt Killer," and would "sweep the floor with me in no time" if I did not make haste and decide. I got into quite a fluster, but I managed to put him off again, although it was very difficult. It seemed to me, in fact, that my little order was the one thing Mr. Abner J. Jones lived for. I could not shake him off. I met him almost everywhere, whether by design or accident, I don't know; but he was always inviting me to lunch, or something, and he frequently insisted upon the remark that I was "the smartest miller he had come across in the old country," although I know I had never given him any reason to think so.

At about this time, when my worry and perplexity were increasing and my trade decreasing, I came across a paper which I will call "The Miller's Guide, Philosopher, and Friend." This I immediately subscribed to and read diligently. It described many new machines; amongst others, Mr. Abner J. Jones' new "Crease Dirt Killer," and praised them all so unsparingly that I was more bewildered than ever. It seemed to me that every machine was the best on earth and each did the same work.

It happened one day, however, that I noticed in this paper some information about a Millers' Convention which was to be held in a certain part of the country, and which would last a whole week. I very soon made up my mind that I would take part in that Convention, and I have since taken on many occasions blessed the day that I determined to do so.

In due course I started for the Convention; it is not necessary for me to say where this Convention was held, as that has nothing to do with my story. I very soon found myself quite at my ease, for at the junction where I had to change, for my destination, a gentleman came up to me and asked me if I was a miller. I said, "Yes, I am." He at once introduced himself to me as the editor of the "Millers' Guide, Philosopher, and Friend," and said he was glad to see me. He asked me many questions about my business; how many sacks an hour I made, and where my mill was situated. He did not seem to be much impressed with my importance any more than I was myself. But he was a nice affable sort of gentleman; quite different to what I expected an editor to be, and was a good traveling companion. I of course asked him lots of questions about the various machines which he had described in his journal, but I found that he knew about as much about them as I did; or else he had forgotten all about what he had written. He, however, knew all about the other millers present, and when we arrived at our destination he introduced me to a lot of millers of whom I had heard much, but had never seen. In

this he did me a good turn, and I shall always in future have a high respect for any editor I may meet.

Amongst the millers I was introduced to was a military-looking man with a sort of surprised looking head of hair. With him I soon became sufficiently friendly to be able to tell him all my troubles. He seemed to know and to have tried every new machine which I had heard and read about, and when I told him I thought of trying Jones' "New Crease Dirt Killer," he laughed, and said that he could let me have a couple of them for a five pound note, as he had tried them and found them sadly wanting. This upset me completely, and I pondered on the frailty of human nature, and especially on that portion personified in Abner Jones. That gentleman was also present at this Convention as I soon found, and he very soon took me in charge, evincing a decided objection to my being in anybody else's company but his. He specially warned me against making the acquaintance of a nice looking, dark gentleman, who was evidently of Hibernian extraction, and who, I afterwards found, was also described as a milling engineer. My curiosity was aroused by Abner J. Jones' warning, and I very soon found an opportunity of being introduced to the gentleman with the Hibernian accent. He turned out to be a very charming man, and I soon found out that he knew more about making flour than I had ever dreamed of. He had a nice coaxing way with him, too, and it was not long before I found myself inviting him to come and have a look at my mill and advise me what to do to meet the competition which was increasing around me. He very kindly promised to do this, and he kept his word, with the result that a few months later I was in possession of a plant which made me proud to be a miller, and which enabled me to make flour which was the envy of my neighbors, and, what was still more to the point, to make money. Things certainly have changed since then; my neighbors now make just as good flour as I do, and profits are small, but I have to thank the Millers' Convention for enabling me to avoid spending money on useless machinery and for starting me on the road to become what I now am, a successful and satisfied miller.

There was also a romantic side to that Convention as far as I am concerned. I was, in those days, a very shy, bashful young man in company of ladies, and when, one morning, just as we were starting on a coach drive, an old miller, to whom I had been introduced, asked me to take care of his daughter during the drive, as his ancient enemy, the gout, was skirmishing around him, and prevented him accompanying her, I felt myself blushing furiously, but I summoned up sufficient self-control to murmur that I should be charmed to do so, and very soon found myself sitting on the box seat of one of the coaches, next to one of the most charming young ladies I had ever seen. For some time I could not think of anything suitable to say to her; I stole a look at her now and then, and noted what a trim little figure she had; what a sweet kissable face, and what true grey eyes she possessed. I was absolutely happy in being near her, but what to say I knew not. How I blamed my foolish bashfulness! However, something happened which loosened my tongue. She was sitting on the outside seat, and we were being driven rather rapidly round the edge of a sort of precipice. Suddenly the coach seemed to sway outward, and my charming companion uttered a slight scream, and put her little hand on my arm as if to save herself from falling. The coachman, a bluff, honest old chap, heard the cry and, turning to me, said, "I think, Sir, if your missus sits the near side of you she won't be so frightened." My sweet companion's blushes at this remark were only equalled, I fancy, by mine; but I found my tongue, and begged her to change seats, which she did at once. She also changed her name not very long afterwards, for, with a little encouragement, I became quite bold, and surprised myself by the diplomatic manner in which I suggested to her that we were just suited to each other, and that the old coachman's remark was merely an anticipation of what ought to come to pass. Thus I have to

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D. L. Musselman, Gem City Business College, Quincy, Ills.

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Established in 1863.

Published every Thursday by the
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D. C. Nellis.....Secretary and Treasurer

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E. B. Cowgill.....Editor
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Special reading notices, 25 cents per line.
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Annual cards in the Breeders' Directory, consisting of four lines or less, for \$16.00 per year, including a copy of the Kansas Farmer free.
Electros 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 advertising intended for the current week should reach this office not later than Monday.
Every advertiser will receive a copy of the paper free, during the publication of the advertisement.
Address all orders:

KANSAS FARMER CO.,
116 West Sixth Ave., Topeka, Kans.

NOTICE EXTRAORDINARY. BLOCKS OF TWO.

The regular subscription price for 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, and no single subscription will be entered for less than this price, 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.

Market prices for hogs are about 75 cents per 100 pounds higher than a year ago.

The United States Treasury estimates the population of the country at 77,754,000, and the circulation at \$28 per capita on July 1, 1901.

The weather is usually a subject of conversation for one who has nothing to say, or one who wants to be sociable without saying anything. But it has been a subject of burning interest throughout the country for the last two weeks.

The man who gets up the best photograph showing Kansas wheat to the best advantage in the shock, stack, or otherwise, can have five dollars by sending the photo to Secretary F. D. Coburn of the State Board of Agriculture, Topeka.

The last "opening" of public lands likely ever to occur in the United States is now scheduled for August 6. Men are still living who can remember when the "opening" of lands in Illinois was the exciting topic of the day. A generation has seen half a continent covered by the Anglo-Saxon race.

A NEW NATIONAL PARK.

There is to be a big national park in the Wichita mountains in the Indian Territory. The proclamation of the President, opening the new lands for settlement, is accompanied by another setting aside a portion of the Wichita reservation as a national forest reserve. It withholds from public settlement a little over 53,000 acres of timber lands in the heart of the Wichita mountains. Under the proclamation warning is expressly given to all persons not to make settlement upon the tract of land reserved. The reservation established is to be known as the Wichita forest reserve.

The initial action, which has culminated in the institution of this national park, was taken by Mr. D. C. Burson, who conceived the idea that

these lands, which are practically valueless for agricultural purposes, might be made a forest and park reserve of value to the entire country. He corresponded with the commissioner of forestry and interested that official, and prepared the petitions which were numerously signed in Kansas, Oklahoma and Texas. It might not be amiss to suggest that Mr. Burson would be an admirable commissioner to take charge of the protection and improvement of the new forest reserve and park.

ACREAGE CHANGES IN KANSAS.

Returns of township assessors and county clerks made to the secretary of the State Board of Agriculture indicate that the corn acreage in Kansas is considerably less than one year ago. In 80 counties already returned by county clerks the total is 90 per cent of the 1900 acreage, the decrease being about equally distributed over the entire corn district.

An average of the 22 counties leading in corn acreage shows a decrease from the 1900 acreage of 9.3 per cent, 17 of these counties having smaller, and only 5 larger, acreages than one year ago. Marion, Lyon, Nemaha, Norton, and Greenwood stand out prominently on account of their increased corn areas of 13,419, 13,403, 8,993, 4,371 and 3,817 acres respectively.

However, while the corn counties have decreased considerably in corn planted, it must not be concluded that the decrease of land area last year used for corn culture is now lying unproductive or uncultivated. Other crops have more than taken the place of the area left, wheat being in the lead.

Fifteen counties showing a decrease of 240,063 acres in corn, increased their aggregate wheat fields by 255,991 acres, Osborne County leading with a gain of 38,328 acres in wheat as against a loss of 32,334 acres in corn, Smith County being next with 36,499 acres increase in wheat and 30,294 acres loss in corn. Mitchell loses 25,719 acres in corn and gains 30,721 in wheat, Cloud decreases 32,610 in corn and increases 25,293 in wheat, while Jewell loses 33,055 in corn and gains 18,528 in wheat. Other changes are, a drop of 14,053 acres of corn and a rise of 14,975 acres of wheat for Republic, a decrease of 13,321 acres in corn and increase of 23,658 acres of wheat for Ottawa County.

Changes in other counties are as follows: Washington, decrease in corn 13,234 acres. Increase in wheat 8,048 acres; Butler, loss in corn 6,200 acres, gain in wheat 3,934 acres; Coffey, loss in corn 6,824, gain in wheat 2,271; Cowley, loss in corn acreage 3,723, gain in wheat acreage 6,860; Decatur loses in corn 7,767 acres, gains in wheat 20,573 acres; Phillips, decrease in corn 8,260 acres, increase in wheat 22,802 acres; and Wabaunsee, decrease in corn of 2,782, and increase in wheat of 1,584 acres.

Fourteen of the 17 counties showing a decrease in corn acreage show an increase in alfalfa of 21,299 acres, or slightly less than 22 per cent, which notable gain indicates that this most useful and hardy forage plant is fast winning the recognition its worth justifies.

SEED WHEAT FROM THE CRIMEA.

As is well known the seed of the hard, red, Russian or "Turkey" wheat, for the production of which Kansas has become famous, was originally brought from the Crimean peninsula of southern Russia. Kansas wheat-growers and millers are convinced of the great desirability of sowing from time to time imported seed, or seed directly descended from imported stock, in order to maintain in future without possible impairment the high grade of wheat and flour they now produce. To this end the State Millers' Association and the State Grain Dealers' Association appointed last year a joint committee to import and distribute at actual cost a cargo of seed in time for this year's sowing. Inquiries about this are constantly being made of the State Board of Agriculture, and Secretary Coburn is now authorized to give the following information:

Fifteen thousand bushels of this wheat, the product of one man's raising, was due to reach New York direct from the Crimea, July 5. It will arrive at Kansas City, in bond, about July 15, be stored in a government warehouse, and distributed from there in car lots to the parties in Kansas and Oklahoma by whom it was ordered. This wheat will be in sacks holding 3½ bushels, and Mr. B. Warkentin, of Newton, Kans., chairman of the committee having the importation in charge, says that as near as he can figure the cost

will be very close to \$1.80 per bushel, exclusive of local freights on small lots.

This, all things considered, is a very low price, and of course is only made possible by the patriotic enterprise of the gentlemen who undertook the purchase and importation for the public good.

Mr. Warkentin will distribute from 1,500 to 2,000 bushels of the seed to applicants while it lasts, and the following named parties will also have it in quantities for the same purpose, viz.: J. D. Bowersock, Lawrence; Thos. Page, Topeka; A. T. Rogers, Beloit; Murdock Grain Co., Clifton; Arkansas City Milling Co., Arkansas City; C. Hoffman & Son, Enterprise; H. M. Holloway, Larned; Geo. H. Hunter Milling Co., Wellington; Imboden Milling Co., Wichita; Walunt Creek Milling Co., Great Bend; Stafford Milling and Elevator Co., Stafford; Janett & Moffett, Peabody; Thorstenberg Grain Co., Lindsborg; The Halstead Milling and Elevator Co., Halstead, all in Kansas; also the Blackwell Milling and Elevator Co., Blackwell, Okla., and Kingfisher Milling Co., Kingfisher, Okla.

There is not a winter wheat grower in Kansas who should fail to secure a few bushels of this seed, which has come direct and through first hands from the original source of supply.

TRUCK FARMER PROSPERS BY THE DROUGHT.

It will not be disputed that the truck farmer, more than most others, needs timely rains for the prosperity of his crops. How have the truck farmers fared on account of the dry weather of the present summer? Mr. F. P. Rude, of North Topeka, who truck farms 10 acres of his own land, and rents other acres on which to grow potatoes, is not in need of sympathy. On the contrary the present is an unusually profitable season with him. His crops are good, the market strong, and prices high. The strong market and high prices result from the scarcity incident to the dry season. The good crops result from Mr. Rude's system of farming. His home farm of 10 acres has received about 2,000 loads of manure in the last ten years. His cultivation, always thorough, has been persistently and regularly continued previous to and during the dry weather. His surface soil is now much like road dust. Mr. Rude had his land in condition to drink in all of the heavy rains of the early part of the season. By his frequent cultivations he has made it impossible for most of the moisture to rise to the surface. The sun and wind have therefore not had it in their power to carry away the water so generously provided. The under soil is now moist. Early cabbages are doing fine. Tomatoes are fairly well set and have yielded a picking. Early potatoes yielded 135 bushels per acre and were sold at 65 cents per bushel. The succeeding crop of potatoes is not yielding so well, but is giving a good margin of profit. The principal inconvenience caused by the persistency of the drought is as to setting out late cabbage. Facilities for irrigating would be desirable to start the plants.

