

KANSAS FARMER



Volume XLIV. Number 26

TOPEKA, KANSAS, JUNE 28, 1906

Established 1863. \$1 a Year

REBATES.

The day of trouble for railroads which have given rebates to favored shippers and for shippers who have received the rebates is at hand. The law under which the prosecutions have been brought has been in the U. S. Statutes for a good many years. It required the firm will of a "square-dealer," like President Roosevelt, behind the officials whose duty it is to enforce the law before it became more than sounding brass or tinkling cymbal, useful only for beguiling partisans at election times. But last week in the United States Court, at Kansas City, several large concerns were found guilty and sentenced under the law. Judge Smith McPherson assessed a fine of \$6,000 and imposed a jail sentence of four months on one rebater. Another was fined \$4,000, with an imprisonment term of three months. Five corporations were fined \$15,000 each. The individual cases were tried under the conspiracy laws of the United States, and the result establishes an important precedent in the proceedings against violators of the traffic laws.

It is stated that others are to be proceeded against. The following sentences from Judge McPherson's remarks are significant:

"The corporation that grants concessions is neither more nor less guilty than the party who receives such benefits, and the form of the indictment can not change this any more than in the case of one who steals and one who knowingly receives stolen goods. Railroads and shippers must be treated alike in cases wherein they violate the Elkins law.

"This is so both under the law and under any code of morals. Both shippers and the railroads must understand that, however artful the scheme, there is equal intelligence, which will uncover and expose its nakedness. And if railroads and shippers doubt this, they will do well to remember that they are playing against stakes of large fines and judgment of imprisonment. And in playing the game they take all the chances."

The evidence showed that other concerns than those tried and punished have been guilty of receiving rebates.

One firm received rebates in the year 1904, \$5,581.56, and in the year 1905, \$2,639.04, making a total for two years of \$8,220.60.

Another firm received rebates in less than one year of \$1,372.57.

Another firm received rebates of \$9,300 in four years. They were to receive \$10,000.

Another firm received rebates of \$2,000 a year for four years, which the head of the concern testified was satisfactory.

Another firm received as rebates for years 1903, 1904, and 1905 the large sum of \$44,566.

There were contracts with other Kansas City concerns, but the amounts of rebates were not uncovered, by reason of deaths and absences in Europe. A St. Louis firm received rebates of \$10,000 in four years.

An Omaha company received as re-

en to absorb the wealth of the country are largely the results of rebates and other unfair advantages that have been forced or otherwise secured from the railroads. Some communities have been built up and others torn down by the same pernicious agency. The people

combined to mark an event that will not soon be forgotten by those present.

The Tebo Lawn Shorthorns, which were brought into existence by the brains and money of Col. G. M. Casey, and which were made famous by Ed. Mitchell, were here scattered to the four winds and blotted from existence as a herd. The general feeling of sadness felt by all at the thought that this herd had ceased to exist as a unit was overcome by the pleasing knowledge that these animals were dispersed to widely separated sections where each would become the nucleus for a new herd of like quality. The possibilities for good to the country at large by this spreading of the good seed for future growths can not be estimated.



Choice Goods 186802. Four times Grand Champion Shorthorn bull of America, being sold by Col. F. M. Woods at the Kansas City Sale Pavilion, June 19, 1906.

bates about \$1,000, used to help educate a daughter of one of the proprietors.

As to these, Judge McPherson remarked:

"I assume all these concerns will be proceeded against for receiving these unlawful rebates, which can be done either by indictment or information, as the last vestige of the plea of immunity for corporations has been wiped out by the decision of the Supreme Court of the United States of March 12, 1906, in the case of Hale vs. Henkle."

The rebate or any other scheme by which some patrons of a common carrier are given better rates than are accorded to all gives an unfair advantage to the favored at the cost of the general shipper. This practice was first entered into on a large scale with the Standard Oil Company, and enabled the establishment of a monopoly which crushed its competitors and is now a menace to our institutions.

Advocates of reduced rates have been met with the showing that carriers were making only moderate incomes on their investments and the claim that reductions would be confiscatory. It now appears that immense revenues have been given in rebates to favored shippers. How much of the real danger of bankruptcy has resulted from this dissipation of revenues has not been shown, but it will be well if in examining pleas of unconstitutionality of rates, the courts hereafter inquire into the uses made of the revenues yielded by the traffic.

The top-heavy fortunes which threat-

are behind the President in demanding that these unlawful practices cease.

A HISTORICAL PICTURE.

On this page THE KANSAS FARMER presents its readers with the only picture of the kind in the world. It shows Col. F. M. Woods, the most famous live-stock auctioneer in America, in the act of selling Choice Goods, the most famous Shorthorn bull in America. This sale occurred at the dispersion of the Tebo Lawn Herd of Shorthorns, the most famous Shorthorn herd in America, at Kansas City, June 19, 20, and 21, 1906. Just in front of the bull and leaning against the desk stands Ed Mitchell, who has managed Tebo Lawn and won its prizes for years. At the end of the desk and the second person to the right of Mr. Mitchell stands B. O. Cowan, Assistant Secretary of the American Shorthorn Association, and known wherever good Shorthorns are to be found.

The representatives of the best agricultural and live-stock papers of the West occupy the low desk in front of Colonel Woods and the high desk at his right and left. The audience is made up of the largest number of Shorthorn breeders that ever assembled, upon any occasion, in the West and probably the largest that ever assembled in the United States.

The scene was impressive. Here occurred an epoch-marking event in Shorthorn history. The vast crowd of breeders, the eloquence of Colonel Woods, and the magnificent bull, which stood as the center of attraction, all

LINE ELEVATORS NEXT.

The United States Senate has ordered an investigation by the Interstate Commerce Commission covering the entire "line elevator" business. The resolution directing the inquiry is as follows:

"Resolved, That the Interstate Commerce Commission be directed to make a thorough investigation of the elevator, grain-buying, and forwarding business of this country, to determine to what extent special favors have been granted, the influence which the alleged monopolizing of this branch of business has had upon the market, the injury it has worked to the grain-producers, the extent to which the railroads, their officers, directors, stockholders, and employees own or control the grain-buying and grain-forwarding companies, and the manner in which these railroads, their officers, directors, stockholders, and employees secured their holdings in these grain-buying, storing, and forwarding companies and to report the same to Congress at its next session."

It has been broadly charged that the iniquities of the line-elevator system have placed the local grain markets beyond the pale of competition, and that prices of grain paid to farmers have been depressed several cents below what the general markets have warranted. The farmers' independent movement has resulted from this state of affairs. But the farmers' companies have been at a disadvantage on account of the special favors enjoyed by the line companies. The investigation is timely.

A DRY-FARMING ASSOCIATION.

The annual meeting of the Cooperative Experiment Association of the Great Plains Area was held last week at Lincoln, Neb. A large number of distinguished agriculturists from Washington, D. C., and the Great Plains area were in attendance and participated in the discussion of the subject of dry-land farming. The Great Plains

area is designated as all the country between the 98th meridian, the east boundary, and the 104th meridian on the west, a distance from east to west of 300 miles. It extends as far north as the boundary line between the United States and Canada, and from this line a distance of 1,100 miles south. The area takes in all of the States of North Dakota, South Dakota, Nebraska, Kansas, and a portion of the States of Colorado, Oklahoma, and Texas.

Prof. T. L. Lyon, associate director of the Nebraska Experiment Station, spoke on the results in modification of wheat and corn where the seed was taken from a more humid country to a less humid district. He stated that, according to experiments in this State, crops grown from seeds sent from Eastern States do not give as great results as their previous performance in the humid States. Wheat grown in Kansas and Nebraska is higher in protein than that grown in Iowa and Ohio. This point the speaker illustrated with a chart showing the results of an experiment with grain from these States.

Prof. W. H. Olin, of Colorado, spoke on the subject, "Seed-Selection Essential in Crop-Production Under Semi-Arid Conditions." L. J. Briggs, of the Bureau of Plant Industry at Washington, D. C., in his address told of proposed physical investigations in connection with the cooperative cultivation experiments. "Crop-Production in Western Kansas," was the subject of O. H. Elling, of Fort Hays, Kans. L. A. Fitz, of the Bureau of Plant Industry, in his talk presented some essential methods and varieties for the hard winter wheat district.

The Cooperative Experiment Association of the Great Plains Area was organized at a meeting held at Washington, D. C., November 15, 1905. Its purpose is to bring into closer touch with each other the men engaged in experimenting and investigating in an area having like conditions of soil, and who are interested in the climatic and economic problems in connection with agriculture, and the systematizing, unification, and coordination of their work.

The following officers were elected for the ensuing year: Prof. E. A. Burnett, of Nebraska, who acted as chairman of the meeting, was elected president; Prof. J. T. Willard, of Kansas, first vice president; Prof. J. H. Shepard, of North Dakota, second vice president; and E. C. Chilcott, of the Department of Agriculture at Washington, D. C., secretary. The association has no treasurer, as so far there has been no necessity for this office. All expenses of the association are paid by the individual members or the institutions which they represent. The executive committee is composed of Pres. E. R. Nichols and Prof. A. M. TenEyck, of the Kansas Experiment Station, and Secretary E. C. Chilcott, of Washington. It was decided to hold the next summer meeting at Manhattan, Kans.

WEATHER AND CROP REPORTS.

EDITOR KANSAS FARMER:—I wish to make a vigorous kick against the Weather Bulletin as dished out to us in THE KANSAS FARMER this season. This "Climatological Data" report, I think, is rather hifalutin and long in

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name but decidedly short in value. What is of far greater interest to us than precipitation and temperature is the exact condition of the crops, such as we received in these bulletins heretofore. While this information pertains only to this State, yet it has some bearing on the proper disposal or marketing of the farmers' crops, and he should certainly have an equal show with the grain-speculator who is always well posted on crop conditions. I believe that it would be well for farm papers, and farmers as well, to make a "roar" to the proper authorities at Washington to have this bulletin given us in the old way. W. E. KLINE, Coffey County.

The editor is in full sympathy with the contention of this correspondent. The reports of the weather are valuable, but when the reports of the condition of crops were included, the value was fourfold greater. The change appears to be due to some jealousy between the Statistical Bureau and the Weather Bureau of the Department of Agriculture at Washington. The Statistical Bureau issues a monthly report of the conditions of crops, but this is incomparably less valuable than were the weekly reports by counties throughout the country. The Weather Bureau has its observers excellently organized, and can include the crop reports without additional cost. It is hoped that Secretary Wilson will rise to the occasion, apply the necessary discipline in his bureaus, and see that the valuable "Weather-Crop Bulletins" again go to the people.

FAIRS CAN BE CLEAN.

The question of the character to be given to coming fairs is receiving attention from people who would like to attend and exhibit at "clean" fairs, but who will be chary about insulting their families by taking them into the presence of such demoralizing features as are too prevalent. Missouri has for several years had an absolutely clean State fair. There are some clean county fairs. If any State or county organization is unable to finance its fair without selling out to indecency, such organization deserves to go into bankruptcy.

The gambling features are insisted upon by the gamblers. Why any organization of decent men will sell concessions to be used by gamblers or which are likely to be used by gamblers is past conception. It is reported that at least one management has agreed to admit a gambling feature in the sale of its tickets and that the county attorney and the mayor of the town have agreed to keep hands off. Such arrangement probably will and should deter self-respecting farmers from attending.

It is useless to claim that these demoralizers are needed to promote attendance. People go to a fair not to be fleeced and to sacrifice their self-respect, but to see the exhibits and to meet their friends. They enjoy the races, too, but the great majority are offended at gambling features, coarseness, and vulgarity. There is no doubt but that any fair in Kansas that will make it certain and certainly known that besides having a good fair its fair will be entirely devoid of demoralizing features will secure an attendance of farmers and farmers' families such as will surprise the gate-keepers.

ATTENTION, DUROC-JERSEY BREEDERS.

In order that a great showing may be made of your splendid breed of hogs at the American Royal this fall, it is desired that the breeders of Duroc-Jersey swine in Kansas shall unite with those of Missouri in raising a small fund for special premiums for this breed and for the entertainment of all Duroc-Jersey breeders who may attend the show. For this purpose, Geo. Kerr, Route 3, Sabetha, Kans., owner of Sabetha herd which is headed by Crimson Wonder 2d, has been appointed to receive subscriptions for these purposes.

Missouri has an organization of Duroc-Jersey breeders, and the Kansas breeders hope to organize into a State Association during the American Royal. The Missouri breeders have appropriated a handsome fund for the purposes named above, and ask that the Kansas breeders do the same and unite with them to secure a great showing of this breed. Kansas and Missouri are the home of the Duroc-Jerseys. No better animals of this breed exist than may be found in these States. Missouri will do her part, and we know Kansas will if the Duroc breeders are made acquainted with the facts in the case. Send your subscriptions to George Kerr, Route 3, Sabetha, Kans.,

at once, as it is necessary that he be able to report on the amount raised as early as July 10, if possible.

SOME PREMIUMS IN IOWA.

Here are some of the premiums that are to be given at the Iowa State Fair this year, that are attracting a great deal of attention and will cause some sharp rivalry among the farmers and farmers' wives of the State. These premiums are offered for the best products of the farms and kitchens of the State:

- For the boy who is the best judge of stock and corn, \$200.
- For the best single ear of corn, \$50.
- For the best ear of corn (boys' class), \$5.
- For the best loaf of yeast bread, \$10.
- For the best loaf of yeast bread (girls' class), \$5.

Valuable cash premiums are offered on everything produced in the State, and entries are open to all. Lists and entry blanks may be had for the asking by addressing Secretary J. C. Simpson, at Des Moines.

WHO IS RESPONSIBLE FOR HORSE STOLEN FROM HIRED PASTURE?

EDITOR KANSAS FARMER:—Please answer the following question through the columns of THE KANSAS FARMER:

If a man has a horse in another's pasture, who rented of the third party, and the horse was stolen or strayed, who would be responsible for the horse? MARSHALL STEELE.

Butler County. As contracts for pasturing stock are generally made, the person having the pasture to let furnishes the grass and sometimes water, all enclosed with a fence good enough to restrain any but breachy animals. He does not agree to guard the stock against thieves or to prevent mad dogs from getting in and biting the animals. Under our correspondent's statement, it must be assumed that only the usual obligations were assumed in this case.

BLOCKS OF TWO.

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

The trusts are hit hard in two decisions this week. At Cleveland, Ohio, five members of the ice trust were fined \$5,000 and sentenced to a year in the workhouse. At St. Louis, the court held that a debt to a trust can not be collected at law.

The first annual report of the Kansas Corn-Breeders' Association is a stout pamphlet filled with valuable discussions of live topics. Copies can be had at fifteen cents each by addressing V. M. Shoemith, secretary, Manhattan, Kans.

Miscellany

Cooperative Experiments with Farmers.
 V. M. SHOEMITH, ASSISTANT PROFESSOR OF AGRICULTURE, KANSAS STATE AGRICULTURAL COLLEGE.

During the winter of 1904-05 the agricultural department of the Kansas Experiment Station corresponded with all the superintendents of the county poor-farms of the State in regard to using a portion of these farms for experimental purposes under the direction of the department. Although this plan is reported to have worked successfully in other States, only four of the county poor-farm superintendents from the 105 counties of the State were willing to take up the work and were so situated that they could do so.

To these four superintendents and to nine other farmers and to the branch station, at Hays, Kans., were sent several varieties of spring grain, including oats, barley, emmer, and spring wheat, and several varieties of corn, saccharine and non-saccharine sorghums, cow-peas, and soy-beans. These farmers were requested to include in the variety tests some of the best va-



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rieties of the various crops grown in their localities.

Some satisfactory results were secured during the first season's work, especially from some of the graduates of the college, but it was found that several of the farmers chosen for this work had a very meager knowledge of experimental work, which caused their results to be unsatisfactory, consequently they are not cooperating with the department during the present season.

During the fall of 1905 four varieties of hard and one variety of soft winter wheat and one variety of winter barley were sent to each of the cooperative farmers. During the present season ten farmers in various parts of the State are growing spring crops for this department. The stations in the western part of the State are located as follows: Norton, Norton County; Dresden, Decatur County; Hill City, Graham County; and Protection, Comanche County. Other stations are located at Harper, Harper County; Castleton, Reno County; Burden, Cowley County; Havana, Montgomery County; Moran and LaHarpe, in Allen County; Linn, Washington County; and Baileyville, Nemaha County.

Fertilizer experiments with both winter and spring grain and with corn and Kafir-corn are being conducted at Havana, in the southeastern part of the State.

Very few conclusions can as yet be drawn from this work, but the results secured by the first year's work indicate that the varieties of the various crops which have given the highest yields at this station are fairly well adapted to growing in most parts of the State where these crops are successfully grown. To illustrate, the Hildreth and McAuley corn grown in Harper County, where it would be expected that the climatic conditions would be unfavorable for growing such large, late-maturing varieties, were among the best-producing varieties. It is, perhaps, true that these varieties of corn are good producers because they are hardy and vigorous and that these characteristics enable them to withstand drouth as well as other unfavorable conditions.

There are many local differences of soil and climate which require crops especially adapted to these conditions, and there is little question but that there are some varieties which are better adapted for growing on certain kinds of soil and in certain localities than others. In order to discover or breed up the best varieties for the various parts of the State and to distribute seeds of the same among the farmers, the continuation of the cooperative work is considered to be of great importance.

This Custom Is Now General.

It has now become a general and also a safe rule to demand brands of goods that are well known and have a reputation for quality and reliability. Nowadays the manufacturers of good goods inform consumers of this fact and point out that safety lies in buying the brands that bear their names and trade-marks.

In this respect the Mayer brands of shoes are deserving of special mention. Our readers have no doubt become familiar with these shoes and know of their excellent wearing quality by actual use. The Mayer factory turns out shoes suitable for every member of the family and for all uses, Sunday shoes and everyday shoes, and they are known throughout the broad expanse of our land as the shoes of style and quality.

The "Honorbilt" are very popular fine shoes for men, and "Western Lady" shoes embody the fit and style demanded by well-dressed ladies. For extreme comfort "Martha Washington" shoes are highly recommended. Please bear this in mind when next buying shoes.

Denver, Colorado Springs, Pueblo and Return, \$17.50. Santa Fe.

Tickets on sale daily, good returning as late as October 31, libel, stop-over privileges allowed. Fast Colorado Flyer from Topeka 10.35 p. m. arrives Colorado early next morning. Rock ball track and Harvey eating houses. T. L. King, C. P. & T. A., Topeka, Kans.

\$15 St. Paul and Minneapolis and Return.

From Kansas City via Chicago Great Western Railway. Tickets on sale June 1 to September 30. Final return limit October 31. Equally low rates to other points in Minnesota, North Dakota, Wisconsin, and Lower Michigan. For further information, apply to Geo. W. Lincoln, T. P. A., 7 West 9th St., Kansas City, Mo.

Agriculture

Information on Cow-Peas.

I have been reading in your valuable paper about the raising and feeding of cow-peas, and want to try some this season. Would it do to put them in with the lister on wheat stubble? Will you kindly send me a bulletin on this subject?

I have been thinking of feeding some sheep the coming year. Have pasture with a great deal of brush in it; would sheep kill the brush? How many sheep could pasture profitably on the amount of ground that will keep one cow? How would thrashed Kafr-corn do for feed for sheep? Would be pleased to have one of the sheep-feeding bulletins when they are ready.

W. H. JACKSON.

Steele City, Nebraska.

We have published no bulletin on cow-peas, but I have mailed you copy of a circular letter giving information regarding the culture and use of this crop. It is practicable to plant cow-peas with a lister on wheat stubble immediately after harvest, provided the soil and season are favorable to the growth of the crop. As a rule, we do not prefer to list cow-peas, but usually prepare the ground by disking and harrowing and plant on the level with the grain-drill or drill corn-planter. Planted in lister-furrows, the peas do not make so much top growth, giving a less yield of forage and making it difficult to harvest the crop for seed, since the pods on the plants will many of them form very close to the ground. It is doubtful, also, whether there will be sufficient time to mature cow-peas planted in wheat stubble in your latitude.

To mature New Era cow-peas, requires about 110 days at this station, while to mature the Whippoorwill peas requires about 120 days. The Whippoorwill is the variety commonly grown in this State.