The farming which pays well of a favorable season and makes extra money of a dry one surely meets the requirements. It will be observed that Mr. Rude's farming is strictly in accord with the latest teachings of science. He has plenty of humus in his soil, produced by repeated and heavy manuring. Humus takes in water rapidly and in large quantities, and gives it up slowly to sun and wind. Cultivation aids the humus soil in protecting its supplies of moisture. Here is the whole secret of successful dry-weather farming. It matters little how the decaying vegetable mould gets into the soil, whether by manuring or by the use of grass crops; it matters little with what implement surface cultivation is accomplished, vegetable mould in the soil and surface cultivation while the moisture is in the soil are nearly antidotes to drought. It must not be supposed that any cultivation can make moist a drought stricken soil. The cultivation must be applied while the moisture is yet in the soil. This is the theory in the case, and this is the happy experience of Mr. Rude.

STACKING—FIRE GUARDS.

To stack or not to stack? This may be the question with some, but this is of less importance than whether to stack well or poorly. When the skies are as of brass for days, and weeks, and months, it is difficult to believe that it will ever rain enough to injure grain

or hay even if carelessly stacked. How much more does it cost to build a good stack than a poor one? Does it require one dollar's worth of extra labor? Should the season continue dry the well made stack will keep as well as those "just thrown together." But, some figure on threshing before any heavy rains come. Delays in getting the machine, difficulties in getting hands, and other contingencies often put off the threshing. Again, these skies of brass sometimes become overcast suddenly and the rain comes in drenching torrents.

Take note of the methods of the most prosperous farmers. Do they stack carefully or carelessly? They are rich and can afford to do good work? Yes, but they got rich by careful work, by avoiding danger of losses, by saving what they produced.

Just now come reports of destruction of wheat stacks by fire. Scarcity of hands has made it necessary to bend every energy to getting the grain into stack. Fire guards were not made for lack of time. In one county it is estimated that 300,000 bushels of wheat burned on Monday of this week. It is now too late to save that wheat, but the loss of \$150,000 worth in a few minutes ought to be sufficient warning to insure the plowing of two rings around every stack or group of stacks in Kansas and the burning out of the space between these rings.

Forage can not be plentiful in Kansas this season. The writer paid \$14 a ton for hay this week. Every bit of forage should be protected in the best possible manner against danger from both fire and water.

SOME CROP ESTIMATES.

According to the Cincinnati Price Current the 1900 wheat crop of the United States was disposed of as follows:

Exported, bushels.....	213,000,000
Used for seed, bushels.....	65,000,000
Home consumption, bushels.....	350,000,000
In elevators, etc., bushels.....	30,000,000
In farmers' hands.....	35,000,000

Total, bushels..... 698,000,000

The official figures for the sources of supply are:

In elevators and in farmers' hands	
one year ago, bushels.....	97,000,000
Crop of 1900, bushels.....	522,000,000

Total supply, bushels..... 619,000,000

From these figures it is claimed that the 1900 crop was officially underestimated by about 79,000,000 bushels.

The average exports of wheat for the last eight years have been 178,000,000. The Price Current estimates that this country will this year have nearly twice the above amount, at least 350,000,000 bushels to spare for export.

Cow-Peas.

Mr. Frank Hoover, of Columbus, Kans., backs the cow-pea as follows in a letter to Professor Cottrell:

"I have been raising cow-peas as a second crop after oats and they are especially valuable. I sow oats, cut when ripe, and get them off the ground at once. I plow the ground shallow as for wheat and drill them in with a wheat drill, sowing about a bushel to a bushel and a peck to the acre; sow from 1st to 10th of July. Have a good crop of from ½ to 1 ton or more per acre. I sow Whip-poor-will, and cut with a mower when about half the pods show ripe. This leaves the land in the best of condition for corn the next year, and gives the best winter feed I ever used for cows. Winter before last when the cow-pea hay gave out the cows were put on hay, sheaf oats, and corn fodder for roughness; our butter yield dropped from 30 pounds per week to 16 pounds. I do not attribute all this shrinkage to the change of diet for that week was very cold, but the cow-peas showed very plainly to me their ability to produce butter. A creamery man, Mr. King, of Labette County, had a similar experience. When his cow-pea forage gave out he was making 90 pounds of butter per week, and immediately thereafter he made 70 pounds a week.

"Tell the farmers to get cow-pea seed from the same latitude."

Fish Commission Work.

"The United States Government, through the fish commission, has made possible some fine sport in western streams," says Mr. F. J. Cannon, of Idaho. "A number of streams that were formerly almost without finny inhabitants have been stocked with trout, and amply protected as they are by the law, their number is rapidly multiplying."—Chicago Chronicle.

Brain Markets.

Conducted by James Butler, secretary of the Farmers' Co-operative Grain and Live Stock Association.



"Not Listed Here."

The above is a picture used by the Grain Dealers' Association to describe a farmer or independent shipper: They use the words "Not Listed Here," meaning that he is not listed among the "regular" dealers. The grain dealers are using this picture on the front page of a book containing a list of their members. We reproduce it so the farmer and independent dealer can see a picture of how he looks when viewed by the regular dealer. We presume that in their judgment a man who ships grain should be a member of their association and wear a silk plug hat.

Every farmer knows that the hog which stands at the end of the trough and monopolizes the channel from which the swill comes is usually the fattest and sleekest porker in the pen. The grain dealers circulate this picture only among their members. We think it should have a wider circulation and have taken the liberty to display it in our department.

Grain Markets to 2 p. m. July 9, 1901.

Notwithstanding the excessive heat and dry weather, the condition of the growing spring wheat crop is well maintained, which has so far had but one effect, viz.: the further lowering of prices.

The July option in Chicago closed today at 63½¢, which is 16½¢ lower than the same option sold for several weeks ago. But from present indications it looks to the writer that the bears may over do the thing. When one considers the short oats and hay crops of the country, together with the very poor prospects for corn in the southwest, it looks like wheat may be low enough to feed. Foreigners offer little encouragement for higher prices, as the following clipping from an English authority attests:

EUROPEAN CROPS.

Weekly review of conditions by Mark Lane Express.

"London, July 8.—The Mark Lane Express in its weekly crop review today says it is doubtful if the current rains will effect great "transformation scenes," in the wheat crop of England. It thinks the yield may reach an average of 28¼ bushels per acre. The Express considers that the enhanced price and big weekly markets in Paris furnish evidence that the French farmers consider the government estimate as being quite 10 per cent too high. The agricultural press puts the yield at 35,000,000 quarters, 4,000,000 quarters below the government estimate. Spain is reaping a magnificent harvest, estimated at 12,500,000 quarters. The Italian harvest promises to reach the full average, and the Roumanian harvest is estimated at 9,000,000 quarters, leaving 3,000,000 available for export. The spring wheat in Russia is less promising. In several provinces the winter wheat crop, however, is splendid, according to the moderate standard prevailing. Their rye will make an excellent harvest. The other autumn sown crops are all above the average, but the spring barley and oats are below par."

Corn is on the rampage and is advancing very rapidly on account of the dry and hot weather all over the country. In Kansas and parts of Missouri

the corn is in great danger of being entirely destroyed and at this writing hot winds are reported from several Kansas towns.

Under these conditions unless immediate relief by rain is obtained corn must continue to advance.

The leading markets closed as follows:

New York.—No. 2 red wheat, 70 to 71c; No. 2 corn, 52½ to 53½c.
Chicago.—No. 2 red wheat, 65½c; No. 2 Kansas hard wheat, 64¼c; No. 2 corn, 47½c; No. 2 oats, 30½c.
Kansas City.—No. 2 red wheat, 59½c; No. 2 hard wheat, 59½c; No. 2 corn, 50c; No. 2 white corn, 51c; No. 2 oats, 31½c.

WHY NOT CO-OPERATE?

Let Us All Join the Farmers' State Grain and Live Stock Association of Kansas.

We all know how the honey is secreted in the beautiful flower, but it takes labor and skill to gather and store it for use—"Labor Omnia Vincit."

Our little busy bees could never accomplish their mission if they would not cooperate.

Farmers, why not cooperate also, and serve one another?

Everything in nature cooperates but the wealth producer, including the day laborer. After our little bee has filled the hive with honey in the fall of the year the soldier bees drive out the drones. Farmers, take the lesson and do likewise. The drones in your hive are the grain trusts. Watch how we farmers at Solomon kill off our drones and then let all farmers in our glorious State of Kansas unite with us in our noble and worthy cause, for only in union is strength. Let us all organize and join the State Grain and Live Stock Association of Kansas. Remember, life's environments, life's struggle, life's successes, life's failures, life's duties, each emphasize the necessity that man should lean upon his fellow, should cooperate with his brother, should link heart to heart, grasp hand in hand that the three score and ten of earthly years should have a finger touch with the Divine, every effort should lessen the burden of mankind, every attempt bring men into closer relation with each other. Let us demand and take justice ourselves and we will surely have freedom, and the iron hand of the grain trust will lose its grasp.

Every man who produces wealth is also entitled to the full value of the product of his labor. Farmers, have you been getting it for the past ten or fifteen years? Who has made the millionaire on our earth? And who has produced the wealth which the trusts and combines accumulate?

Cooperation is inherent in the very constitution of humanity. No man liveth to himself, and no man dieth to himself" is a dictum of Holy Writ which has been confirmed by the ages.

Most frequently manifestation of the idea has been found among classes of individuals who feel themselves bound together by common interests, but there have been those, perhaps, who have looked further than the brief boundaries which may include a class, and have mental views of a federation of the world. In my humble opinion, I think after a thorough investigation, that cooperation is practically the endeavor of selfishness, judging by my own self, to be freed from some other manifestation of selfishness. It is an effort on the part of a group, or class, to reap the full value of the product of their labor, in whatever direction it may be expended, without allowing those outside the union or class to participate in the slightest degree in such value. It is a segregation of class interest from the aggregation of general interest. Hence, justly and properly, it may be termed a manifestation of selfishness.

Now then—I think that genuine selfishness is a noble characteristic of man. It seems to me it is the foundation upon which is builded all that is worthy of our admiration and regard. He who has a true notion of self-love must be a true man, in my mind. The commands of the laws of nature, given to me when a child, were the same as given to the ancient Galilean, were not, "Love your neighbor," but, "Love your neighbor as yourself," and "Do unto others as you would have them do unto you." I think these injunctions are the criteria by which a man may judge his actions. In my opinion the reference is entirely to one's self. Hence, who loves himself truly must be true, honest, virtuous. Shakespeare has expressed the thought in this wise, "To thine own self be true, and it follows as the night the day, thou canst not then be false to any man." Were

all men genuinely selfish, this world would become a living reality. I claim, therefore, that genuine selfishness is the corner-stone of the structure of cooperation. Here it is that the doctrine of "each for all and all for each" finds its highest manifestation.

Here is the exhibition, if my statements are correct, of that ideal co-partnership, the distinctive feature of which is that the business is confined solely to the members.

Here, brethren, the capitalist and the poor man meet upon the same plane and secure identity of interest. Here false selfishness is sentenced to eternal banishment, while true selfishness comes to the front. Cooperation is not a new idea, nor an illustration of new principles. The Mosaic economy abounds with illustrations of the idea. Among the Saxon guilds, established in the reign of good King Alfred, one agreement was "if a member suffer from fire, water, robbery, or other calamity, the guild is to lend him a sum of money without interest."

Cooperation is of itself a proof that the great truth "The fatherhood of God and the brotherhood of man" is indeed a principle which ought to be imbedded in the hearts of our people. Farmers, organize your local organizations, unite with the State association, cooperate with our Kansas millers, and the grain trust in Kansas will be without power, and soon be a thing of the past and forgotten forever.

Last week I took in one hundred loads of wheat from members and outsiders and P.V. took in only two or three loads. I loaded and shipped seven carloads—7,000 bushels.

Farmers think, investigate, and then—act.
J. H. JOHNK.
Solomon, Kansas.

One Hundred Balanced Rations for a Man.—II.

MARY WAUGH SMITH.

DIET FOR THE SICK.

There is one time when a balanced ration is not just what is needed, and that is in sickness. When the body is not in its normal condition it is best to give such foods as will regulate the system. The doctor usually knows what food ought to be taken and his directions in regard to diet should be followed. Not infrequently the doctor is blamed at the slow recovery of the patient when the fault is wholly with those who have the food to prepare.

Starchy foods for an invalid must be well cooked. Two hours is not too long to cook the starch in the preparation of most diets. Of course a potato will bake thoroughly in less time. Avoid the use of oils as far as possible as they tend to counteract the action of medicines. Cloves and flavorings are also objectionable. Fruit juice can be used in place of flavorings and the food does not need to be highly seasoned.

Try to serve food as near the temperature of the body as possible. Of course this may vary somewhat, but where the patient is very ill it will be well to use a thermometer and make the variation in temperature come between 98 and 110 degrees. Drinks should be served at about 60 degrees. In case of fever, where the doctor recommends cold drinks the temperature should be about 40 degrees.

In the care of fever patients diet is most important. Serve only liquid foods, such as acid drinks, gruels, gelatin dishes, beef extract, chicken broth, etc., until after the crisis, when the more solid foods may be slowly introduced. Food should be given often but in very small quantities. Do not serve a gelatin dish that has stood over twelve hours as it is a splendid culture for certain germs. Gelatin is especially good for fever patients as the albuminous tissues are breaking rapidly.