A practical way of planting cow-peas in wheat stubble is to disk the ground and plant in close drills, cutting the crop for hay or using it for pasture and green manuring. To produce a good crop of peas requires earlier planting in ground which is in good condition for maturing the crop.

Your questions with reference to pasturing and feeding sheep have been referred to Prof G. C. Wheeler, of the animal husbandry department.

A. M. TENEYCK.

Cow-Peas for a Soil-Fertilizing Crop.

I notice an article in THE KANSAS FARMER of May 10 and your reply to E. A. Crall, of Neosho County, on the question of cow-peas. I have a piece of corn which is a poor stand, and I desire to keep up the fertility of the land and to avoid the growth of crabgrass after the last cultivation. Have thought that cow-peas would be the best crop to sow to accomplish both results (it is so dry we do not expect much corn). How many peas shall I sow to the acre? Where can seed be obtained, and at what price? This field is in corn for the fourth year from clover sod, and is what we would call medium high prairie land. If I should plant cow-peas, would it be likely that we could harvest any so as to have some on hand to sow for future use? Presume we should be ready to lay by our corn by July 15. We raise a great deal of alfalfa and some clover and fully understand the benefit of these legumes.

C. P. BAKER.

Shawnee County.

Perhaps there is no annual catch-crop which you can sow in the corn which will benefit the soil more than cow-peas. Cow-peas may be sown in the corn after the last cultivation or even as late as the middle of August. Preferably, it is best to sow the peas when the soil is in condition to germinate the seed. At this station we usually sow rather late, running a single cultivator through the corn ahead of the drill, using a one-horse grain-drill to plant the peas. About one bushel of peas are required to plant an acre in this way. Probably less seed could be planted with good results in a favorable season. Usually, however, the stand is rather thin, due to unfavorable conditions for germinating the seed, and in the trials made at this station I have observed that the cow-peas do not grow much until after the corn is mature or after it has been cut and shocked.

Cow-peas can hardly be considered so good a fertilizer as clover or alfalfa, but in short rotations or as a

catch-crop with corn, there is no crop which is better suited for fertilizing the soil. The objection to cow-peas is the cost of the seed, the retail price of seed cow-peas being \$2 to \$2.50 per bushel. Several other crops may be used as catch-crops in corn, which do not require so much outlay for seed; rape is commonly used in this way and probably of the non-leguminous class it is one of the best catch-crops to grow in corn. Rye is often sown in corn with the purpose of furnishing fall pasture and green manure.

As you have learned from the above discussion, it will not be possible to plant cow-peas and take off the crop for seed early enough to sow alfalfa this fall. If sown by the middle of June, such varieties of cow-peas as the New Era, Black Eye, and Whippoorwill will mature seed, but the seed-crop would be removed from the land too late to sow to alfalfa this fall, although cow-peas grown for seed make a good crop with which to precede the spring seeding of alfalfa. In growing cow-peas for seed, however, it is best to plant in rows and cultivate the crop. Little seed will be produced from cow-peas sown broadcast and especially from peas planted in corn.

You can secure good seed-peas of the Whippoorwill and New Era varieties from Western seedsmen, price about \$2.50 per bushel. As you have suggested, the only practical way for a farmer to do who plans to sow cow-peas largely as a green-manuring- and forage-crop is to grow enough cow-peas to furnish seed for his own planting. For further information regarding the culture and use of cow-peas, I enclose a copy of a circular letter discussing this subject, which I have written.

A. M. TENEYCK.

Alfalfa Bacteria for Inoculation.

I have in my alfalfa-field patches of alfalfa that will yield three times as much as other parts of the field. Is this due to the accumulation of bacteria, and if so, would it be a good plan to get soil at these spots and distribute over the rest of the field? How deep would it be advisable to take the dirt? Would three or four inches be deep enough?

I. LINDLEY.

Butler County.

The thriffter growth of the alfalfa in spots in your field may be due as you have suggested to the better inoculation of the soil in those spots with the bacteria which grow on the roots of the alfalfa-plants, the presence of which is necessary in order that the alfalfa may produce well. It is just as likely, also, that there is a difference in the soil conditions which effects the growth of the alfalfa in your field, causing less growth in the soil where conditions are less favorable. It would do no harm to take some of the surface soil from the places in the field where the alfalfa grows best and spread it thinly over the balance of the field, disking in order to mix the infected soil with the soil of the field. It is not advisable to remove more than three or four inches of the surface soil. This part of the soil will contain the larger part of the alfalfa-bacteria, and if too much soil is removed, the alfalfa may be injured in the places from which the soil is taken.

I should judge that doubtless where the alfalfa does not grow so well, the soil is lacking in fertility, and that a dressing of barnyard manure would have a very beneficial effect. Spread the manure any time after the last cutting of the alfalfa in the fall, and mix with the soil of the field by disking early in the spring. I believe if you give such a treatment that you will observe very marked beneficial results.

A. M. TENEYCK.

Soy-Beans as a Catch-Crop.

PRESS BULLETIN OKLAHOMA EXPERIMENT STATION.

The rapidly growing practice of seeding wheat and oat stubble to cow-peas in Oklahoma is hampered very much by the scarcity and high price of cow-pea-seed. Although not as valuable as cow-peas for the purpose, other crops may be used. June-corn, Kafr-corn, and sorghum so used at the Oklahoma Experiment Station have given profitable returns, but these crops are very frequently badly damaged by chinch-bugs and dry weather.

Soy-beans as a catch-crop on wheat or oats stubble have proven quite desirable. These plants belong to the same family as the cow-peas; chinch-bugs do not work on them; they are great drought-resisters; and they yield a very valuable grain for mixing with corn or Kafr-corn, or for balancing the ration with other feeds. They contain nearly twice as much protein as cow-

peas, and yield more grain but not so much foliage or forage. The plant grows erect and has many branches.

The following are some of the results obtained at the experiment station, at Stillwater, on wheat stubble: On June 24, 1904, the stubble on four half-acre plats was prepared for seeding by disking and harrowing. July 12 the plats were planted to soy-beans in rows thirty-two inches apart with a grain-drill, at the rate of thirty-eight pounds per acre, by setting the drill for three bushels of wheat. The seed was badly cracked or a smaller amount would have been used. The plants stood two to six inches apart in the row. All the plats were cultivated on July 18, August 6 and 16 with a two-horse cultivator. October 1 all the plats were harvested with a bean-harvester, cutting two rows at a time. The plats gave the following yields of grain, sixty pounds to the bushel:

Manured plats, 17.6 bushels per acre. Unmanured plats, 11.5 bushels per acre.

Average yield of straw:

Manured plats, 1.02 tons per acre.

Unmanured plats, 0.66 tons per acre.

In 1905 the wheat stubble on a field of some seven acres was prepared early in July for seeding to soy-beans by disking and harrowing. On July 6 the beans were drilled in rows thirty inches apart with the disk grain-drill. The ground was kept stirred and free of weeds. The crop was not cut until October 27, although it had been ripe some two weeks. The yield of grain was smaller than usual and only 4.33 bushels per acre were secured.

Following wheat and oats with a catch-crop like cow-peas or soy-beans is a much better practice than letting the land grow up in weeds to rob the soil and go to seed to hinder future crops. Where cow-peas can not be obtained, it will be well to use soy-beans. The seed usually sells for \$1.50 to \$2 per bushel. If cow-peas and soy-beans are plowed under, the fertility of the soil is materially increased.

Lice on Corn-Roots.

I send you by to-day's mail a box containing corn-roots with little green bugs or lice attached. These little pests are killing the corn in this vicinity. What are they, and what is known of them? As far as I know, they are found only in the listed corn, and these were taken from medium late planting.

HENRY REH.

Franklin County.

Though there were no insects in the box on receipt, there is no doubt that the "little green bugs or lice" found by you on the roots of corn are the corn-root louse or aphid. This is the first complaint of these insects that has reached the Experiment Station this spring, though the conditions of last winter were favorable for their preservation and early appearance. The interesting life history of the corn-root louse is briefly as follows: Its wintering stage is as an egg in the ground, in nests of a common, little brown ant, whose special object seems to be the preservation and encouragement of the spread of the louse. These eggs are deposited in the ground in the burrows of the ants at the close of the growing season, and as soon as laid are collected into store-houses by the ants for winter protection. Hatching in the following spring, the lice are cared for by the ants, placed on the roots of plants on which they may subsist, at first on smartweed, and later on the roots of corn as soon as it is ready for them. The object of the ants in all this fostering care is the production of the sweet secretion exuded by dorsal glands by these aphids, and constituting a greatly relished food for the ants. Several summer generations of the lice are successively cared for by the ants, and the fall generation, producing males and females, provide for the succession of the species next year by eggs, which, as stated, are collected by the ants and preserved over winter. The close dependence of the louse upon the ant renders it necessary to take the latter into consideration in any economic treatment. The ant colonies, like those of the bee in the hive, are practically perennial. During winter they contain the breeding female or colony mothers and the workers. While the ants are incapable of much activity during the coldest season, mild winter weather finds them sufficiently active to provide for the safety of the eggs so carefully garnered, provided the colonies are undisturbed after they have once assumed a winter condition. It has been found that the aphid, being thus practically dependent on the assistance of the ants for its distribution, is much less likely to infest fields

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that were not last year in corn, and the first suggestion is a short rotation, planting corn not more than two seasons in succession on the same ground, alternating with some crop not attacked by the aphid. As this species of aphid is not known to affect other farm-crops, with a possible exception of sorghum, and this not proven, it is easy to determine the other members of the rotation series.

Again, as the damage to corn is due to the abstraction of sap from the roots, and as in conditions most favorable to the corn-plant this damage is likely to be offset by the superabundant vigor of the plant, it will be found a practical proposition to render the damage unimportant by the use of fertilizers and good culture. Moreover, as the first generation of lice are fed on smartweed, such cultural methods as will prevent the growth of this weed in spring will go far to ensure the absence of the aphid in the later broods. Disking before listing is among these.

One of the most important modes of eliminating this aphid has its origin in the facts of its winter condition through the agency of the ants. The winter burrows of the ants, in which the aphid eggs are stored, sometimes extend as low as six inches below the surface, but the most of them occur within the upper three or four inches of soil. If this layer be overturned by the plow, or disk, and be well broken up afterward by the harrow, it is shown by careful experiment that the most of the ants' nests are so disturbed that the aphid eggs are correspondingly destroyed. The best time to undertake this is during open weather after winter has settled cold, the ants then being the nearest to dormant, and less able to make quick repair of their burrows and reassemble the eggs.

The question of the control of this insect seems thus to be mainly within the reach of cultural methods; and undertaken with a knowledge of the history and relations of the insect, such practices should commend themselves to every corn-grower. E. A. POPENOE, Entomologist State Experiment Station.

Seeding Alfalfa.

PROF. A. M. TENEYCK, IN BULLETIN 134, KANSAS EXPERIMENT STATION.

With good seed, a proper seed-bed, and land adapted for growing the crop, a careful farmer should be almost as sure of establishing a successful stand of alfalfa as the average farmer is of getting a stand of wheat or oats. This may seem like a strong statement, since failure to get a good stand of alfalfa has often been the experience of many farmers, especially those who were inexperienced in growing this crop. However, it is generally true that the longer alfalfa is raised on any farm, the more readily it grows and the easier it becomes for the farmer to start the crop. Whether this is due largely to the fact that a farmer learns better how to seed and handle the crop, or whether the land becomes better adapted for growing alfalfa, is a question. Perhaps both are important factors in the successful production of the crop.

THE SOIL.

Alfalfa will succeed on a variety of soils, grading from sandy to heavy clay and "gumbo," although with unfavorable soil conditions it becomes more difficult to establish a good stand. The crop, however, does not thrive alike on all soils; perhaps a deep, fertile loam or clayey loam well supplied with the mineral elements of plant-food is the most favorable soil for growing alfalfa. The crop needs a deep, well-drained soil; on wet land with the water too near the surface, alfalfa will often produce poorly and the plants soon die. Alfalfa will not thrive on a soil deficient in lime, which shows an acid reaction. Some old lands in Eastern and South-eastern Kansas being originally rather deficient in lime, after years of cropping have become deficient in humus and organic matter and so deficient in lime that they will hardly produce alfalfa successfully until the soil is fertilized by manuring, and the acid condition is corrected by applications of lime and land-plaster.

In order that alfalfa may make a good stand and continue to produce large crops, the land must be supplied with the nitrogen-gathering bacteria which live on the roots of the alfalfa-plants and supply a part of the plant's food. Lands which have never grown alfalfa may not contain these bacteria, and before alfalfa will grow well it is necessary to supply the bacteria by inoculating the new lands with soil from an old alfalfa-field. From 200 to 500 pounds of infected soil, carefully spread and mixed with the soil by cultivation before the alfalfa is planted, is suffi-

cient to inoculate the new land and infect most of the alfalfa-plants within a year or so after seeding. The nitrogen-culture preparations for treating the seed before sowing, now manufactured and sold, also give good results when used carefully according to directions. The average farmer will secure better results by using the infected soil, when it can be secured at a reasonable cost, rather than to treat the seed with nitrogen-culture preparations.

THE SEED.

The first requisite in getting a stand of any crop is good seed. Not only should alfalfa-seed be of good quality and strong in vitality and germination, but it should be clean and free from fowl weed seeds. It seems hardly necessary to enlarge on this point, yet many farmers are careless, much poor seed is sold and sown, and many costly failures result. Alfalfa-seed costs so much, and the expense of a failure to get a stand is so great, that many farmers are discouraged by an unsuccessful trial, while others hesitate to make the venture. Those who are familiar with alfalfa-seed can usually recognize seed of low vitality. New seed of good quality has a characteristic, bright, clear color, while old seed or seed which has received injury from wetting or heating has a dull, dead color, indicating its impaired vitality. Seed which is badly shrunken is also apt to contain a large percentage of seeds of low vitality which will not germinate and grow under ordinary soil conditions.

The only reliable way to determine the vitality of seed is to test its germination. This can be done in several ways. A simple and handy method is to use a cigar box; place several folds of wet paper in the bottom of the box, over it sprinkle the seed, and cover with several folds of wet paper; close the box and set it in a favorably warm place. Examine the seed in four or five days and count the germinations, re-moistening the paper if necessary. At the end of eight or ten days the test may be discontinued and the percentage of germination calculated. A large percentage of germination the first three to five days indicates a strong, vigorous seed, while a slow, weak germination indicates seed low in vitality, which may not germinate when planted except under the most favorable soil conditions. For the best seed, the percentage of germination should be 90 per cent or more. A low percentage of germination, and fairly quick and strong, indicates a mixture of good and poor seed, and such seeds may be sown, but more seed will be required per acre to insure a stand.

Carefully examine the seed for impurities, and if weed-seeds are present, the alfalfa should be carefully cleaned before seeding. The parasite "dodder" is now appearing quite extensively in alfalfa-fields in some parts of the West. This is a most dangerous pest, and it is usually unsafe to sow seed infected with dodder, even after thoroughly cleaning; but dodder-seed is only about one-half as large as alfalfa-seed, and by careful cleaning, using a "dodder" sieve, which will also remove many of the smaller alfalfa-seeds, the dodder may be removed, leaving only the choice, plump, clean alfalfa-seed to sow.

AMOUNT TO SOW.

The amount of alfalfa-seed to sow will depend to some extent upon the quality and vitality of the seed. The general practice has been, and perhaps still is, to sow from twenty to thirty pounds of seed per acre, but many of the oldest and most successful alfalfa-growers are now using much less seed. At the 1904 meeting of the Kansas Improved Live-Stock Association, A. E. Sutton, of Russell County, stated during a discussion on this subject that he had secured a good stand of alfalfa by sowing only six pounds of seed per acre. Col. J. W. Robison, of Towanda, Kans., who grows thousands of acres of alfalfa on his large farms in Butler County, stated that he was then seeding fifteen pounds of alfalfa per acre, but that he intended to reduce this amount to not more than ten or twelve pounds of good seed per acre. Hon. C. B. Daughters, of Manhattan, Kans., secured a splendid stand of alfalfa on his Blue Valley farm, near Manhattan, by sowing eight pounds of seed per acre in the spring of 1903; and so throughout the State I have found other farmers who now practice seeding twelve to fifteen pounds of alfalfa-seed per acre, while formerly they used twenty to thirty pounds. At this station a trial of seeding different amounts of alfalfa-seed per acre was undertaken in the spring of 1904; alfalfa was seeded broadcast at different rates, varying from six to thirty-six pounds per acre.

The soil was early spring plowing, which had been well settled by the use of the sub-surface packer, making a good seed-bed. The result of the trial was a fair stand of alfalfa, even on the most thinly seeded plot, while where the amount of seed was ten to twelve pounds per acre an excellent stand was secured. The heavier seeding gave a little thicker stand, but fewer healthy plants than the thinner seeding. Altogether these trials and the general experience of farmers prove that it is not necessary to use so large an amount of alfalfa-seed per acre as has been the usual practice.

With alfalfa as with clover, doubtless the season has much to do with securing a successful catch. I well remember the remark of a good old Scotchman, a neighbor and relative, who resides near my boyhood home in Wisconsin. When asked how much clover-seed should be sown to get a good catch, he answered: "We'll in a gude season a very leetle will do, and in a bad season it don't make much difference." With my personal knowledge and experience, however, I am sure that it often does make "much difference," and that even in an unfavorable season it is possible with an average amount of good seed sown at the right time, in a properly prepared seed-bed, to secure a successful stand of alfalfa or clover, or of almost any common domestic grass.

THE SEED-BED.

Next to good seed (let the weather conditions be what they may), the seed-bed is the most important factor in establishing a successful stand of alfalfa. Although this idea of a "proper" seed-bed has been studied and discussed much in the last few years, yet I find that the principles involved in the preparation of a seed-bed and its condition at seeding-time, as related to a favorable environment for germinating the seed and starting the young plants, are not yet fully understood by many farmers. A deep, loose seed-bed is not a favorable one in which to seed alfalfa, clover, or grasses. Such a seed-bed may be in a favorable condition for planting potatoes, or perhaps corn may sprout and grow well under the conditions named, since the seed is large and strong in vitality and contains much nutriment to nourish and start the young plants, but with clover, alfalfa, grasses, and other small seeds, the ideal seed-bed should be mellow, but finely pulverized only about as deep as the seed is planted. Beneath the point at which the seed is placed and covered in the earth, the soil should be rather firm but not too hard or compact; such a condition as may be secured by cultivating the surface of well-settled fall plowing, or by disking and harrowing unplowed corn land in the spring. A proper seed-bed for fall seeding may often be prepared on early-summer plowing or by disking unplowed land from which an early-cultivated crop has been removed. When the seeding follows closely upon the plowing of the land, either in the fall or spring, a proper seed-bed may only be prepared by using such a tool as the sub-surface packer, by which the bottom of the furrow slice is pulverized and firmed, thus reestablishing the capillary connection of the soil with the subsoil, by which the moisture may be drawn upward into the surface soil to supply the germinating seed and the roots of the young plants.

The firm condition of the soil beneath the seed and a good connection with the subsoil not only offers favorable conditions for supplying the seed with moisture, but the mellow covering over the seed allows the air and heat to reach the seed from above, and these three—moisture, heat, and air—are the essential factors in seed germination; but if any of these are lacking, the seed will not germinate. Moreover, the mellow surface above the seed allows the young plantlet to readily push its way up into the sunlight, when it throws out its green leaves, and through the action of heat and light the work of assimilation begins and the plant grows and soon establishes its roots deep in the soil and becomes able to withstand drought and unfavorable weather conditions.

TIME TO SEED.