An important preventive of disease is to keep the bowels regular. This should be accomplished with regard to the diet and not by unnatural processes too often used. The following foods are laxative except in exceptional cases where some might be otherwise: Figs, fresh fruits, including bananas, oranges, and lemons, which may be obtained at any season, stewed dried fruits such as plums, prunes and peaches, graham bread, whole wheat bread, gems, biscuits, griddle cakes, onions, celery, tomatoes, raw cabbage, corn, squash, cauliflower, green peas, beets, spinach, and other greens, liver, oysters, and wild game. The following foods have a constipating effect on most people: White bread, soda crackers, cheese, boiled milk, dried meats, salt meats, dried beans, poultry, cocoa, chocolate, cake, custards, black pepper and spices, rice, sago, tapioca. The following do not act either way except in in-

dividual cases: Lean fresh meats, uncooked milk, oat meal, corn meal, buckwheat, sweet potatoes. Exercise will generally overcome constipation and maintain health.

The following recipes may be convenient for the use of those who have never had to prepare gruels, broths, and fruit drinks:

Plain gruel.—1 level teaspoon white wheat gluten, ¼ teaspoon salt, blended into ½ cup cold water. Bring to a boil, add 2 cups boiling water, cook thoroughly and serve hot. One teaspoon cream may be added before serving.

Oat meal gruel.—2 level teaspoons oat flakes, ½ teaspoon salt, 1 cup cold water. Mix and cook slowly two hours in a double boiler. Add ¼ cup scalded milk, strain and serve hot.

Cracker gruel.—4 tablespoons powdered crackers, ½ teaspoon salt, 1 cup boiling water, 1 cup heated milk. Blend together and serve hot. This may be made quickly and is desirable to prepare where food has to be given in the night.

Orangeade.—1 cup orange juice, 1 cup water, ½ teaspoon sugar. Make as lemonade, serve hot or cold if so advised, otherwise at normal.

Apple water.—1 pint diced apples. Pour over hot water to cover and stand aside one hour. Add 1 tablespoon lemon juice and ½ tablespoon sugar. Strain and serve. One cup of juice from stewed dried apples may be used with the lemon and sugar in the same manner.

Albuminized Milk.—White of 1 fresh egg and 1 cup milk. Beat egg with a Dover egg beater and blend in the milk or put both together in a covered glass jar and shake. It may be flavored or sweetened, is easy to take and very nutritious.

Junket.—1 cup milk heated to 98° F., ¼ tablespoon sugar, ¼ rennet tablet. Dissolve the rennet in a little cold water. Add to the sweetened milk. When firm it is ready to serve.

Hot eggnog.—Yolk of 1 egg, 1 teaspoon sugar, 1 cup hot milk, ¼ cup brandy or wine. Beat yolk, add sugar, blend in hot milk, add wine or brandy and serve.

Cold eggnog.—1 egg whole, ½ cup milk, 1 teaspoon sugar, 1 tablespoon brandy or fruit juice, ½ teaspoon salt. Beat egg, blend in milk and other ingredients.

Milk punch.—1 cup milk, sterilized and cooled, 1 teaspoon sugar, 2 tablespoons strong grape juice. Shake milk in covered jar, add sugar and fruit juice and serve.

Crust coffee.—1 cup toasted bread crumbs nearly burned, 2 cups hot water. Simmer 5 minutes, move back on stove and cook 10 minutes more. Strain and serve. Brown bread makes more nutritious crust coffee.

Egg poached in milk.—Poach delicately at a low temperature as for a soft poached egg in water. It is more nutritious and at times desirable. The milk may be used afterward in a white sauce if one wishes to save it.

Coddled Egg.—¼ cup milk, 1 egg, 1 teaspoon butter, ½ teaspoon salt, speck pepper. Beat egg, add butter, salt and pepper, heat milk in a double boiler, add egg gradually. Serve over toast or crisped crackers.

Fruit gelatins are prepared as at any other time. A freshly opened package of gelatin should be used for an invalid and the gelatin preparations must be served freshly made.

Candy Offset Tobacco.

"I don't intend to marry a man who'll smoke himself into heart failure," she said.

"Now, look here," he protested. "I don't interfere with your eating candy. Why should you interfere with my smoking?"

"But I don't eat candy morning, noon, and night."

"Neither do I."

"But you smoke morning, noon, and night."

"But you don't."

"Well?"

"Well, if you don't smoke morning, noon, and night, and I don't eat candy morning, noon, and night, we break even, don't we?"—N. Y. Commercial Advertiser.

Relief.

When the bills for our daughter's trousseau began to arrive we fairly gasped.

But our hearts, darling, whom we were soon to lose, consoled us.

"Stupid old papa!" she twitted, as sweetly as a bird. "These are for exhibition to the society reporters. There is a 90 per cent discount."

Now we felt vastly relieved.—Indianapolis Press.

Horticulture.

Commercial Pear Culture.

M. B. WHITE, ASSISTANT CHIEF, DIVISION OF VEGETABLE PHYSIOLOGY AND PATHOLOGY IN YEAR BOOK OF THE DEPARTMENT OF AGRICULTURE.

BOTANICAL CLASSIFICATION.

From the standpoint of the botanist, the pears which are cultivated in America for their fruits may be divided into two groups: (1) The European group, originating from *Pyrus communis*, the native pear of Europe, and (2) the Oriental pears, consisting of varieties derived from *Pyrus sinensis*, the native pear of China and Japan. Many varieties of the so-called European pears have originated in America, but they are of course seedlings from pears of the European type. Examples of this are the Seckel, Lawrence, Clapp's Favorite, Wilder, Howell, Tyson, and others. On the other hand, many of these varieties were imported directly from Europe, as, for example, the Anjou, Angouleme, Louise, Bonne de Jersey, and the very popular Bartlett.

COMMERCIAL CLASSIFICATION.

From the standpoint of the commercial orchardist another classification, however, is desirable, and for cultural purposes pears may be divided into three groups: Dwarfs, standard, and Oriental.

The dwarf pear consists mainly of European varieties propagated on the quince root, the principal stock used for this purpose being rooted cuttings of a vigorous variety called the Anjers. The trees so propagated are dwarfed in habit, and are usually very productive and precocious in bearing. In case of certain varieties, conspicuously the Angouleme, the fruit is improved both in quality and quantity. On the other hand, the quality of the Seckel is not so good on the quince. Occasionally we have the anomaly of a pear growing naturally as a dwarf when propagated on the pear root, an example of this being the Japan Golden Russet; but ordinarily speaking, the dwarf pear means the pear on the quince root.

The second class, standards, consists of the European varieties propagated on the pear root. The stocks for this purpose may be either European pear seedlings, Japan pear seedlings, or rooted cuttings of some of the Oriental pears.

The third group, Orientals, comprises those pears which are partly or wholly of Chinese or Japanese origin. Only a small part of the commercial plantings are pure Oriental pears. Most of the important commercial varieties in this group are half-and-half hybrids between the Oriental and European pears. The Oriental brood, however, which is in them gives them such a strong constitution and makes them such vigorous growers that they stand out very distinctly from the European tribe. In all orchard considerations these three types of pears must be kept continually in mind, as their requirements are usually quite different.

The principal dwarf pear orchards in the United States are located in the northeastern section of the country. The most successful ones are to be found in southern New England, New York, Michigan, and on the eastern shore of Maryland. Some very fine small dwarf-pear orchards are known to the writer in New Jersey, Pennsylvania, and Virginia. The standard European pears are grown only in the area above mentioned, but somewhat farther south. Very few successful orchards, however, of this type are south of the latitude of Washington or Cincinnati, except in the Allegheny Mountains, where the higher altitude compensates for being so far south. The Oriental pears, on the other hand, find their principal northern limits in about the latitude of New York or Philadelphia, and are very successfully grown as far south as the north line of Florida or even in the northern part of the peninsula of Florida. Their general range is distinctly more southern than that of the European pear. Their thick, leathery foliage and general drought and heat resistant characters enable them to withstand the hot, dry, sunny weather of the Southern States. Strange to say, on the other hand, these pears are very resistant to cold, and are grown successfully as far north as western New York and the southern part of the lower peninsula of Michigan. Along the northern boundary of this group, however, and on the Pacific coast, the European pear generally exceeds the Oriental in popularity and desirability. Where the Bartlett and other pears of that type really thrive well, the Orientals, which are of poorer quality, have no place.

From Philadelphia southward the pears of the Oriental group are by far the safest and most profitable to plant at the present time. The writer is carrying on experiments in crossing the Le Conte and Kieffer with the Seckel, Anjou, and other choice pears, in the hope of securing in the resulting seedlings the high flavor and delicate texture of the latter, with the vigor and productiveness of the former. The standard aimed at is Seckel quality and Kieffer productiveness.

LOCATION, SITE, AND SOILS.

Although the pear may be grown on suitable sites anywhere within the area above outlined, certain localities have long been known to be especially favorable. The strip of country lying south of Lake Ontario, in western New York, the fruit regions around the smaller lakes, the banks of the Hudson River, the vicinity of Boston, Mass.; portions of Long Island, N. Y.; New Jersey, and the eastern shore of Maryland are striking examples. Very successful pear orchards occur in the fruit belt of Michigan, and to a less extent in southern Illinois, Indiana, and Ohio. In the higher portions of Maryland and Virginia are also some excellent pear orchards, but the mountain region seems to be less developed in proportion to its merits than most other parts of the country. Aside from the general consideration of soil and climate, nearness to large cities, convenience to transportation lines, railroad stations, or steamboat wharves often determine the most desirable location for the pear orchard.

As to the site for the pear orchard, the pear is not as exacting in this respect as the peach and many other fruit trees. The pear thrives on all slopes and exposures and on level land if the general region is adapted to it. In the matter of soils the pear is also recognized as a fruit which is not very discriminating. The ideal soil for dwarf and standard pears is a clay loam, with a porous clay subsoil. The dwarf pear requires a moister, stiffer soil than the standard to secure maximum results, although even dwarfs may be made to exceed on sandy soils by heavy manuring and high cultivation. Sandy soils with clay subsoil often prove very good for the standards. Many of the pear orchards on the eastern shore of Maryland and at least a portion of those in New Jersey are on this kind of soil.

For the Oriental pears the light, sandy peach soils may be considered the ideal ones. The Oriental pears will grow and thrive on almost any soil which is not too wet; but for the highest perfection in quality of fruit and smoothness and high color of skin they should be grown on rather light, porous, well-drained soil, and on high or sloping locations, where the air drainage is good. In other words, the Oriental pears reach their greatest perfection in localities and sites where the peach succeeds well.

PLANNING THE ORCHARD.

In no phase of pear culture is the skill and experience of the orchardist more thoroughly brought to the test than in the preparation of the plans for the orchard. He must not only decide upon the varieties and the relative importance of each, and the distance apart of the trees, but must also consider the relative time of ripening of the fruit, so that it can be marketed with reasonable convenience with the facilities at hand, and he must also bear in mind questions of pollination, so as to have mutually fertile varieties which bloom at the same time, planted near together.

In all cases, when planting out an orchard of an acre or more in extent, it is best to make a preliminary survey of the ground and then draw up a preliminary plan on paper. This need not necessarily be a plat, but should show the number of rows and the number of trees of each variety in each row. Dwarf pears are ordinarily planted at distances between 8 and 16 feet apart each way, standard pears about 20 feet apart, and Oriental pears about 30 feet apart. In the writer's own orchard the trees have been planted on a rectangular system; that is, instead of planting the trees 20 feet apart and in rows the same distance apart, in squares, they have been planted 16 feet apart in rows 24 feet apart. The reason for this is that in planting, fillers have been generally used; that is, temporary trees have been set out between those which were to remain permanently. By planting out the orchard, for example, with standard pears at intervals of 12 by 16 feet, every other row of the 12-foot rows is a filler row. As the trees begin to crowd, these are taken out, and the trees are left 16 by 24 feet apart. In either case the rectangular approaches so nearly a square that it is perfectly

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convenient to carry on the operations of cultivating, spraying, etc.; in fact, it is more practicable to have the trees farther apart one way than the other, as this leaves a broader strip for plowing and more room for spraying and hauling out the fruit as the trees begin to fill the space completely. For dwarfs the distance of 12 by 16 feet was adopted, with a filler row between 16-foot rows, which makes the trees stand 12 by 8 feet. The distance for the standard pears is 16 by 24 feet, with fillers between the 24-foot permanent rows, the trees thus standing in the original planting 16 by 12 feet apart. In the Oriental orchard the distance is 24 by 32 feet, with a filler row between the 32 foot rows, making the trees stand 16 by 24 feet apart. It will be noted that each of the two latter distances is double that of the preceding, so that the orchards can be planted adjoining and the rows be continuous, which is a great advantage in plowing and cultivating. Furthermore, all the distances are multiples of four, and this arrangement gives the convenient distance of 4 feet for planting truck crops, cow-peas, etc., in the young orchard.

PREPARATION OF THE SOIL.

The pear, like most other fruit trees, is very susceptible to previous preparation of the soil. As a rule, it is best, if possible, to plan beforehand where the orchard is to be located, and begin the preparation of the soil one or two years before the trees are planted. A well-cultivated crop of Irish potatoes or any of the hoed garden truck crops which require high manuring and thorough cultivation, may be considered as good preparation for the pear orchard. The soil, unless naturally very deep, should be plowed an inch or two deeper each year for a year or two in anticipation of planting out the orchard. In this way the soil will be materially deepened and enriched and its mechanical state improved.