Alfalfa may be successfully seeded throughout the eastern half of Kansas either early in the spring or early in the fall. As to just how early it may be safely seeded in the spring will be determined by the date when the last severe frost may be expected. The young alfalfa-plants may be destroyed by a hard frost just after the plantlets have appeared, showing their first pair of leaves. When the young plants have thrown out two or three pairs of leaves and have made some growth, they are



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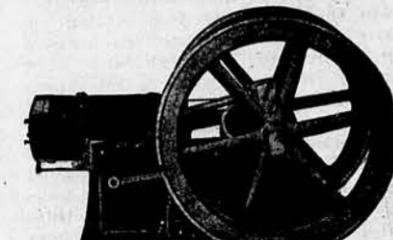
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not likely to be destroyed by frost. Thus, very early seedings are sometimes more apt to be successful than medium early seedings, while late seedings are most apt to suffer from heavy rains packing the soil and from the effects of hot, dry weather. As to how late it is safe to sow alfalfa in the fall is also determined to some extent by the season. During a favorably moist, warm fall, seedings up to the last of September have succeeded at this station, but, on the whole, the later seedings are much less apt to prove successful than the earlier seedings. Again, if the seeding is done too early in the fall, as in August, a period of dry weather may cause a poor germination of the seed or destroy many of the tender plants before they have established a root growth. This is a general rule which one may practice with success: Prepare the seed-bed early, either in the fall or spring, and seed when the soil is in a fit condition to germinate the seed. There is little use of sowing alfalfa unless the soil conditions are favorable to germinate the seed at once, because the seed will not germinate and grow until the conditions are favorable, and the seeds are much more apt to be injured and lost if they must lie for any considerable time in a seed-bed which is not in fit condition to germinate seed.

METHODS OF SEEDING.

A large amount of alfalfa has been seeded with the ordinary grain-drill. At present, the greatest objection to this method is that it requires too much seed. To sow in this way requires twenty to thirty pounds of seed per acre. The feed on the ordinary grain-better plan than to sow with the grain-drill can not be set up close enough to sow less than the amount named. A drill is to have a grass-seeder attachment to the drill, which will allow close adjustment, and with spouts emptying into the grain-tubes, so that the seed may be dropped in the drill-furrows and evenly covered. In many soils and seasons there is little doubt but that the method of seeding with the drill will give more favorable results than broadcasting. As a rule, however, alfalfa may be successfully started by seeding broadcast in a well-prepared seed-bed—care being taken to seed at the right time and when the soil is in favorable condition for sprouting the seed. Alfalfa is successfully sown by hand, but in recent years the little wheelbarrow seeder, several makes of which are sold on the market, has come into use for broadcasting grasses, clover, alfalfa, and small seeds.

The seed should not be covered deeper than one to two inches, or often less than one inch of soil covering is better in a wet season or on heavy, compact soil. The seed-bed should be fully prepared before seeding, and one brush with the harrow is usually sufficient to cover the seed on a well-prepared seed-bed having a mellow, even surface. If the seed is planted too deep, the young shoots will often be unable to reach the surface. The vitality of the small seed being quickly exhausted, the plant dies and the seed is lost.

As a rule, I do not recommend rolling after seeding, preferring to do the firming of the soil before the seeding. In light soils or dry seasons, however, it may become desirable to roll to cover the seed and press the soil about the seed. It will always be well, however, to follow the roller with a light harrow, leaving the ground furrowed and with a surface mulch, and not smooth and hard as left by the roller.

NURSE CROP.

It is safest, as a rule, to sow alfalfa without a nurse-crop, and this is the method usually practiced, although it is possible to get good stands in the most favorable climate, soil, and season by seeding with spring-grain-crops. If this method is practiced, lighter seedings of grain should be made than is the usual practice when the grain is seeded alone, and in a dry season it may become desirable to cut the grain-crop for hay before it matures, in order to keep the alfalfa from being destroyed by drouth. The nurse-crop method can not be considered a safe one to establish a stand of alfalfa.

TREATMENT AFTER SEEDING.

Alfalfa seeded in the spring needs little care after the first season, more than to mow the weeds a few times during the summer to prevent the weeds from seeding and to keep them from smothering the young alfalfa-plants. It is well to mow the field two or three times during the season, but the growth of weeds and alfalfa should not be cut too close to the ground. It seems to be true that when alfalfa has become well established, frequent close cutting seems to benefit the plant and cause it to grow more vigorously, but

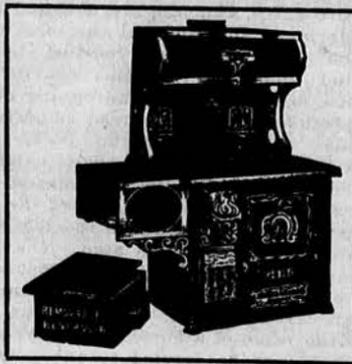
this is not true of the young, tender plants. It is true of alfalfa as with any other young plant, that it must form a top growth before or at the same time that it is producing roots. The leaves are the stomach and lungs of the plant, and before the roots can develop, the leaves must manufacture the products which are built into the cells and tissue that constitute the roots. If this top growth of leaves is kept cut off before a sufficient root growth has been established to easily restore the top growth, the effect is to check the growth of the plant, weaken it, and perhaps destroy the plant. I have known of good stands of alfalfa which were destroyed by a single close mowing, not due wholly to the reasons assigned above, but to the fact also that the young, tender alfalfa-plants which had been strongly shaded were suddenly exposed to the heat of the summer sun and a dry period of weather, which, together with the factors named, resulted in killing out the alfalfa almost completely. Clover seeded with a nurse-crop of grain is often destroyed by too sudden exposure to the hot sun and dry weather when the grain is harvested. (Others have ascribed this to the reflection of heat from the dry stubble, cooking the young clover, and advise mowing the stubble close to the ground as a preventive.)

The fall-seeded alfalfa needs no care in the fall—the full growth of plants and weeds should be left as a winter covering. The next season the alfalfa may be regularly cut for hay, and with a good catch will often produce three or four cuttings the first year, yielding three or more tons of good hay per acre, although on foul land the hay is apt to be a little weedy the first season. The fall seeding, however, has the advantage of the spring seeding in that the land returns a fair crop the first season after sowing, whereas with the spring seeding the alfalfa is not likely to make sufficient growth to produce a profitable crop of hay the first season; also, the weeds will usually be so abundant as to prevent the use of the first season's cuttings for hay, even should the alfalfa make sufficient growth. Fall seeding is also advantageous in order to get the start of the weeds, giving a comparatively clean crop of hay the first year after sowing.

Another method of seeding, adapted to weedy land or to land which is deficient in available plant-food, is to start the preparation of the seed-bed early in the spring, when the land may be either plowed shallow or cultivated with the disk harrow. Cultivation with the common harrow, disk, or Acme harrow, should be continued at intervals of a week or ten days, in order to destroy the weeds, conserve the soil moisture, and develop available plant-food. Late in the spring, during the last of May or first of June, seed the alfalfa, choosing a time to sow, if possible, soon after a good rain, so that the soil may be in good condition to germinate the alfalfa-seed. Unless heavy rains fall immediately after sowing, alfalfa seeded by this method should start quickly and make a good stand; and the weeds will not be troublesome, since the weed-seed in the surface soil has been germinated and the weeds destroyed by the early cultivation. The cultivation also causes some of the latent fertility of the soil to develop and become available to the young plants, and this, with the abundant moisture supply, should practically insure a good start of alfalfa, provided weather conditions are not too unfavorable.

When alfalfa has become fully established, the crop is benefited by occasional cultivation. The implement best adapted for this work is the disk harrow. Alfalfa may be disked in the spring before it starts much, and it may be disked after each or any cutting during the season. At this station the usual practice is to disk once a year, quite early in the spring, although disking several times during the season as described above has given favorable results in a single trial. In the experiments at this station the least injury was done the alfalfa and the best work was accomplished by setting the disks rather straight and weighting the harrow so as to make it cut two or three inches deep, then the field was cross-disked and harrowed with a common harrow. As the soil is left by the disking, it does not form a perfect soil mulch to conserve the soil moisture, and also the clods thrown up by the disk interfere in mowing. The purpose of the disking is to loosen the surface soil so as to favor better aeration to the soil, kill the weeds, and form a mulch to conserve the soil moisture and at the same time present a surface more favorable to the absorption of the rains, and there is no doubt

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but that the disking of alfalfa favors the growth and development of the crop.

Windrow Baling

Requires many features in a press not to be found in machines designed along lines heretofore followed in press construction. No feature is wanting in the Simplex Baler to make it a thoroughly practical and successful windrow baler. Its light weight makes it an easy matter for a horse to pull it about the meadow. Owing to the construction of the power mechanism within the frame of the press, the machine is always ready for immediate operation when drawn up to a shock or a stand along the windrow. The automatic stakers allow instant use the moment a stand is taken for baling. In making a start from a stand the stakes are automatically released.

The Simplex Baler sets low to the ground, and is as convenient to feed as a dismounted circular machine. It can be fed from either or both sides, thus two windrows may be baled at a time.

In baling from a stack or rick, the straight-pull power permits the Simplex being placed nearer to the hay than is possible in a circular power. It can be easily moved toward the stack as the hay is baled, which saves considerable labor in pitching.

Another valuable feature of the straight-pull power of the Simplex is that it makes this press the only one which can be operated inside an ordinary barn. Where the barn room is limited, the press can be set indoors with the power end set flush with the door-sill, allowing the horse to travel outdoors in the driveway.

Windrow baling is the most economical method of handling a forage-crop. In hauling the hay from the windrows to stacks, and in tearing the stack down to bale or feed, necessarily more or less hay will become scattered and lost. If the crop is alfalfa, pea-vine, clover, or similar plants, the leaves will shatter and the most nutritious element of the plant is lost. When baled direct from the windrow or shock, these losses are prevented. A more direct economy effected through windrow baling is the saving of the time and labor which would otherwise be applied to transporting the hay to the stack and building same.

Another highly important feature of this plan is the assurance it gives against loss by bad weather. This is due to the rotation of the several operations of harvesting made practical by the use of the Simplex in windrow baling. To illustrate: When the crop in the morning will be to cut three or four tons of hay, to be left to cure on the ground. The next morning the same operation is repeated, after which, if the previous cutting is cured, it is to be windrowed and in the afternoon the press taken to the meadow

and the hay baled direct from the windrow or the shocks. The following day the same plan is followed and continued until the crop is harvested. In this manner the loss will be comparatively small in case of rain, while if a stationary press was used, the entire crop would have to be cut all at one time and a total loss sustained in the event of rains.

The Simplex Baler is manufactured by the Little Giant Hay Press Company, Dallas, Texas.

With the thrashing season near at hand, the problem of getting the grain thrashed is one that confronts many farmers. In many of the grain-growing districts, farmers are entirely dependent upon thrashing crews, but no



one who has ever had experience with these is likely to say that this is a satisfactory method. In the first place, these gangs of men usually have all their time filled, and are compelled to rush from one place to another throughout the season. They have no particular interest in thrashing the grain clean and seeing that none of it is left in the straw.

The difficulty, however, is not an unsurmountable one, and the Belle City Manufacturing Co., of Racine, Wis., is helping farmers to solve it in a practical way. Their Belle City thrasher makes it possible for every farmer to have his own thrashing-outfit, or at least for every two or three farmers in a community to buy one in common and thus do their own thrashing. From 8- to 12-horsepower is all that is needed to run this wonderful little thrashing-machine, and no other help generally is needed than is employed around the farm. Its capacity is really remarkable, and the machine will handle all kinds of grain, from wheat to clover and timothy, and from rice to beans.

An interesting little booklet entitled "Pine Corners Debatin' Society" has just been issued by the Belle City Manufacturing Co., and it tells in a most attractive way how the farmers of this district overcame their thrashing difficulties. The facts given in this little booklet are true, and are compiled from actual tests of the Belle City Thrasher. It is a little booklet that every farmer ought to get who is interested in the grain-thrashing question.

Stock Interests

PURE-BRED STOCK SALES.

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

- June 28-29, 1906—Sale of all beef breeds at Des Moines, Iowa, D. R. Mills, Mgr., Des Moines, Iowa.
- September 25, 1906—Valley Brook Shorthorns, J. J. Mason, Ovrbrook, Kansas, owner, T. J. Worshall, Liberty, Mo., Manager.
- September 25, 26, 27, 1906—Hope Agricultural and Live Stock Fair & Sale. H. K. Little, Secretary, Hope, Kans.
- September 25, 26, 27, 1906—Sale Circuit of Duroc-Jersey Swine. John Schowalter, Manager, Cook, Neb.
- October 2-3-4-5, 1906—Glasco Live Stock Association sale of pure-bred stock, Glasco, Kans.
- October 10, 1906—H. L. Faulkner, Jamesport, Mo.
- October 11, 1906—American Galloway Breeders' Association Combination Sale, Kansas City, Mo.
- October 17, 1906—W. J. Honeyman, Madison, Kans.
- October 17, 1906—Poland-Chinas, W. A. Davidson, Asherville, Kans.
- October 18, 1906—East Lynn Herefords, Will H. Rhodes, Tampa, Kans.
- October 18, 1906—Choice Duroc-Jerseys. C. A. Wright, Rosendale, Mo.
- October 18, 1906—Poland-Chinas, W. A. Davidson, Simpson, Kans.
- October 20, 1906—W. R. Dowling, Norcat, Kans.
- October 23-24, 1906—E. A. Eagle & Sons, Agricola, Kans.
- October 24, 1906—Poland-Chinas, Frank A. Dawley, Waldo, Kans.
- October 25, 1906—D. W. Dingman, Clay Center, Kans., Poland-Chinas.
- October 25, 1906—Poland-Chinas, T. J. Triggs, Dawson, Neb.
- October 27, 1906—Poland-Chinas, Chas. A. Lewis, Dawson, Neb.
- October 30, 1906—Leon Calhoun's sale of Poland-Chinas at Atchison, Kans.
- October 31, 1906—Poland-Chinas, O. B. Smith, Cuba, Kans.
- November 1, 1906—Poland-Chinas, Carl Jensen & Sons, Belleville, Kans.
- November 1, 1906—Frank Zimmerman, Centerville, Kans.
- November 6, 7, 8, 1906—Sale of all beef breeds, Kansas City Sale Pavilion, R. A. Ford, Lawson, Mo., Manager.
- November 8, 1906—T. P. Sheehy, Huma, Mo.
- November 13, 1906—Howard Reed, Frankfort, Kans.
- November 16, 1906—G. M. Heberd, Peck, Kans.
- November 20-23, 1906—Blue Ribbon sale of all beef breeds, D. R. Mills, Mgr., Des Moines, Iowa.
- November 27, 1906—L. C. Caldwell, Moran, Kans.
- December 4, 1906—Poland-Chinas, Lemon Ford, Minneapolis, Kans.
- December 6, 1906—American Galloway Breeders' Association Combination Sale, Chicago, Ill.
- December 11-12, 1906—James A. Funkhouser and Charles W. Armour, sale pavilion, Kansas City.
- Improved Stock Breeders Association of the Wheat Belt—November 13, 14, 15, 1906, at Arkansas City, Kans.
- I. E. Knox, Nardin, O. T., manager; Dec. 5, 6, 7, 1906, at Anthony, Kans., Chas. M. Johnston, Caldwell, Kans., manager; Dec. 18, 19, 1906, at Wichita, Kans., J. C. Larrimer, Derby, Kans., Manager; Feb. 13, 14, 15, 1907, at Caldwell, Kans., Chas. M. Johnston, Caldwell, Kans., manager.

Breeding an American Carriage Horse.

GEO. M. ROMMEL, ANIMAL HUSBANDMAN, BUREAU OF ANIMAL INDUSTRY, U. S. DEPARTMENT OF AGRICULTURE, BEFORE THE KANSAS STATE BOARD OF AGRICULTURE, JANUARY 12, 1906.

At the outset of this paper, let me state emphatically that its purpose is not to "boom" any breed. The idea in breeding an American carriage horse is to use American animals as foundation stock, which should be selected according to their conformity to the approved type, and without regard to pedigree except along broad lines. I should say that in the beginning, at least, trotting-bred horses should be used exclusively, but as time goes on it is quite possible that the blood of other breeds may be found necessary to complete the work.

DESCRIPTION OF THE CARRIAGE TYPE.

The ideal for a horse of carriage type, according to our American market standards, is one standing 16 hands, and weighing 1,200 pounds in good condition; with a full-made body, clean-cut, intelligent head, neatly carried ear, full eye, wide nostril, clean-cut throat-latch, neck well arched, muscular, and of good length, with the windpipe clearly defined. The neck should be smoothly joined to sloping shoulders which are muscular without being meaty; the withers high and well defined. The body should be roomy, with good depth of chest, good spring of rib, and depth of flank. The back should be straight, strong, muscular, and closely coupled up; the loins broad, nicely rounded, and muscular without any tendency to a sloping croup. The tail should be set on high and smartly carried. The quarters and thighs should be muscular and full and the arms, forearms, and lower thighs likewise. The angles of the limbs should be correctly proportioned, the legs well set, straight, and entirely free from muscular tissue below knees and hocks. Pasterns should show a good slope (about 45° in the forelegs and 50° behind). Feet should be of good size, with dense horn, large frog, and high, wide heels. A certain amount of "bone" is essential as this is an indication of the muscular development of the horse, but the amount of bone should not be beyond that necessary for the work for which the horse is intended, and should not be carried to the point of coarseness; neither should one confuse amount of bone with coarseness of texture. Quality and soundness are absolutely essential to the carriage horse.

The former is indicated by a general well-bred appearance, shown in the clean-cut head, throat-latch, windpipe, neck, and ear, the cleanness of the legs (the tendons being distinct and the veins and muscles standing out plainly), and in the density of the bone, the texture of the skin, and the silkiness of the hair. Unsoundness, in obscure cases, can only be detected by a veterinary surgeon, but the most common cases, such as roaring, broken wind, sidebone, ringbone, spavin, and curb, can easily be found by any one.

Action is of the utmost importance. This should be high, bold, free, straight, level, even, and well balanced. The knees should be well flexed, this flexion including every joint of the limb from the shoulder down, the leg being neatly folded at each step. The hock action should be particularly looked to; the hocks should be well flexed and the feet carried well up. High action adds to the value of a horse of this type, but should not be carried to the point of becoming an absurdity, neither should height be gained at the expense of levelness and accuracy. Furthermore, conformation should not be sacrificed to extreme action. Good, all-round action is much preferable. No tendency to pace or mix gaits should be tolerated.

A certain amount of speed is always desirable, in fact, almost essential. Most gentlemen with sufficient wealth to own fine carriage horses have a drop of sporting blood in their veins, and do not relish slow driving. Therefore, your model carriage horse should think nothing of a three-minute gait for a short distance, and should be equal to ten or twelve miles an hour without trouble. Some of our most noted show horses are said to be able to do much better than this. The walk is an important and very much neglected feature of all horses. A horse with a rapid, swinging stride at the walk is a great comfort to his driver. The point deserves careful attention by breeders.

That matters are absolutely necessary goes without saying. If the horse is not used to city sights and sounds when the dealer gets him, he must become so before he is finally sold. Although it is not necessary for all classes of carriage horses, it is a valuable accomplishment in any horse to be able to back when asked to do so, and to know enough to stand without being hitched. Good manners, generally go with intelligence and good breeding, but are never developed without careful handling and good manners on the part of the trainer. The lighter bred a horse is, the better bred his trainer must be. A ruffian or a brute can never develop manners in a horse. If a man is a brute, his horse will generally be the same.

Color is not a matter of vital importance if a horse is a good one. Horsemen have a saying that "No good horse has a poor color." In other words, a buyer will not hold back if the horse is all right in other respects. Now this does not mean, of course, that some colors are not preferred above others. If a man is going to make a success of carriage horse breeding, he should confine himself to standard colors, and not go in very strongly for duns, skews, piebalds, etc. At the present time, browns seem to have the preference, with bays a close second, and grays a third. Light mealy bays, and other colors which tend to fade with age, are undesirable. A white should be a clear white with a pink skin. Contrary to popular opinion, blacks are out of fashion and are used mainly for funerals and other solemn occasions.

The markings of a carriage horse are important. If a bay, the horse should have black points. A certain amount of white is permissible, such as a strip in the face, a white foot or two, or even four white ankles, but a badly blazed face and legs which are white to the knees and hocks, with much white on the body, are not regarded in good taste; however, there is a certain demand for these highly marked horses and a breeder need not despair, if an occasional one appears.

The size which I have given for the carriage horse is that of the class at its best. Generally speaking, it should not exceed 16 hands, but if well developed all around, an additional inch or two may be allowed, and some good 16.3 horses will be seen. From 16 hands, the market runs down to the pony classes of 14.1 hands and even less. Some of the most valuable horses seen at the shows are ponies under 14.1. A breeder of these little fellows will find a ready market for them if they are good, but the market could be easily glutted with them, and it is, therefore, better to adopt the full-sized

horse as the standard. Little horses are sure to come from large parents, and a supply is quite likely to be had without aiming directly at it. The class of carriage horses which the market can consume in the largest numbers is the good, big horse; a thousand good 16-hand horses would have a much smaller effect on the market than a thousand horses two hands less in height.