These remarks apply more especially to dwarf-pear culture, but also have a considerable bearing on the behavior of Orientals and standards. The principal advantage in thorough preparation is the saving of time. The young trees start off more rapidly if the soil is previously thoroughly prepared. Orientals and Bartletts may be planted on newly cleared land when no other is available, but as a rule, the land should be planted to a crop for at least a year or two before setting out the trees. Most soils suitable for pear culture have a more or less stiff clayey subsoil. It is a great advantage to thoroughly loosen this subsoil by plowing or subsoiling before setting out the trees. If the orchard is planted in the fall of the year, which is the preferable time in the eastern and southern States, the land may be subsoiled by following with a subsoil plow immediately after the turning plow. It is not necessary, however, to subsoil the whole area of the orchard unless this is desired for the cultivation of other crops among the trees. The land may be plowed first, and then a special preparation of plowing and subsoiling may be given to a strip about 6 feet wide on which the three row is planted. This may be widened by subsoiling a strip around the trees each year ahead of the spreading roots until the middle is reached. Of course, very good preparation in many parts of the country for meadow or pasture land would consist in plowing it up rather early in the fall, then harrowing a strip on which the trees are to be planted. More orchards

have been planted without subsoiling than with it.

HOW TO PLANT OUT THE ORCHARD.

Each orchardist will no doubt develop some method of his own in planting out the orchard. There are many methods, however, of undertaking the work by which time is saved and accuracy secured. One of the simplest ways of planting out an orchard, and a very good one under certain circumstances, is to measure off the land with a tape-line or pole, driving a small stake at the end of each row around the orchard, and then with a one-horse plow, or other convenient implement, check off the field into squares. The trees are then planted at the intersection of the furrows made by the plow. On level land, with a skilled man to run the furrows, quite accurate results may be obtained by this method. As a rule however, the writer has found another method preferable, namely, planting by stakes. The method by furrows is objectionable for two reasons: (1) In order to save digging the holes it was found desirable to plow out a deep dead furrow with a two-horse plow, making from three to five trips, and when this large dead furrow was thrown out it was impossible to use it as a planting guide with any accuracy; (2) difficulty was encountered in securing accurately laid-off furrows, especially on rough land or land where any sort of obstacles intervened.

The method of planting by stakes starts out essentially the same as the above method, by setting pegs and laying off the plow. The pegs should be a rod or two outside of the outer row of trees and parallel to it all around the block. These pegs may be quite small, split from a block of wood, and should be set accurately. A quantity of stakes should be made 4 to 6 feet long. The head man takes an armful of stakes, and beginning at the back of tree No. 1, drives a stake accurately behind it. At the same time an assistant, stationed at the opposite side of the field, also carrying an armful of stakes, places a stake at his end of the row. A third man with a supply of stakes is stationed

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midway between these two, and after the end stakes are driven the foreman sights between them and accurately locates the position of the middle stake while the helper drives it, thus setting the three stakes in a line on each row. In the same manner the rows are staked out in the other direction. This is very quickly and accurately done unless hills are encountered, which are difficult to sight over, but by using a long pole for guiding the location of the stakes this difficulty may be overcome. The result is a stake marking each end of each row and a row of stakes across the center of the field each way marking the middle point of each tree row.

Taking the most convenient direction, the deep dead furrows are then plowed, and necessarily with them the center stakes, which must be reset by sighting. The trees are then brought into the field and the bunch of bundles required to plant each particular row, as shown by the plan on paper, is then roughly heeled in in the dead furrow at the end of the row. While up to this time considerable labor has been expended in preparation work, from now on the planting can proceed with great rapidity and accuracy. The planting gang should consist of four men, viz., the foreman, who holds the tree and tramples the earth around it; two shovelers, one of whom must be a good hand at sighting a straight row, and a fourth man, who prunes and drops the trees at about the places where they are to be planted. The foreman holds the tree in his hands in a vertical position and sights accurately its alignment with the center stake and the end stake beyond. The first shoveler stands in line with the cross row and sights on the center stake and end stake of that row. This results in easily placing a tree within an inch of where it should be. If any additional digging is necessary the two shovelers strike in with their shovels and remove the necessary earth. The tree is then set in place, and the mellow earth shoveled around it, the foreman trampling the soil firmly around the roots as it is thrown in. He keeps the tree in line on the row being planted, while one of the shovelers sees that it is kept in line in the other direction. In this way four good men can plant out easily from 500 to 1,000 trees in a day. When the planting is finished, a one-horse plow is used to fill in the dead furrows and to throw the earth more thoroughly around the trees.

(To be continued.)

The Flower Garden. Mistakes and Successes in Experimenting.

KITTIE J. M'CRACKEN BEFORE THE SHAWNEE COUNTY HORTICULTURAL SOCIETY, APRIL 24, 1901.

The garden is of very ancient origin, as our first parents can testify; and it was also a source of profit and loss to them. Solomon says: "Awake, O north wind; and come, thou south; blow upon my gardens that the spices thereof may flow out. Come into the garden and eat of the pleasant fruits." The hanging gardens of Babylon were one of the wonders of antiquity, as in every age gardens have been a source of delight.

It is more satisfactory to have the flower garden at one side or away from the front. The space in front should be in grass and no arrangement of beds will look as neat and tasteful as a well kept lawn. It can also be kept in better order at less cost.

Mixed beds of flowers or shrubbery in the most conspicuous place on the lawn is unwise. Given a good plat of grass and neat walks and the flower arrangement will follow easily. Good drainage is a most important point.

Many books have been written, and many things said about arranging a garden, and I find it is most difficult to preserve it naturally and without an appearance of artificial intention. Nature has little to do with geometrical symmetry and tolerates no regularity of form, except that of symmetrical growth. The garden which has no element of wildness in it must be lacking in artistic display. An irregular mass of color and form satisfies the eye, while a circular bed conventionally centered and bordered is an abomination.

It may not have every weed or stone taken out of it and its borders may not be in prim straight lines, but it should have here and there always something to delight the eye, to draw one forward at every step with enhanced pleasure and interest.

It should be a paradise on earth, a place of delight, a retreat from household cares, a spot in which to meditate, to read, to refresh our minds, and no matter how small the plat of ground it can be all this to the owner if he so desires and plans. Those who consider it from a purely decorative stand-

point, can never know this value in its highest sense.

Our grandmothers were fond of flowers in their good old-fashioned way. With the fragrance of the nosegays of those days yet fresh in our memory, and the remembrance of the pride they took in their "laylocks," "bachelor buttons," "touch-me-nots," "dill," etc., it is hard to say that our grandmother's gardens were not things of beauty. Their aim was a quantity of bloom, while quality was a secondary matter, and effective arrangement the least considered of all. By the law of compensation the exactness of the vegetable rows counterbalanced the abandon of the flower garden which often resembled an abandoned clearing, all sprouts and underbrush. But I have happy and tender recollections of such a garden, and would not speak disparagingly of its riotousness. It gave cheer to a weary mother and delight to children.

No one has less confidence in his own skill than the experienced gardener. What pitfalls and discouragements, then, await the beginner. Yet experience, however dearly bought, will teach him to plan with wise forethought; to turn the mistakes of previous undertakings to present success. Nothing will compensate for the pleasure and profit to be derived from such work and study, even if failures outnumber the successes achieved.

Beyond the arrangement of the plat, a most important element in the making of the garden and one which contributes largely to its beauty is the disposition of flowering shrubs. In fact they are necessary as a background, and there are so many to select from. The fragrant calycanthus, the hydrangea, sweet syringa, Japan quince, the beautiful Russian olive, and the eleagnus, a charming Japanese shrub. Those I have mentioned are a few only of the standbys; and though my garden may be of sufficient size to contain more, I must have these at least. Roses should not be put in close proximity to annuals, the gaudy ones especially. The stately lilies and cannas and gladioli need nothing to enhance their beauty, and should also be free to attract the attention they merit.

Vines are the minor poets of all things growing. An oak is an epic, grand, majestic, enduring; the elm pathetic in its graceful entreaty; the pine like a monk at prayers or chanting a profundis. Let them cast their welcome shade on our sunny garden. But the vines, light, delicate, airy, in perfect touch with nature, fashion their sweet poems close to her heart for us to enjoy. A free use of vines clambering over fences or making beautiful an unsightly stump is also a concession to that necessary element of natural freedom.

With a background of tall shrubs and a profusion of climbers, we are ready to decorate the border with all the gorgeousness of bloom that Burpee's grand catalogue pictures to our bewildered eyes.

It has been said that "He who makes three blades of grass to grow where one grew before has achieved a miracle," but what shall we say of him, who, taking nature in hand, has improved even her grand perfections?

Take, for instance, the dear and well remembered pets of our mother's garden, such as the touch-me-nots, whose inferior single flowers were scarcely visible beneath the foliage, and compare them with the perfect double camellia-flowered balsams of to-day. In this instance, improvement has not been made at the expense of fragrance, for the odor is akin to that of the wood violet in early spring, and what would little "Johnny jump-up" think if he could behold himself (if he still exists), pictured in a mirror beside a beuffled and befrilled pansy face? The cockscombs and faithful morning glories are nowhere in sight with the celosia, ostrich feather, and the imperial ruffled, frilled, and expanded beauties from Japan. Only the florist, whose skill equals the midas touch of the alchemist, can unfold to us the secret of this necromancy.

But we accept with pleasure this result of this wonderful skill; procure seed and plants and with but the most meager knowledge of the commonest requirements, consign to the cold, heavy, infertile soil, seeds whose germination can only be accomplished by careful nursing in the hotbed, and with each failure perhaps bewail our luck and apostrophize the seedsman with undeserved anathema. Along this line has been many of my mistakes. For many years I bought seeds ad libitum, and considered superfluous the many minute directions laid down in the catalogues as a guide to beginners. Each year I wanted the world and expected

to get it, but I have learned many things from these depressing failures. I have learned to read and interpret the florists' terms; and when I see a description of a rose whose beauties are enhanced by its being an everbloomer, I know it is not the one for my garden, and the hardy hybrids are ordered.

To me the annual appeals as a necessity. They have given me more satisfaction than anything else in the flower line, the annual, the summer-blooming bulbs, and the vines. The seeds are sown in the spring, the plants arrive at maturity in the early summer, bud, blossom, and ripen their seed in autumn, and die, having performed their entire mission. There is no situation or soil in which some will not flourish. Their propagation is so easy that a brilliant show of bloom can be secured with little outlay of time or labor. Let me mention a few of those I have found satisfactory: The centaureas, carnations, pinks, antirrhinums, delphiniums, gaillardias, asters, phlox, eschscholtzia, balsams, agrostema, salpiglossis, sweet peas, zinnias, and many more. The linum, planted in mass, will be a thing of beauty the summer through. I fear to weary you, but I must mention certain vines that gave me much pleasure and made a good record for beauty and utility, and let me insist upon a trial if you have not grown them. The *Mina lobata*, a Mexican vine, whose singular flowers attracted much attention from my neighbors. The Brazilian morning-glory, the white-tassel, the little abrobra, the cypress, and the climbers! My garden is not complete without their adorning completeness. The ramblers, clematis, honeysuckle, matrimony vine, wisteria, etc.

With the sweet influences of spring on every side comes the fresh delight of welcoming to my garden these dear friends and companions of the long summer days. Blade by blade the tender grass is pushing through the moist brown earth. Petal by petal the buds of the early spring flowers are opening to view. Millions of tiny voices sing to me a chorus of fairy music which makes me a child once more. A faint Kansas breeze, the most refreshing one can know, brushes my cheek and a waft of awakening spring roods fills me with delight.

All my cobwebby trials and mistakes are forgotten and the allurements of bloom takes possession of my senses, and I once more endeavor to make my flower garden a blooming success.

He who for the good of his soul
Lists the bird's song,
Smiles on the flowers at his feet,
Is gently refreshed and strong
And reaches the goal.

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After the Red Clover Honey.

The latest fad in bees is a strain with long tongues that can extract the nectar from the deep tubes of the red clover blossoms. Beekeepers have for a long time coveted the honey in the red clover blossoms, and the Italian bee, when introduced into this country, was supposed to be able to reach it, and the job was placed in their hands. But, after a lapse of time, it was discovered that but a small per cent of them did any work on red clover blossoms.

Of late, the fact has been developed that some bees have longer tongues than others. Various ingenious contrivances have been made to get the exact measurements of the bees' tongues, and it has been found that they vary in length all the way from fifteen one-hundredths, to twenty-three one-hundredths of an inch; the last named being very rare. If I am not mistaken a few perhaps have exceeded this. It seems that the required length is about twenty-five one-hundredths.

Every beekeeper of note is now busy improving his stock along this line, and if you were to pick up a bee journal of the present, you would find in most of the advertisements of queen breeders the announcement of the tongue length of his breeding stock. Everybody is confident that it will require but a little time and patience to add a length to the tongues of all bees, for there has been so much attained in breeding bees in other ways that his does not seem impossible. It is well known that the common red clover is perhaps the heaviest nectar producing plant known, and honey from it is of fine quality. The value will not altogether lie in the honey crop, but the complete fertilization of the bloom will add greatly to

Run Down

weak, nervous, exhausted, all out of sorts. Overworked nerves are always irritable and restless. The eyelids twitch, the stomach rebels, the brain is fogged, and the heart is unsteady. Stop the waste of nerve-force. Stimulate digestion, strengthen the nerves, and replenish the vital power.

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the seed crop, thus benefiting the farmer.

The Worst Cases of Robbing.

Just about mid-summer, after the honey season, and especially if the honey flow is entirely shut off, we have the worst cases of robbing among the bees. This may be prevented if every colony is a good one and all supplied with fertile queens, but frequently at this time there will be a number of colonies without queens. This is nearly always the case after swarming, for many of the old stocks that have young queens to depend upon often fail, and such hives have no opportunity of raising the second queen.

By close watching along this line we need not have queenless colonies when the danger point comes, for we can detect those that have lost their queens and can supply them with either queens or a brood from which to rear them. Colonies that are in proper condition are proof against robbers, and if we find one being robbed, we can readily conclude that something is wrong. In most cases it is owing to the loss of the queen. The best method to stop a case of robbing is to cover the hive with a blanket. This will stop them for the time being, but if the hive is exposed soon after, they will again begin on it. The first thing is to ascertain the cause, and if no brood is found in the combs it is evident they have no queen. Frames of brood may be given them from other colonies, and they should remain thus covered a day or two. They may be closed with wire screen, and kept confined several days, if plenty of ventilation is given them. The entrance to the hive should be contracted to a small space, even so small that only one or two bees can pass. If but one hive is doing the robbing, change the position of the two, and place frames of brood and bees from the one doing the robbing into the one being robbed, but if other colonies are taking a hand in the robbing this is not a safe plan.

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The Poultry Yard.

Young Hens for Winter Eggs.

The poultry keeping operations of the farm will always be on a low plane where there is a lack of system in regularly getting rid of the hens after their second, or at most, third year. We wish we could impress this fact upon every farmer who is disposed to give the slightest recognition to the part which the chickens play in connection with the farm revenues. It is a sheer waste of money to build good houses and fill them with hens which have lived beyond the day of their greatest usefulness. Send the aged hens away this summer just as soon as they have weaned their brood. Don't wait till fall, as they will then have to be sold in competition with young stock, with which the market will be flooded. You could not find poorer employment than trying to get winter eggs from hens over three years old.—Wallace Farmer.

Killing the Lice.

Excluding the hens from the poultry house for six weeks will rid it of lice. The lice will starve to death in that length of time. In summer there is no particular occasion for allowing the fowls to occupy the poultry house. The growing chicks are in the nursery coops, where they should remain till fall, and the old fowls are better off perched in the trees or in the open sheds, which are to be found on every farm. The ordinary farm poultry house is not built with a view to summer ventilation, and is about as comfortable as a bake oven during a sweltering July or August night. Why not shut the hens out of it and thus save yourself the labor of keeping the lice in subjection. The hens will settle the lice question without any of your assistance if they are kept away from their principal breeding ground.—Exchange.

Poultry houses may be readily rid of lice by painting the interiors, roosts, and supports with gas tar, and sprinkling the floor thoroughly with gas tar and water. This is the cheapest paint that can be bought.

Bring on the Cows.

Some time ago an exchange gave the result of an experiment by one of its readers. Here is the daily food for 255 hens and 8 chickens one-third grown:

12 quarts skim-milk.....	\$.12
9 pounds of meal.....	\$.09
2 1/2 pounds scraps.....	\$.05 1/2
1 1/2 " poultry food.....	\$.15
5 " oats.....	\$.07
7 " cracked corn.....	\$.07
2 " wheat.....	\$.03 1/2
1 " oyster shells.....	\$.00 1/2
3 " clover rowen.....	\$.02
16 " corn.....	\$.16
6 quarts small potatoes.....	\$.04

Cost per day.....\$.81 1/2

The writer also adds the following as an exultation of the fact that the hens can beat the cows:

"I claim that I can take care of this flock of hens with less labor than two cows require. Drive up your \$94 worth of cows and show up your figures from them!"

The above is very encouraging to those who know how to make poultry pay. Like everything else, the poultry business demands work and attention. The hens can not be neglected more than the cow. The writer cleared about \$400 from less than 200 hens.

It will be seen that the skim-milk is figured at one cent a quart; some milk would be nearly as good at one-half the cost; the clover rowen at \$13 per ton, and the small potatoes at about 25 cents a bushel. By these liberal estimates the cost is materially increased, but the ration is a profitable one to study. The poultry food is of no account and should be stricken out, and substitute instead turnips, cabbage or small potatoes, and probably the total cost here in Indiana would not exceed 75 cents per day.

All it requires to make poultry pay handsomely is a certain amount of study and daily attention.—The Farmers' Gazette.

Poultry Notes.

N. J. SHEPHERD, ELDON, MO.

Molting hens need a variety of food, wheat, linseed-meal, sunflower-seed, sorghum-seed, oats, and some corn should be supplied. A supply of bone-meal and oyster shells should be kept where the hens can help themselves. The process is a severe drain on the system and they should have good treatment until it is through with.

Especially during the next two months, when the weather is very hot

and dry, it will be found a good plan to empty out all the drinking vessels at night and then early in the morning rinse them out with clean water and fill with fresh, changing several times during the day. Plenty of pure fresh water is a material aid in maintaining good health.

From now on until in the fall, while the crops are being harvested, is the best time to save up a good variety of food for the poultry during the next winter. A little care to store what would in many cases otherwise go to waste will lessen materially the cost of keeping the poultry throughout the winter, while the better variety will maintain better health and secure more profitable results.

As bantams are kept more for ornament than use and as the main feature is their small size, in breeding them every point should be sacrificed in order to have them as small as possible. One item in this is not to hatch too early. August is a good month in which to hatch them as this will give them time to grow before the cold weather sets in. They should be kept separate from other breeds.

In order to make the most out of poultry not only should all reasonable care be taken to secure the most eggs and the best carcasses, but the feathers and the manure should be looked after. It is claimed that the manure from a single fowl, if properly saved, is worth half the cost of feeding. The feathers can always be sold at a price that will pay well for taking care of them.

The only safe rule to follow when a large number of fowls is to be kept is to divide them into reasonably small flocks, say not more than 50. This lessens materially the risks of disease and insures better average treatment for all. Then there is less risk of over-crowding. Over-crowding, bad ventilation, and uncleanness are the triple evils that cause more loss than all else combined, and especially so where a large number of fowls are kept.

The hatching season may be considered as over now. More or less of the hens will be moulting and as there is now not much other work to do it is a good time to build the poultry house if one is needed. The capacity of the house should not be determined altogether by the number of poultry to be kept, but the size of the hens must also be considered. The particular style is not so important as to have it sunny, convenient, warm, and dry.

One of the easiest ways of destroying lice in the poultry quarters is to spray the inside thoroughly with crude petroleum. Where it can be secured it is generally sold cheap so that it can be used freely.

One thing connected with the poultry business that the beginner is apt to overlook, and which is essential to success, is giving attention to small and oftentimes seemingly trifling details of arrangement, and yet it is the looking after these that usually insures success or failure.

It is a good plan with young fowls, that are desired to be brought to the broiler size as soon as possible, to feed them largely on cooked food. It is easily digested and they can be fed four or five times a day. Give them all they will readily eat up clean and they will grow very rapidly.

When the fowls are kept closely confined it will be found a good plan to give them a soft food once a day. They should also have green food every day and this should be chopped into little bits, as fowls have no teeth and swallow their food whole. They should also have a quantity of grain to supply their various wants.

The early hatched ducks should be pushed now so as to market the early part of July. With good feed and care ducks can be made to grow very rapidly and when 10 weeks old will weigh 8 to 10 pounds per pair, about double that of chickens of the same age. With ducks it is a very good plan to sell the early hatched as soon as of suitable size and keep the later hatched ones for breeders and layers.

On account of their wild nature it is best, so far as it can be done, to hatch the guinea eggs under common hens in the poultry house and raise them as gently as possible. When hatched they are very pretty but are also very tender and need good care until they are reasonably well feathered, when they can be turned out and will readily take care of themselves. In fact there is no class of poultry that will pick up their own living or look out for themselves as well as guineas.

At the Pan-American.

The brilliant results which have followed American independence in the study of industry and its effects upon the growth of civilization, have best been brought to public notice through our great national expositions, where a world of history and achievement is spread out before the interested spectator. The marvelous energy and development of our country have stimulated the genius of invention to such a point that to interpret our latest discoveries requires the accumulation of masterpieces in one great aggregation. While ancient architecture figures to some extent in the minor details of buildings, the whole presents a view that is distinctly modern and characteristic of American designs in structures suitable for all demands. Probably no where in the world are people more interested in seeing the work of their fellow men than in our own country, and upon this one fact depends the success or failure of such expositions as spend millions of dollars in their construction. Transportation by rail to central points in the United States has arrived at such a stage of perfection that a thousand mile trip is reduced to the minimum in the way of accidents or mishaps.

To the laboring man, the merchant, or mechanic, the sights of an exposition like the one at Buffalo, afford material for discussion through coming years, and relieves the hum-drum of every day toil.

The Stadium is the only structure at Buffalo that resembles in many particulars those ancient piles said to have existed in Greece and Rome and devoted to athletic sports. The sides of this inclosure rise to a height of some 50 feet and it seats 15,000 people. It is oblong in shape and has a 1/4 mile track for foot and hurdle races, jumping contests, throwing the discus, and other games of olden times, as well as all the athletic feats of the present day. Gladiatorial combats and chariot races were the principal drawing cards according to history in the ancient cities. The nearest approach to the deadly encounter between gladiators in the Roman colosseum, is the bull fight in the Mexican village between man and beast which occurs every afternoon, but according to prearranged plans neither is killed, only the bull's hide is filled with bandarillos, until the poor beast is goaded to the highest pitch of desperation.

No exhibits of cattle are shown at present, except the cows that are being tested at the dairy barn; where the following breeds are represented: Polled Jerseys, Guernseys, Brown Swiss, Dutch Belted, Canadian Jerseys, Shorthorns, Holsteins, Ayrshires, and a distinct breed called French Canadian cows, which somewhat resemble the dark colored Jerseys, but have larger horns. The Ayrshire cows are fine looking dairy animals, with sleek coats and soft skin, and the Red Polls are making a good record in butter. The largest butter maker for the week, during my visit there in June, was a Guernsey, viz.: 16.45 pounds; her net profit for that period was \$2.88. The next largest butter maker was an Ayrshire, from Canada, giving a record of 15.11 pounds, and a net sum of \$2.67. The Dutch belted made the least butter, and indicated the lowest per cent of profit. No American Jerseys except polls were shown, and of these I am unable to make a report. The records of all cows in the barn are tabulated over each cow's stall for the day, week and month, also the cost of feed and the profit.

In the agricultural building extensive exhibits are made by New York, Illinois, Michigan, Mexico, Ontario, Ohio, Minnesota, Wisconsin, Pennsylvania, and some other eastern and southern States. Among the latter are Louisiana and Mississippi, showing exhibits in cotton, sugar and other products of value peculiar to those States. On the whole all the displays in this building are handsomely arranged and show to good advantage the staple products of the American continent. Washington and Oregon are represented mostly by their wonderful displays of lumber and salmon fishing.

Some of the most famous bands in the country will play here through the entire season. Sousa will delight his hearers until about July 10. His music is of that order that suits the most classical student, the connoisseur of stirring marches, or the great mass of people that take pleasure in rag time productions, and the soft strains of giddy waltzes.

Acres of valuable exhibits can be seen in the manufacturers building; powerful locomotives and the newest ap-

POULTRY BREEDERS' DIRECTORY.

FOL SALE—Choice Single Comb White Leghorn hens, one year old. \$4 dozen. Ella F. Ney, Bonner Springs, Kans.

HIGH-SCORING, PRIZE-WINNING, Cornish Indian Games, W. P. Rocks, Black Langshans. Eggs \$1 per 15. Mrs. J. C. Strong, Moran, Kans.

TO EXCHANGE—Fine pedigreed Belgian hares, also some good unpedigreed stock, for good watch, bicycle, bone mill, or good Black Langshans. Give description and price of what you have. A. S. Parson, Garden City, Kans.

HENS Setting 6 days instead of 21, and how to make 4500 yearly with 12 hens. 45 Medals, etc., for Wonderful Discovery in horse manure heat. Particulars for stamp. Scientific Poultry Breeders' Association, K Masonic Temple, Chicago.

GEM POULTRY FARM—C. W. Peckham, Proprietor, Haven, Kans. Buff Plymouth Rocks, 2 flocks. Eggs from best flock \$2 per 15. A few choice Burdick cockerels for sale. Fea Comb W. Plymouth Rocks, 2 flocks. Eggs from best flock \$2 per 15. A few choice cockerels for sale. M. B. Turkeys, 2 grand flocks. Eggs \$2 per 11. Young toms for sale.

200-Egg Incubator for \$12.00
Perfect in construction and action. Hatches every fertile egg. Write for catalog to GEO. H. STAHL, Quincy, Ill.

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From Pure-Bred, High-Scoring, Prize-Winning, **WHITE AND PLYMOUTH ROCKS BARRED...**
13 for \$1; 30 for \$2; 50 for \$3; \$5 per 100. Recipe for making and using Liquid Lice Killer, 25 cents. Write for descriptive circular.
T. E. LEFTWICH, Larned, Kansas.

STANDARD POULTRY.
Barred Plymouth Rocks, White Plymouth Rocks, Partridge Cochins, Buff Cochins, Light Brahmas, Black Langshans, Silver Wyandottes, White Wyandottes, Silver Spangled Hamburgs, Brown Leghorns, and Belgian Hares. All Our Breeding Pens of this season at Bottom Prices, also Spring Chicks. Prices now less than half of winter prices. Fine Exhibition and Breeding Stock of Rare Quality. Write Me Your Wants. Circular Free.
A. H. DUFF, Larned, Kansas.

pliances in railroading are displayed in the railway annex. In the Electrical building are to be seen all the newest discoveries as to that wonderful agent that is doing the bidding of man in the way of locomotion and light. Take in the Pan-American and forget your troubles.
A. E. JONES.
Buffalo, N. Y.

A Representative Man.
"I can't see what a man of his size wants to be crowding women away from the bargain counter for!" snapped one of the crowded.
"Madam," plaintively spoke the large man, turning his head to address her, "I am here as the representative of a family of 11 daughters."—Philadelphia Press.

Rooted in Rocks.
Willie—Teacher told us to-day that there's a certain kind o' tree that grows out o' rocks. I can't remember what it was. Do you know, Pa?
Pa—It's a family tree, I guess.—Philadelphia Press.

Her Make-Up.
Jackson—Do you know that young lady over there?
Brownson—The dress is my wife's, the parasol my daughter's, the hat my sister-in-law's, and the face is our cook's.