THE VALUE OF THE CARRIAGE TYPE TO THE FARMER.

The horse which has been described is the highest type of heavy-harness or carriage horse, the one which will command the highest prices when properly developed, and will win at the large city horse-shows. He bears the same relation to the average run of horses of his type that an International champion steer bears to the average run of beef cattle. I have described this horse as the standard, because one's standards should be high. If we are breeding beef cattle, our standard will be a steer good enough to win the International championship, or a bull good enough to sire such winners. It is quite likely that the standard will not be reached, for that is something that comes to few men; but if we systematically breed towards a high standard, the average of our stud or herd is constantly becoming better and our surplus more salable.

If a farmer prefers to use the lighter types of horses in his work, he should breed his mares to stallions that will sire salable colts, and to get these he will probably find the carriage type of sires most useful. Horses of this kind will prove valuable work animals, the poorer ones sold will go into the general-purpose classes, and the best of them into the carriage classes. The general-purpose classes are largely made up of misfits (horses that are not good enough for a standard class), and the market does not pay much more for them than enough to cover cost of production; therefore, the necessity for high standards is apparent.

Much is heard about the necessity for breeding horses in the United States for army purposes. Now our army does not consume as many horses as some people seem to think. Generally, there is no difficulty in mounting it with the stock available, and it is pretty well mounted, too. The prices paid are not equal to those paid by the market for first-class horses, and, therefore, it does not seem wise for farmers to breed especially for this trade. Like the demand for general-purpose horses, it will supply itself, so to speak, by taking advantage of the presence of misfits, which, though sound, are a little off in conformation, action, or quality. However, if our standards of breeding are improved, and farmers use more care in their selection of sound harnessy stallions to which to breed, the army supply will be indirectly improved, and the problem of how to mount the army will be solved, if, indeed, such a problem exists.

Now, this proposition to breed an American carriage horse from an American foundation is of much more breadth than simply the evolution of a breed from the body of our light-horse stock. It is a good deal more than a patriotic whim to show the nations of the world that we can do such a thing just because we think we can. It means raising the standard of the light horse of the country; it means a better farmer's horse, a better carriage horse, a better roadster, and a better race trotter. Opinions differ widely as to the wisdom of the practice, but the fact remains that a large proportion of our farmers prefer a light horse for their work. No one can deny that farm horses should be as good as the farmer can afford, nor that the farmer should keep mares by all means. If he does keep mares, he is bound to have a surplus every year, and if he has a proper regard for the dollars and cents he should breed to good, sound stallions. Now this is one reason why I argue the improvement of this light-horse stock.

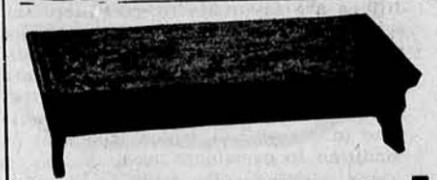
The next in importance is that the light horse of the United States is the American trotter, and in all human probability it always will be. Wherever our people have settled, they have taken their trotting horses with them. The trotting horse is the National horse of America just as the Thoroughbred is the National horse of England, and the standard attained in breeding the trotter will be an index of the standard of the light-horse stock as a whole. It is very doubtful, indeed, whether any breed of foreign origin will ever displace the trotter, and it is doubtful whether this is possible. In the first place, the American is in love with the trotter and would rather drive

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him, if he had his choice, than any other horse; in the second place, the number of good breeding animals available in foreign countries is too small to make an appreciable effect on our light-horse stock. The improvement of the trotter is the logical step. Further, the effect of selecting from the trotter for the carriage type in a uniform manner, would have a tendency to bring about uniformity of type in the progeny. Constant selection of the progeny according to this type will fix prepotency, and with a prepotent light-horse stock, we will have one that will reproduce itself. The result of this will be that much of the uncertainty and lottery which now prevails in horse-breeding will be removed.

CARRIAGE POSSIBILITIES IN THE AMERICAN HORSE.

It is fortunate that in working out the problem of developing an American carriage horse, the light horse of the country possesses in a marked degree the qualities desired. The horse of America is the American trotter, and it naturally follows that in developing any American breed of light horses the blood of the National breed will be used to a considerable extent, just as that of the Thoroughbred has entered into the light breeds of England.

The trotter has been developed with speed as the sole object. This has resulted generally in a special type, which is too angular and rangy for carriage purposes, but among the horses which hold records of 2.30 or better, there are many which conform very closely to the carriage type, and do not have the faults common to so many fast trotters. Good-sized, trotting stallions of good action can be found in nearly all sections of the country, and, although these horses may not possess extreme records, farmers will generally find it profitable to breed to them.

One of the most emphatic indications of the possibilities of our American trotters for this purpose can be seen in the record of trotting-bred horses in the show-rings. Not only are they most numerous in the carriage classes in the markets, but they are most numerous in the horse-shows and hold their own against the best that can be imported.

In the export trade, trotting-bred horses cut a very large figure, and have an excellent reputation abroad.

These horses are found on investigation to be from certain families. The blood lines which produce them are quite well defined, and they breed harness stallions with reasonable regularity, considering the fact that systematic efforts are not made to produce them.

THE CARRIAGE HORSE PROBLEM.

That it is a problem in the horse market, both domestic and foreign, to meet the demand for carriage horses, is seen in the large increase in their price and the decline of the export trade in the last six years. From 1899 to 1904 the average price of horses on the Chicago market increased as follows: Drafters \$22, carriage horses \$32.50 (pairs \$65), drivers \$10, horses for general use \$35, busses and trammers \$25, saddlers \$10, and Southern chunks \$14. In the fiscal year ended June 30, 1900, the exportation of horses to the United Kingdom reached its highest point, 30,232 head, valued at \$4,205,376. During the next year the number fell to 22,698, valued at \$3,481,467, and during the year ended June 30, 1905, the number was only 1,635 valued at \$505,365. The United Kingdom has always been our best foreign purchaser of carriage horses, and these figures show pretty clearly the situation of the export trade. Prices have risen in the United States to such a level that the export trade has been cut off. To meet the demand, buyers are scouring the country for suitable horses. Not only are they taking mares, but stallions are often bought, docked, castrated, and converted into heavy harness horses. As fast as this practice is indulged in, just so rapidly do the chances of developing an American carriage breed diminish.

VALUE OF THE TROTTER FOR CARRIAGE PURPOSES.

In frankness we can not overlook the fact that many trotters have very serious faults from the carriage standpoint. Big heads, ewe necks, bull necks, meaty shoulders, low, long, loose-coupled backs, steep rumps, crooked hocks, and plain action are among the things charged against them. You can find even some standard trotters which have them all, a great many which have some of them, and some which have none. These faults spoil a horse for carriage use, not so much on account of any effect they may have on his usefulness, but

because they spoil his looks, and in a carriage horse good looks is of prime importance.

On the other hand, the good points of the trotter for this purpose are his staying power, endurance, and speed.

Taking the breed as a whole, we must confess that the type is not yet uniform, and that the only thing which has been undoubtedly fixed in the hundred-odd years of its development has been the ability to transmit speed at the trot or pace.

VALUE OF FOREIGN BREEDS FOR CARRIAGE PURPOSES.

We have considered the trotter frankly and it is no more than fair that we treat the foreign coach breeds in the same way.

These breeds excel in conformation and action, but they generally lack speed, and are "soft," without endurance. The Hackneys show more uniformity of type than the continental breeds, which do not breed much truer to type than the trotter.

Here we have on the one hand speed and endurance with poor action and conformation, and on the other hand, good action and conformation, with little speed or endurance.

THE SOLUTION OF THE PROBLEM.

We have here three ways to solve the problem. We can import the foreign coach breeds, transplanting them, as it were, without any infusion of native blood; we can blend the foreign and native stock, in the effort to get a breed possessing the good qualities of both, or we can develop the native stock. For reasons set forth in the foregoing pages, the direct importation plan does not seem to be the most desirable. It might be done by crossing the foreign and native stock, but the great objection to this plan is the usual objection to cross-breeding, that the progeny of cross-bred animals do not breed true; in this case, selection to type and in-breeding would have to be used before prepotency was obtained.

The most logical plan seems to me to be the selection of the native stock and breeding up from this foundation. The original animals should conform as closely as possible to the carriage standard and should be from parents of carriage type. The progeny should be rigidly culled and only those of good carriage type retained for breeding. The power in a breeder's hands to fix a type in this way is tremendous and can hardly be measured.

Sentiment should not be allowed to sway judgment. If, after the type is fixed with some degree of certainty, it is found that a cross with a foreign breed may be desirable, and that the same results can not be obtained by the use of native stock, by all means let this be done.

HOW THE FARMER CAN HELP.

The farmer who uses light 1,000- to 1,200-pound horses can help in this work by breeding his mares to standard-bred stallions that conform to the carriage type. If this is done, remember that for a salable market horse, soundness, conformation, action, and quality are of far more importance than speed. If a horse has a record of 2.30 to 2.20, he has all the speed he needs as a sire of carriage horses. Speed alone should never be considered by the average farmer in selecting a consort for his mares. It has ruined more than one, and it is the most cheerless delusion that ever beset the mind of the man with a good mare, a little money, but lots of hopes. I have no criticism of the man who is breeding race horses. If he can make a success of it, I believe him to be just as much a public benefactor as the man who makes a success of breeding Shorthorns or Poland-Chinas, but the owner of a modest little farm, who must diversify in every way possible, is not in the race-horse business. He can not afford many luxuries, and his animals should be not only useful to him but salable as well. A horse which he hopes to develop into a fast one will prove a most disappointing luxury in the great majority of instances. Let the farmer play a safe game; let him breed with speed as a secondary proposition, and he will find his colts far more profitable.

AN OPPORTUNITY FOR BREEDERS.

There is a great opportunity here for horse-breeders with means and a good stock of faith in American horse flesh. To the writer's knowledge, no serious attempt had been made along this line before the Government's initial step taken a little over a year ago. There are two or three instances where trotting-horse breeders have recognized the possibilities along this line, but they were not persistent and their studs became straight race-horse breeding es-

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establishments. Horse-breeding is a paying business, but it requires considerable capital and great ability. There is no reason why it should not be less of a lottery than at present. If the proper selections were made and the type adhered to subsequently, we could in time look to having a supply of breeding stock which would breed true. This would not require an exceedingly long time, for the reason that the carriage horse type has been common in our American trotters for generations. It is there. All that is needed is to find it and concentrate it according to the best principles of breeding.