What's the Difference.
"Well, girls," said Uncle Silas, who was taking a chafing lunch with his nieces, "when you come down to the farm in the summer you make lots uv fun uv us because we eat in the kitchen. But I don't see ez it makes much difference whether you eat the kitchen or cook in the dining room."—What to Eat.

First Municipal Crematory.
The first municipal crematory on record has been opened in Hull, England. It is a model establishment, costing \$12,500. The charge for cremating a body is \$5. The mayor, in opening the crematory, said it was a departure from the established lines in municipal enterprise, but that it gave every promise of proving a great public benefit from sanitary and economic points of view.—N. Y. Sun.

Are You Going
to San Francisco with the Epworth League? The Union Pacific will run Special Tourist Sleeping cars every day from July 6th to July 13th. Topeka to San Francisco without charge. Rate \$5.00 for double berth. The round trip rate will be \$45.00 and tickets will be good till August 31st, 1901. Stop-overs may be secured at and west of Denver. For other information see your nearest Union Pacific Agent.

In the Dairy.

Conducted by D. H. Otis, Assistant Professor of Agriculture, Kansas Experiment Station, Manhattan, Kans., to whom all correspondence with this department should be addressed.

The Skimming-Station Operator Should Be a Man of Gumption.

S. B. PRAY.

With the event of the skimming-station of a necessity came the skimming-station operator. He came from, goodness knows where. Often he was a relative or a friend with a "pull" of some one interested in the location of the station. Again, he was an extraction engineer seeking a job during the winter and spring months. Sometimes he came from a factory, the company taking this method of cutting down their force when receipts began falling off. Very little attention was given to the ability or character of the prospective operator, for most any one can run a separator and engine, fire a boiler and weigh in milk. The operator knew nothing of testing or butter-making. All milk was the same to him just so it would run through the separator. He cared little about the welfare of his patrons or employers, being most interested in the small check that came once a month in payment of his salary. All cows were the same to him and the care of milk and the raising of feed and the proper feed for a cow were entirely beyond his ken. He thought his work done when he had his station cleaned up, and his spare time was spent in hunting or loafing. He worked on a salary and did not care whether much or little milk came to his station. Very frequently his patrons had to wait while he repaired some little breakage that should have been fixed the previous afternoon.

Happily there were exceptions, and occasionally a real good man was developed. One who took an interest in his business and had the welfare of his employer's and patrons' interests at heart and who took delight in improving upon present conditions whenever opportunity offered.

The results of the employment of these inefficient operators were frequently disastrous to the business. Many idle stations might now be in profitable operation had the right men had charge of them at first. This was not always the fault of the operator, but too often it was.

The present state of the skimming-station operator is one of evolution. The old inefficient men are being let out or else put upon commission or part commission and thus induced to improve themselves. The present tendency of the larger creamery companies is to employ men who are prepared for their work. Every student of the dairy short course of the agricultural college of the classes of 1900 and 1901, who has proven himself proficient, has been employed by some of the creamery companies of this or adjoining States at very lucrative salaries. Several more could have secured work had they been available. Thus we see that the demand is for the man who has taken interest enough to prepare himself for his work. The Dairy Age says that the "success of dairying in Kansas is now up to the farmer," and it is the business of the present skimming-station operator to apprise him of this fact. Many operators are showing what they are made of and are getting out among their patrons and rustling for milk and helping and advising them in many ways. Great opportunities are now opening up before the present operator. He has the opportunity to work up an interest in his business and become an important personage in his town. The present state of improvement only foreshadows what the future operator will be. He will be a man of more than ordinary intelligence, a graduate of some good dairy school, and a genial, good-natured fellow running over with inter-

est in his work. Much of his spare time will be spent among his patrons at their request for they will have learned that he can help them in many ways. They will be coming to him for information on nearly every subject pertaining to farm work, and in most cases their appeal will not be in vain. His judgment and opinion upon everything pertaining to dairying will be eagerly sought. In fact he and his place of business will be an agricultural educational center for the community. To the man with the necessary gumption there are great possibilities now open in this business.

Arrangement of Milk-House.

A. W. L. Jefferson, Oklahoma Territory, writes: "Can you give me an idea as to the best plan for building and arranging a milk-house to run water through from pump to stock trough?"

Our correspondent says nothing about any arrangement for separator, churn, or butter worker. For this reason it is assumed that he is a creamery patron and is interested only in keeping milk sweet until delivered to the creamery or skimming-station. For this purpose a milk-room can be built in one corner of the barn or a small building about 20x22 erected in some convenient and sanitary place near the barn. The floor and sides should be made of cement so as to be easily cleaned. The floor should slant somewhat toward the drain. A large water-tank can be set on one side the room and the water kept running around the cans of milk, escaping near the top at the farther end of the tank. Where running water is not available or the windmill is uncertain, a better arrangement would be to have several barrels or small tanks about the size of barrels. One can of milk can be set in each tank which necessitates pumping only enough water to surround each can, while if one large tank is used it will take just as much, and even more, water for one can of milk than it will for a dozen. A trough in front of these tanks can be made to conduct the water to the stock tank. This trough could be made of cement and constructed while the floor is being laid. If not convenient to do this any ordinary wooden or tin spouting will answer. An extra barrel or tank can be raised 2 or 3 feet above the top of the others and used as a reservoir for the water as pumped. Two hose connections can be made, one leading to the tanks and the other to the milk cooler. In attempting to keep milk it is always advisable to thoroughly aerate and cool it as soon as possible after milking. The milk should then be placed in closed cans and surrounded or immersed (the latter being possible with the New York style of milk can), in cold water. Where milk is kept over twenty-four hours in hot weather it will be necessary to change the water two or three times. This system has been followed at the Kansas State Agricultural College for four years, where milk has been kept sweet from thirty-six to forty-eight hours during the hot days of July and August without a particle of ice.

D. H. O.

The Extravagance of Poor Butter.

There never has been a time when there was such a widespread demand for a first-class article of country or farm butter as there is to-day. And yet the product of nine out of ten farms must be sold as "country roll" or "store packed" simply because the farmer will not study the subject of preparing his produce for the local market so that it is fit to compete with creamery butter. This is due largely to lack of knowledge, but at the same time there is an element of carelessness displayed for which the shippers themselves pay and pay dearly. There are thousands of shippers, whose butter properly prepared would net them fully 50 per cent more money, who seem satisfied to go along week in and week out with the low prices for which their stuff sells. This is unbusiness-like extravagance of the worst kind. At the expense of a little energy and brains they could double their incomes. Scores of these seem to think that there is some secret about preparing creamery butter. They excuse their own indifference by saying, "I don't know how." This is nonsensical baby talk, coming from men who otherwise show good, solid business judgment in their affairs.

And above all this, there is another view to be considered. Every package of a low grade article helps to depress the price of the top grades. This is a commercial truism beyond question. Hence every can of butter coming into a market which must be sold as "grease" or "low grade," "country roll" or "store packed" has just as much in-

fluence in bringing down the prices on "extras," "firsts," and "dairies." The shipper therefore not only injures himself but also is a factor in injuring others.—Kansas City Packer.

Notes from the College Dairy.

F. E. UHL.

On July 1 our experiment was begun in pasturing the college cows on sorghum. If this is successful the herd will still have plenty of green feed, if it is found dangerous, pasture supply will be short as there is little picking in he main pasture at this early date.

A small crop of Canadian pea and oat hay was placed in the stack in good condition the first of last week. The merits of this hay for milk production will be tested next winter.

The first arrival of the new pure-blood dairy stock was on Tuesday, consisting of two Holstein heifers and a Holstein bull from C. F. Stone, Peabody, Kans.

The college can now boast of pure-blood Holstein, Guernsey, Hereford, Shorthorn, Red Polled, Polled Angus cattle, and Poland-China, Berkshire and Duroc-Jersey swine.

The experiment with whole versus ground Kaffir-corn as feed for calves is now in progress. It may be interesting to some to know how the two lots of calves compare at the present time. For some six weeks previous to the final division of the calves, they were all fed a mixture of whole and ground Kaffir-corn, equal parts, with access to prairie hay, water, and salt. The milk feed was changed from whole to skim-milk during this time. June 13 they were divided into two lots as nearly equal as possible. The total gain for each of the two lots from May 9 to June 12 was 360 pounds. Each lot of 10 contains 4 white faces, 2 reds, 2 red and white, and 1 black. One lot has 6 heifers, the other one has 7. The calves were bought in Manhattan and vicinity. The week following the division, the grain feed of the two lots was gradually changed—one to whole Kaffir-corn and the other to ground Kaffir-corn. The average daily gain during the week ending June 19 was 1.37 pounds for each calf in the whole Kaffir-corn lot, and 1.38 pounds for each calf in the ground Kaffir-corn lot. These gains while not large, it must be remembered were made by very young calves in a changing period. All things considered we feel that the two lots are given an equal start.

Why the Silo is Needed in Kansas.

BUFF JERSEY.

I was engaged in the dairy business in Kansas for some years and made a success of it by using root crops to supply succulent food during winter months. Root crops cost too much and are of no advantage as a food over good ensilage. Kansas corn crops are especially adapted for making cheap crops of ensilage as they yield large amounts of stalks per acre. A Kansas farmer with silos and plenty of stock can rest easy as to cheap corn or hot winds. In case hot winds come when corn is about matured it can be cut and stored in silos and furnish greater value than in any other form one can handle it. We have two silos of 150 and 250 tons capacity. Last winter we fed 87 head of cattle from them daily, and the hay consumed by the 87 head was 150 pounds daily. Do you not see the advantage in this saving alone? Ensilage is the link that binds our grass periods together.

Blooded Dairy Stock for the Agricultural College.

The Kansas State Agricultural College has just purchased one bull and two heifers of the Holstein-Friesian breed from C. F. Stone, Peabody, Kans. These animals and their ancestors have made wonderful records as prize winners. The bull won first prize at St. Joe, Newton, and El Dorado, and first prize at the head of a young herd. The sire of this bull won first prize at Illinois State Fair, St. Louis, St. Joe, El Dorado, Newton, and stood at the head of first prize winning herd at each of these places. The dam of the college bull won first prize at Omaha, Des Moines, Springfield, St. Louis, and Hamlin, and was a member of the first prize herd at each place. The heifers were members of the first prize herd at St. Joe, El Dorado, and Newton, and have won a number of individual prizes.

Each of these animals take in at least two strains of the famous Holsteins, Gerben, Empress Josephine 3rd, and Metchilda.

A New Innovation Worthy of Imitation.

The farmers held a consultation meeting at W. H. Havekott's, in Berryton, on June 20th for the purpose of approx-

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imating more scientific principles in the operation of the farm dairy, which it was thought would result in the production of a purer article of milk, hence insure a better market for the same. There was a fair attendance resulting in the selection of L. C. Watters, president, and the undersigned, secretary, and the announcement of a meeting for July 11th at 8 p. m. A cordial invitation is extended to all interested to attend the July meeting.

J. M. ELSTON, Secretary.

Looked the Part.

Tommy—You wore a red suit and horns at the masked ball last night, didn't you?

Mr. Hoamly—Why, no. I went as a cavalier.

Tommy—I guess pop was mistaken, then. He said he saw you and you looked like the devil.—Philadelphia Press.

THE DOLLARS AND CENTS OF IT.

The Stock Breeders' Annual, a valuable bulletin of 40 pages, has just been published by the Kansas Farmer Company, of Topeka, Kansas. The first part consists of a discussion of the values of feeding stuffs, a table of composition and money values of all common feeding stuffs, and a discussion and a table of feeding standards. With this bulletin at hand any farmer who can "do a sum" in arithmetic can determine how to make balanced rations of the feeds he grows on his farm, or, if he has not the necessary materials, the book will show him what he can afford to pay in the market for such feeds as will enable him to make balanced rations suitable for every class of animals on the place. This part of the Annual was written by E. B. Cowgill, editor of the KANSAS FARMER.

It has been made a part of the instruction of the students in feeding at the Kansas Agricultural College, and has been copied by Secretary Coburn in one of his invaluable reports.

The second part of the bulletin contains the Kansas Improved Stock Breeders' Classified directory for 1901, compiled by H. A. Heath, Secretary. An edition of 10,000 copies has been printed. As long as they last any reader of this paper can obtain a copy for a two-cent stamp to pay for postage and mailing.

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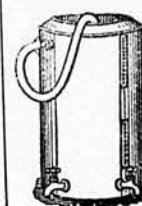
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Grange Department.

"For the good of our order, our country and mankind."

Conducted by E. W. Westgate, Master Kansas State Grange, Manhattan, Kans., to whom all correspondence for this department should be addressed. News from Kansas Granges is especially solicited.

NATIONAL GRANGE.

Master.....Aaron Jones, South Bend, Ind.
Lecturer.....N. J. Bacheider, Concord, N. H.
Secretary.....John Trimble, 514 F St., Washington, D. C.

KANSAS STATE GRANGE.

Master.....E. W. Westgate, Manhattan.
Lecturer.....A. P. Reardon, McLouth.
Secretary.....Geo. Black, Olathe.

Well Said.

The farm will bring you a living, all the comforts of life, and perhaps many of its luxuries, but only after active co-operation on your part. The grange, like the farm, but furnishes the opportunity. Its usefulness to us depends entirely upon the use we make of it. We can never expect to reap the maximum result by a minimum effort. Economy of effort never shows up in net profit. The grange is not an institution that agrees to deliver something for nothing; but to the American farmer as an individual, and to the American farmers as a class, for the investment of a small portion of time and money it can truthfully promise him a sure dividend unequalled by any other institution or medium accessible to him to-day.

S. E. STRODE, Lect. O. S. G.

Old Home Week in New England.

The New England States are pushing "old home week" with considerable energy this year. It consists in getting every native of the State that has moved elsewhere to make a visit to his "old home" during a certain season of the year. We notice nearly every State grange in New England has indorsed this movement and is aiding in every way to make it successful. This plan is taken to enlist their support in keeping up the farms of their childhood. No less than two hundred thousand invitations have been sent out from Vermont asking every former Green Mountain boy to return to his native State during the week of August 11-18, as there will then be held the "old home week" of Vermonters. The indications are that the celebration will be notable, as the loyalty which every Green Mountain man has for his State is marked in a high degree. The period named includes August 16, "Battle of Bennington" day.

Oak Grange No. 665.

At an all day meeting of Oak Grange, June 19, initiatory preparations were begun for the visit of the national lecturer which will occur July 19. Various committees were appointed whose business it will be to attend to all details that nothing may be left undone which will contribute to the success of the meeting.

An all day picnic has been decided on as that will give visiting patrons an opportunity to become acquainted with us, and all of us to meet, socially, Brother Bacheider.

The all day meeting, mentioned above was as usual, an interesting one. The dinner, a prominent feature of our day grange, was an elaborate one in quality and in quantity, and in daintiness of serving. A feast seems to be a necessary adjunct in promoting that socially, united feeling brotherhood, without which a grange can not stand, at least as a shining light in a community.

The grange home should be a magnet, drawing all patrons thither with unfailing enthusiasm as often as the day returns for regular meetings, and, yet, I question, if the most deluding shortcomings of the granges in Kansas were made manifest—thrown like a picture, upon canvas, if non-attendance would not swell to monstrous size, blotting out all else.

At this season, the necessity for remaining away seems strongest. But recall your experiences and you will see that time thus spent was not lost, that business moved as smoothly while you were gaining rest, both physically and mentally. Better dissolve, surrender your charter than become "The Light that Failed."

When there is nothing more absorbing on hand a study of the Constitution and By-Laws and the 'Declaration of Purposes,' might prove a "news item" to even many of the members.

Emergencies are a benefit in uniting members for a purpose. I have heard it mentioned by our pioneer members, that Oak Grange was never so prosperous as when raising money to pay off a debt. I do not advance this idea as a good

precedence to follow, but to vindicate the saying that "In union there is strength." Raising money for repairs, a library, or grange paraphernalia, is a progressive scheme to unite on.

KITTIE J. MCCRAKEN,
Secretary.

Why the Grange Was Organized and What it Has Accomplished.

We are pleased to see an article on the grange in the April Forum from our co-worker Kenyon L. Butterfield, of Michigan. The article is one of merit and will prove beneficial to the order. It concludes as follows:

"The grange was born of two needs, one fundamental and the other immediate. The fundamental need of agriculture was that farmers should be better educated for their business; and the immediate need was that of cultivating the spirit of brotherhood between the North and the South. The latter need was unquestionably a powerful factor in the destruction of the sectional spirit, and no longer exists; but the fundamental need still remains and is sufficient excuse for the grange's existence to-day.

"To enumerate the achievements of the grange would be to recall the progress of agriculture during the past quarter of a century. It has been a motor force in many helpful movements, and in many ways has organized and incorporated the best thought of the most intelligent farmers about means for rural advancement. It has been an integral part of and a most potent factor in the expansion of rural farm life.

"The greatest achievement of the order is that it has taught the farmers of America the value of co-operation and the power of organized effort. The lesson has not been fully learned, it is true, but the success of the institution testifies that it is possible for farmers to work in harmony. It is worth observing that this result has been achieved on conservative lines. It is comparatively easy to organize on radical lines; easy to generate enthusiasm by promising some great reform; easy to influence self-interest by picturing millennial conditions, especially when the pocket is touched. But quite different is it to arouse and sustain interest in a large popular organization whose object is education, whose watchword is self-culture. Of course it would be but half truth to assert that the order places all its emphasis on the sober problems of education. Agitation has had its place; the hope of better things for the farmer to be achieved through legislation and business co-operation has been an inspiration to activity; but the noteworthy fact remains that it has secured

a fair degree of organization and co-operation among farmers chiefly by appeals to their larger and nobler interests."

A College Tall Men's Club.

The University of Pennsylvania has a Tall Men's Club.

Twelve hardy students of six feet two inches and over, constitute the active membership, which is limited to an aggregate height of eighty feet. Six other men, who are termed "shorties" by the club, being only six feet one inch high, are allowed to be associate members.

The object of the club is to promote goodfellowship among tall men. Some of the most prominent men in the college are in the organization, among them being T. Trouxton Hare, the football player.

A dance will be given soon, to which only girls of five feet one inch in height or under will be invited.

The names of the officers are the Moon Hitter, the Sky Scraper and the Ceiling Duster.—New York Mail and Express.


Pleased With His Lawyer.

"While I was in the state attorney's office," said ex-Deputy State's Attorney William C. Smith, "I had to try a case against an otherwise honest German for selling liquor on Sunday. The defendant had retained a certain member of the bar who is noted for his high C voice. During this attorney's rather loud address his German client looked

CHEW

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Best



The chewing tobacco with a conscience behind it.

No Premiums!
Wetmore's Best sells on its merits.

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St. Louis, Mo.

The largest independent factory in America.

...MEN...

Book for men only, explaining health and happiness sent free in plain envelope. Address
CHICAGO MEDICAL INSTITUTE,
110 West Sixth Street, Topeka, Kansas.

on in rapt admiration, and he was heard to remark:

"Ach, dot's der kind of lawyer to haf, yet."

"Why?" he was asked.

"'Because,' was the reply, 'he holers so loud he scares der jury.'"—Baltimore Sun.

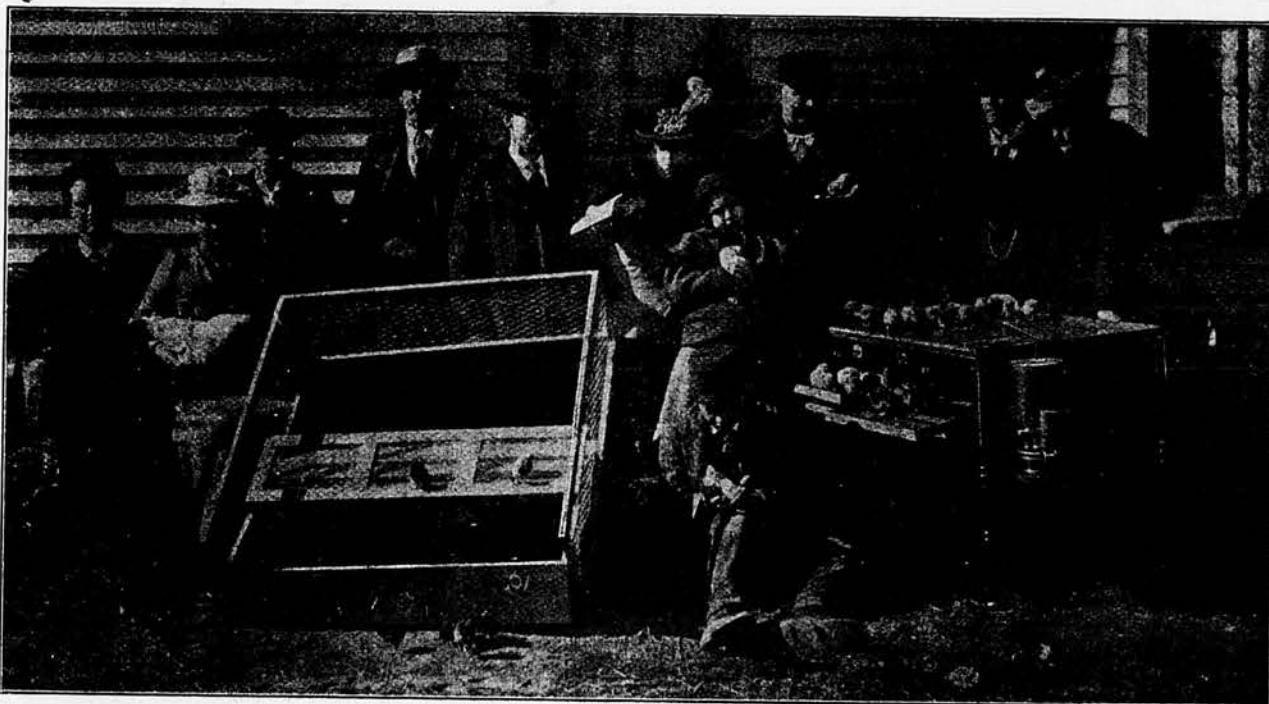
Rise of the Dead Sea.

A marked rise in the level of the Dead Sea has been noted. The ruin, El Bahr, that stood like an island near the mouth of the River Jordan, is now completely under water. A broad lagoon has formed on the north side of the Jordan delta. The water does not sink in summer, and it is surmised that the whole bottom of the Dead Sea has been raised by volcanic action.—N. Y. Times.

A Logician.

"Little boy," said the kindly old gentleman, "you must not cry. You know it is a waste of time to cry." And the little boy, who is from Boston, dried his tears long enough to remark:

"And it is also a waste of time to tell anybody it is a waste of time to cry."—Washington Star.



AT THE GREAT BEND POULTRY SHOW.

The above photo was taken at the Great Bend Show. The Sure Hatch Incubator and Common Sense Brooder was exhibited by Mr. and Mrs. T. D. Stradley (the Partridge Cochon breeders).

We have placed over 11,000 machines this season, for over six weeks in our busy season we were from 500 to 800 machines behind orders. Wherever we sent an incubator, it called for more, until it was impossible to fill orders. Our incubators and brooders are now used in every State and in several foreign countries. To meet the demand the coming season we have doubled the size of our factory and have a full crew of mechanics all summer. For the con-

venience of and to save money for our eastern patrons we have established a branch house at Columbus, Ohio. We have secured the services of L. P. Harris (the well-known poultry judge), to manage our Sure Hatch Poultry Farm. Mr. Harris will also take charge of the Poultry Investigator, a new poultry paper that will come out with its first number in September. While all this is going on the Sure Hatch office force is getting material together for the next Sure Hatch Catalogue. We promise a good one next time. We have nearly 200 handsome photographs of poultry yards, etc., from all parts of the country, including Canada, Cuba, etc. It will be out November 1st, and will contain some 165 pages. We have a new machine this

season and some valuable improvements in the regular Sure Hatch. Our new machine is a 75 egg size, made on the same plan as the Sure Hatch, (except smaller and without legs). It is for the fancier and those who wish to hatch out a batch of early ones. As an incubator, it sets on a table, bureau, or box, then by removing the tray and setting it on the floor or ground it is an ideal brooder. When it comes to improved methods we are up-to-date.

Don't forget our next catalogue. You can register with us for it any time. We are not going to charge for it, neither can we send it unless it is sent for. Thanking the poultry raisers for their patronage, we are, Very respectfully,
SURE HATCH INCUBATOR CO.,
Clay Center, Neb., or Columbus, O.

MARKET REPORTS.

Kansas City, July 8.—Cattle—Receipts, 8,935; calves, 711. The market was slow and steady to 10 cents lower. Representative sales:

Table with columns: No., Ave. Price, No., Ave. Price. Rows include STEERS and TEXAS AND INDIAN STEERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include TEXAS AND INDIAN COWS and SOUTHWEST STEERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include WESTERN STEERS and NATIVE HELPERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include NATIVE COWS and NATIVE FEEDERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include NATIVE STOCKERS and STOCK COWS AND HELPERS.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Sheep—Receipts, 1,258. The market was steady to 5 cents higher.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Chicago Live Stock.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include St. Louis Live Stock.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Omaha Live Stock.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Kansas City Grain.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Chicago Cash Grain.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include St. Louis Cash Grain.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Kansas City Produce.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Butter—Creamery, extra fancy separator.

Table with columns: No., Ave. Price, No., Ave. Price. Rows include Poultry—Hens, live, 6½c; roosters, 15c each; broilers, 10@13c lb; ducks, young, 6c; turkey hens, 6c; young toms, 4c; old toms, 4c; pigeons, \$1.00 doz.

6c; turkey hens, 6c; young toms, 4c; old toms, 4c; pigeons, \$1.00 doz. Choice scalded dressed poultry 1c above these prices. Potatoes—New, 85@95c bushel, sacked; home grown, 90c per bu. Fruit—Blackberries, \$1.25@1.75 per crate; gooseberries, \$1.00 per crate; cherries, \$1.50 @1.75 per crate; raspberries, black, \$1.25@1.75 per crate. New apples, \$1.00@1.10 per bushel crate; currants, per crate, \$1.50@1.75. Vegetables—Tomatoes, Texas, \$1.85 per four-basket crate; navy beans, \$2.25@2.30 bushel. Cabbage, \$2.00@2.75 per cwt. Onions, new, 90c@1.00 bu; cucumbers, \$1.00@1.50 per bushel crate. Melons—Texas cantaloupes, per bushel crate, \$1.25@1.75; watermelons, per dozen, \$2.50@4.00.

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344 BOARD OF TRADE, KANSAS CITY, MO.

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"Wanted," "For Sale," "For Exchange," and small 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. Cash with the order. It will pay. Try it! SPECIAL.—Until further notice, orders from our subscribers will be received at 1 cent a word or 7 cents a line, cash with order. Stamps taken.

CATTLE.

FOR SALE—At farmer prices, UJ1 Stoke Pogis 57621 A. J. C. C., dropped December 29, 1898; also Marie's Perfection 152062, dropped March 14, 1900, bred June 8. For prices and pedigree, address Edward Hunzicker, Colony, Kans. THIRTY HEAD of high-grade Herefords for sale, consisting of 8 head choice yearling heifers, sired by Roy Wilton 79085, 9 head high-grade Hereford cows, with calves by side, sired as above; also 5 head high-grade cows, with calf by same bull. E. F. Nevins, Blue Rapids, Kans.

HORSES AND MULES.

LEAVENWORTH COUNTY JACK FARM.—Seven mammoth jacks for sale. O. J. Corson, Potter, Kans. PROSPECT FARM—CLYDESDALE STALLIONS, SHORTHORN CATTLE and POLAND CHINA HOGS. Write for prices of finest animals in Kansas. H. W. McAfee, Topeka, Kans.

FARMS AND RANCHES.

FREE A book of statistics, information, and 200 E. Kans. farm descriptions. Write G. E. Winders Realty Co., Ottawa, Kans.

FOR SALE OR TRADE—160-acre farm—100 acres in cultivation; 6-room house, outbuildings, 3 miles from Florence, Kans., first-class spring water. Price \$16 per acre. For full particulars, write Jno. Fox, Jr., New Cambria, Kans.

FOR SALE—Thirty-two-acre farm only 3½ miles from Topeka, all bottom land, 5 acres fine timber, pasture, living water, all well fenced, small new house. Price very cheap for location. Possession given in 30 days if desired. Present crop goes with farm. John G. Howard, 1107 West 8th Street, Topeka, Kans.

SHEEP.

1,500 sheep and lambs for sale, in bunches to suit. H. W. Otten, Oakley, Kans.

MISCELLANEOUS.

THRASHING OUTFIT in northern Iowa for sale or trade for Kansas land. A bargain. Address Marion Smith, Dwight, Kans.

FOR SALE—Good, clean alfalfa seed at \$8.20 per 2 bushel lots, F. O. B. in Leoti, Wichita County, Kans. Jesse W. Cook.

WANTED—Situation on a stock farm or ranch. Capable to take entire charge if required. Best of references. Box 25, Central City, Kans.

FARM DOGS—Scotch Collies ready to ship, from 2 to 4 months old, price \$4 to \$6, good stock, good individuals. A. P. Chacey, North Topeka, Kans.

TO EXCHANGE—Have clean staple stock of dry goods, shoes, and furnishing goods about \$2,500, doing fair business. Wish to dispose of stock soon. Will take \$2,000—in land or improved property; must have \$500 cash; will invoice at wholesale cost. Address, 1411 East 12th Street, Kansas City, Mo.

WANTED—Man and wife of experience to live on stock and hay ranch; 1 to 5 extra men to care for. References given and required. Mathews Bros., Coolidge, Kans.

FOR SALE CHEAP—Cocker Spaniel Pups. W. H. Richards, V. S., Emporia, Kans.

SCOTCH COLLIE PUPPIES—Of pure breeding. Will be sold cheap if ordered at once. Write now to O. A. Rhoads, Columbus, Kans.

WOOL WANTED—We want, and will pay the highest market price in cash for 500,000 pounds of wool. When you write for prices send us a sample of your wool by mail to Oakland, Kans. Be sure and get our prices before you sell. Topeka Woolen Mill Co.

FOR SALE—Feed mills and scales. We have 2 No. 1 Blue Valley mills, one 600-pound platform scale, one family scale, and 15 Clover Leaf house scales, which we wish to close out cheap. Call on P. W. Griggs & Co., 208 West Sixth Street, Topeka, Kans.

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The Stray List.

For Week Ending June 27. Cherokee County—S. W. Swinney, Clerk. MARE—Taken up by C. McDonald, in Garden tp., June 17, 1901, one light bay mare, 10 years old, weight 900 pounds, dm star in forehead, left front foot and left hind foot white; valued at \$30. Thomas County—Henry M. Thiel, Clerk. COW—Taken up by Frank Bedford, in Kingery tp., May 8, 1901, one light red cow, round hole through left ear, and split from there to the end, weight 800 pounds; valued at \$25. Greenwood County—C. D. Pritchard, Clerk. MARE—Taken up by W. H. Combs, in Pleasant Grove tp., (P. O. Neal), June 12, 1901, one dark sorrel mare, 10 or 11 years old, large white spot on forehead, thoroughbred in left gambel joint, branded, supposed to be inverted G on left shoulder.

For Week Ending July 4. Cherokee County—S. W. Swinney, Clerk. HORSE—Taken up by E. C. Hutchison, in Shawnee tp., June 15, 1901, one bay horse, 9 years old, 5 feet 2 inches high, weight 1,200 pounds; valued at \$25. Also one bay mare, 7 years old, 5 feet high, weight 950 pounds; valued at \$65.

For Week Ending July 11. Cloud County—A. R. Moore, Clerk. PONY—Taken up by A. R. Tucker, in Meredith tp., (P. O. Meredith), June 19, 1901, one roan mare pony, 12 years old, branded O I on left hip, and N 8 on left shoulder; valued at \$20.

\$100.00 REWARD. Dr. MANLEY'S SPAVIN REMEDY. Has no equal for Ringbone, Spavin, Puffs, and All Bony Enlargements. Full instructions sent with each package. \$100 reward for any case this remedy fails to cure. Delivered to any Postoffice in the U. S. for price \$1.00. Prepared only by Dr. W. S. MANLEY D. V. S., Address 207 East 4th Street. Pittsburg, Kans.

THE FARMERS' MUTUAL HAIL ASSOCIATION, OF TOPEKA, KANSAS. INSURES GROWING CROPS AGAINST LOSS OR DAMAGE ...BY HAIL... This Association has complied in every particular with the new and stringent laws passed by the last legislature governing hail insurance, and furnished the State of Kansas with a \$50,000 bond, and is now fully authorized by the Superintendent of Insurance to do business in Kansas. This Association offers you the protection you want at moderate cost. If our agent has not called on you drop us a line and he will do so. Address Columbian Bldg. THE FARMERS' MUTUAL HAIL ASSOCIATION, Topeka, Kans.

PILES--No Money till Cured. All diseases of the rectum treated on a positive guarantee, and no money accepted until cured. Send for free 200-page book; a treatise on rectal diseases and hundreds of testimonial letters, valuable to anyone afflicted. Also our 64-page book for women; both sent free. Address, DRS. THORNTON & MINOR, 1007 Oak St., Kansas City, Mo.

To Colorado and Utah VIA SANTA FE, At Rates Lower Than Ever Before. On Sale July 1 to 9, September 1 to 10. Denver, Colorado Springs, and Pueblo and return, \$15.00. Glenwood Springs and return, \$25.00. Salt Lake City and Ogden, \$30.00. June 18 to 30, and July 10 to August 31, round trip tickets to same points as named above will be sold at one fare plus \$2 for round trip. A Pullman Observation Sleeper runs between Kansas City and Colorado Springs on Santa Fe trains No. 5 and 6. The observation end is for free use of all Pullman passengers. For further particulars, rates on other dates or to other places, or for free copy of "A Colorado Summer," write to, or call on T. L. KING, TOPEKA. Agent, the Atchison, Topeka & Santa Fe Railway.



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An Illinois farmer said that after harvest he had fully 200 bushels of loose oats on the ground that he could not secure any benefit from, because the fence around the field would not turn hogs. Figure the loss for yourself. He also said, all this would have been saved if he had used the Kitzelman Woven Wire Coiled Spring Fence, and the value would have gone a long way towards paying cost of the fence. With the Duplex Machine any farmer can make it himself at the actual cost of the wire. Catalogue free for the asking. KITZELMAN BROS., Box 137, Muncie, Ind.

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This is a genuine offer made to introduce the Peoples Cream Separator in every neighborhood. It is the best and simplest in the world. We ask that you show it to your neighbors who have cows. Send your name and the name of the nearest freight office. Address PEOPLES SUPPLY CO., DEPT. X, KANSAS CITY, MO.

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\$25 ON 5 TON IS WHAT YOU CAN SAVE We make all kinds of scales. Also E. B. Pumps and Windmills. BECKMAN BROS., DES MOINES, IOWA.

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Full sizes; beautiful flower decoration and rich gold bands. Write us at once and we will send a sample set. The Acme Supply Co. P. O. Box 506 East Liverpool, O.

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Full colonies shipped any time during summer and safe arrival guaranteed. It will pay you to try my stock of Italian bees in the Latest Improved Hives. Nothing will double in value quicker. A. H. DUFF, Larned, Kansas.

Best Pulley On Earth. AMERICAN CORN AND FODDER SHOCK COMPRESSOR
HOLDS while you tie. Does not cut the rope. Strong, Simple, Durable. Write for Price List. J. B. Hughes, Greensburg, Ind.

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EXCEL ALL OTHER MAKES. We can prove it, if given a chance. Send for Cat. No. 49 Tells all about it. THE E. W. ROSS CO., SPRINGFIELD, O.

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STEEL WIND MILLS, STEEL TOWERS PUMPS, and CYLINDERS TANKS, and FITTINGS OF ALL KINDS. Address: Kirkwood Wind Engine Co. ARKANSAS CITY, KANS.

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The Gem Full-Circle Baler, lightest, strongest, cheapest baler. Made of wrought steel. Operated by 1 or 2 horses. Bales 10 to 15 tons a day. Sold on 5 days trial. Catalogue free. Address GEO. ETEL CO., Quincy, Ill.

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The best \$2.00 (and \$2.50 with bath) Hotel in America. W. J. KUPPER, Proprietor. CLARK D. FROST, Manager. KANSAS CITY, MO.

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The fast trains of the Union Pacific reach San Francisco thirteen hours ahead of all competitors. If you are in no hurry take a slow train by one of the detour routes, but if you want to get there without delay take the historic and only direct route, the Union Pacific.

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Daily June 18th to Sept. 10th, 1901

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FROM Missouri River Points to Denver, Colorado Springs and Pueblo
\$15.00 July 1 to 9 June 18 to 30
Sept. 1 to 10 \$19.00 July 10 to Aug. 31
Similar reduced Rates on same dates to other Colorado and Utah Tourist Points.
Rates from other points on Rock Island Route proportionately lower on same dates of sale.
Return Limit October 31, 1901.

The Superb Train COLORADO FLYER
Leaves Kansas City daily at 6:30 p. m., Omaha 5:20 p. m., St. Joseph 5:00 p. m., arriving Denver 11:00 a. m., Colorado Springs (Manitou) 10:35 a. m., Pueblo 11:50 a. m. Write for details and Colorado literature. E. W. THOMPSON, A. G. P. A., Topeka, Kans. JOHN SEBASTIAN, G. P. A., Chicago.

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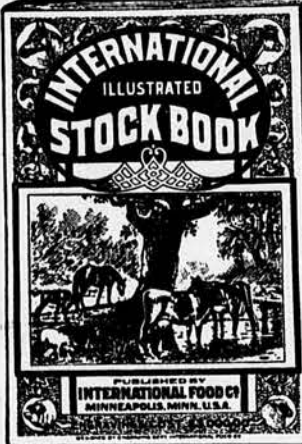
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All sorts of crops are being grown, and they are large crops, too. Reduced rates are offered the first and third Tuesdays of each month, and these events are called low rate Homeseekers' Excursions. Literature on Missouri, Kansas, Arkansas, Texas, and on Zinc and Lead Mining, will be mailed free on application to H. C. Townsend, General Passenger and Ticket Agent, St. Louis.

Pullman Ordinary Sleeping Cars for Tourists are the most comfortable, commodious means of travel for large parties, intending settlers, homeseekers, and hunting parties.

These cars are run on the Union Pacific daily from Nebraska and Kansas points, and are fitted up complete with mattresses, curtains, blankets, pillows, etc., requiring nothing to be furnished by the passengers. Uniformed porters in charge of the cars, are required to keep them in good order, and look after the wants and comforts of all passengers. The cars are new, of modern pattern, and are almost as convenient and comfortable as first-class Palace Sleepers. For full information call on or address, F. A. Lewis, City Ticket Agent, 525 Kansas Avenue, J. C. Fulton, Depot Agent.

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The worst possible spavin can be cured in 45 minutes. Curbs, splints and ringbones just as quick. Not painful and never has failed. Detailed information about this new method sent free to horse owners. Write today. Ask for pamphlet No. 12. FLEMING BROS., Union Stock Yards, Chicago, Ill.

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If you write us and answer 3 questions: 1st—Did you ever use "International Stock Food" for Horses, Cattle, Sheep or Hogs? 2nd—How many head of stock do you own? 3rd—Name this paper. This book contains 133 Large Colored Engravings of Horses, Cattle, Sheep, Hogs, Poultry, etc., with a description of the different breeds. The editor of this paper strongly endorses book. It also contains a very finely illustrated and Valuable Veterinary Department. This engraving shows the beautiful design of outside cover which is printed in 6 brilliant colors. The size of this book is 9 1/2 by 6 1/2 inches, and the engravings cost us over \$3000.00.

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OF
180 PURE-BRED POLAND-CHINAS.
MAPLE GROVE HERD, OWNED BY HIRAM SMITH,
AT COLWICH, SEDGWICK COUNTY, KANSAS, TUESDAY, JULY 16, 1901.
We have sold our farm, and will dispose of our herd of Pure-bred Poland China Hogs without reserve. I have been in the pure-bred hog business a number of years, and have selected and bred the very best, and think I have now one of the best herds in the State in both individual merit and breeding. The herd is headed by the two fine herd boars, Black Chief 42357, he by Black Joe 28603, and out of Bettie Risk 77928, and Ideal U. S. 48259, he by Chief of All 45389, and out of Elith Ideal 110750, and as listed by Perfect I Am 50767 Vol. XXIII, he by Anderson's Perfect 4727, he by Perfect I Know 46493, and out of Bass King 121124; and 26 brood sows as equally well bred, and 150 this spring's pigs from the above boars and sows; also 2 boars of last fall farrow.
COL. J. N. HARSHBERGER, Auctioneer, Assisted by J. P. McCORMICK.