Tebo Lawn Dispersion Sale of Short-horns.

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The sale had been well advertised and there were Shorthorn breeders of greater or less renown from everywhere. Practically all the States of the Mississippi Valley were represented and some were present from greater distances. These men realized that this would be the opportunity of a lifetime to secure the choicest of Shorthorn breeding. The Scotch cattle in the sale sold very well, while the Casey mixture was less understood by the buyers and sold at prices which looked small beside those brought by the Scotch cattle. The Casey-mixture cattle were generally of excellent type and finish and averaged about \$150 per head, thereby insuring a profitable investment for their purchasers. Under the management of Ed. Mitchell, the Tebo Lawn Herd has attained its world-wide reputation in the showing, and has been made to return a regular and good profit on the money invested in them, which was a very large sum. By his frank statements of all known facts concerning the animals, and by his excellent management of the sale, Mr. Mitchell made many new acquaintances who will hereafter be proud to call him friend.

It was noticed by all that the demand for herd-bulls could not be supplied from the offering. Some of them brought rather remarkable prices and others seemed to sell low. But the

(Continued on page 699.)

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CONDUCTED BY RUTH COWGILL.

The Isle of the Long Ago.

Oh! a wandering stream is the river
Time,
As it runs through the realms of
tears,
With a faultless rhythm and a musical
rhyme,
And a broader sweep and a surge sub-
lime,
And blends with the ocean of years.

How the winters are drifting like flakes
of snow,
And the summers like buds between,
And the year in the sheaf—so they
come and they go,
On the river's breast, with its ebb and
flow,
As it glides in the shadow and sheen.

There is a magical isle up the River
Time,
Where the softest of airs are play-
ing;
There's a cloudless sky and a tropical
climate,
And a song as sweet as a vesper chime,
And the Junes with the roses are
staying.

And the name of this isle is the Long
Ago,
And we bury our treasures here:
There are brows of beauty and bosoms
of snow—
There are heaps of dust, but we loved
them so!
There are trinkets and tresses of
hair.

There are fragments of song that no-
body sings,
And a part of an infant's prayer;
There's a lute unswept, and a harp
without strings,
There are broken vows, and pieces of
rings,
And the garments that she used to
wear.

There are hands that are waved when
the fairy shore
By the mirage is lifted in air;
And we sometimes hear, through the
turbulent roar,
Sweet voices we heard in the days gone
before,
When the wind down the river is
fair.

Oh! remembered for aye be the blessed
isle,
All the day of life till night—
When the evening comes with its
beautiful smile,
And our eyes are closing to slumber
awhile,
May that "greenwood" of soul be in
sight.

—Benjamin Franklin Taylor.

Patriotism.

The time is near at hand when the
sound of the firecracker and the boom-
ing of cannon is in the air—the time
when mothers sit on the anxious seat,
expecting any moment to see their
young Americans—blackened with pow-
der and smoke—brought in burned or
wounded, and in their minds ever lurks
the dread of that terrible disease, lock-
jaw. This is called patriotism. It is
to bring to mind that glorious day
when Americans renounced the
iron rule of King George, and were
made truly Americans—a free and in-
dependent people. It is to remind us
that our forefathers were brave and
valiant soldiers and dared to face dan-
ger and suffer privation on account of
which we are now enjoying the free-
dom and comforts of the greatest coun-
try on earth. This is indeed a day
that should be commemorated; but are
we observing it in a proper way? Is
the manner in which it is observed
teaching the rising generation to love
their native land as our forefathers
loved it, or is the true meaning lost
sight of in selfish gratification? True
patriotism means self-sacrifice, if nec-
essary, to protect our country's laws
and institutions.

Every year the casualties from Fourth
of July celebrations increase, and ev-
ery year mothers offer up sons unwill-
ingly to the cause. Thousands of dol-
lars go up in smoke, that might be
used for some good purpose—to make
better Americans of the hordes of for-
eigners that are continually flocking to
our shores, some a menace to the
country's welfare in the condition in
which they arrive. It is to be hoped
that the time is not far distant when
another and better way will be found
to exhibit our devotion to our country.

Parents have it in their power to
bring about a change—perhaps not a
very decided change in this generation
—but for the future—by their teach-
ing. One mother of my acquaintance
has persuaded her children to contrib-
ute the money they have heretofore
used for firecrackers and other explo-
sives towards buying a beautiful flag
for the home. This is a good idea.
The flag represents loyalty and speaks
many things as it floats above our
heads, and every child understands its
language. It is a quiet reminder of

that early struggle and tells of deeds
of daring and victories accomplished.
There are beautiful pictures that tell
the story of those times, which would
not only adorn the home, but would
teach true patriotism and cultivate a
love for the beautiful. The money
used for Fourth of July fireworks
would be put to good purpose expend-
ed for some picture of this sort.

The picture shown on this page is
from a painting by Archibald M. Wil-
lard, and was first exhibited at the
Centennial at Philadelphia, and no other
picture attracted more attention
than it. It is a fine representation of
true patriotism. Heroism and purpose
are visible in every feature of the men



The Spirit of '76.

as they boldly go forth unmindful of
wounds and the ruin of war around
them. The model for the old man in
the middle of the group was his father,
who was the son of a revolutionary
soldier, and was at this time a retired
minister. He sickened and died before
the picture was completed, and the
painter divided his time between his
painting and the care of his father.
When Mr. Willard was asked by a
friend why he represented the younger
man as wounded, he replied:

"Because I wanted to show that pa-
triotism is more than the effervescence
of physical strength. The old man
must rise above his weakness; the
young lad, overcoming the timidity of
youth, catches confidence and fervor
from the old man's face; both have
something to overcome.

"But the strong man in middle life
might be going into battle only be-
cause he had strength that easily led
him there and without thought or con-
viction. So I gave him something to
struggle against; he is wounded, but
undaunted.

"So all three tell of a love of coun-
try which is the more certainly genu-
ine because it has something to over-
come. It is the victory of intelligent
and heroic love of liberty."

A Suggestion for the Fourth of July.

CHARLES M. SHELDON.

"Such is the patriot's boast, wher'er
we roam,
His first, best country, ever is at
home."—Goldsmith.

"Where the heart is right, there is
true patriotism."—Bishop Berkeley.

A nation must struggle for its ideals.
There is danger that days which com-
memorate great events will be ob-
served, by those who have been born
after the events, in ways unworthy of

the price paid by the Nation for lib-
erty or greatness. Memorial Day has
of late years been so abused. The
Fourth of July is celebrated in many
ways unworthily of the idea it is in-
tended to represent.

Why could not the people of Topeka,
old and young, express their patriotism
and their love for the city by putting
up a building to be known as The Peo-
ple's Hall? This hall could stand on a
piece of ground large enough to be
made into a children's playground, kept
and cared for by the children of the
city. Within the building itself could
be held any gatherings which centered
about the welfare of the city. The hall
could be of moderate size, to seat 1,000.
It could be dedicated to civic progress;
to good citizenship rallies; to children's
gatherings for learning of patriotic
songs, etc. In other words, it would
be a common rallying point, not for
entertainments or amusements, or for
the uses to which the Auditorium is
put, but for the uplift of the whole
city in its moral, physical, and esthetic
life. If every man, woman, and child

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bor. Howling coyotes were then almost as plentiful as rabbits are today. Their noise was continuous throughout the nights. The melancholy tone seemed never to cease, except when broken now and then by an abrupt sound of horror, when encountered by some of the settlers' dogs. Passers-by were so uncommon in those days, that when one was seen by a pioneer family, he would be stared at and watched as long as the eye could behold him. Then the good lady of the house, or some of her children would run to relate the news to some near neighbor two or three miles away. Bluestem-grass, which now covers the entire landscape, was quite unknown to us then, but buffalo-grass covered the whole prairie. This grass afforded excellent pasture for large herds of sheep, perhaps four or five thousand to a single herd. Those herds were cared for by men who carried with them their blankets and cooking utensils, by means of a canvas pouch strapped on their shoulders. The bill of fare of these men was indeed simple, but not much less elaborate than that of the settlers, who found it a very difficult task to eke out an existence. Mutton and rabbit, often without bread, with now and then a little sorghum, was a uniform bill of fare throughout the entire neighborhood.

Whether it was hard times, which almost invariably speaks peace between neighbors; or the lonesome, solitary life of Widow Pophendorpher, or a natural inherited kindness; or a combination of all these that made her rejoice at the approach of some neighbor or their children, and shed tears at their departure, I know not. But well I remember that when a little boy, herding my father's cows, it was my delight when the herd grazed near her home, to run down to Widow Pophendorpher's, who seemed a particular friend to those 7- and 8-year-old cowboys who made her daily calls so long as the grass held out sufficiently for their cattle in that section of the country.

One Sunday morning late in the autumn, a gray haze was settling all along the northern horizon. This prophesied a windy day. Not a drop of rain had fallen for nearly three months. The weather had been extremely warm. The grass was almost dry enough to be set on fire by the blazing sun. Far to the north, which looked to be in the neighborhood of the blue hills about fifteen miles away, a light smoke was seen by my father while out feeding the horses. He spoke about it when he sat down to the breakfast table. Before we had finished eating, the wind was blowing a gale. The straw roof of the stable raised in the hurricane. Dust and sand pelted the windows like hail. The air became black. Father rushed out of doors, but quickly returned saying, "The prairie is on fire; you children stay in the house and don't open a door or window." We promised, and well we kept our promise, for we were well-nigh scared to death. The roar of the swift crackling fire, the sound of the wind and dirt, the black smoke, the excited men hurrying to fight the fire gave us indescribable fear. The day seemed everlasting to us imprisoned children who knew not whether our father and all the neighbors were consumed by the fire.

After dark that night father returned, half dead and blinded from hard work and black dust from the burnt grass. The whole country was laid waste. Through the darkness, dots of fire and smoke could still be seen where stables, corrals, and the like were still burning. The head fire was thought to be still raging miles beyond. But the most heart-breaking result of the fire that father could relate to us after becoming somewhat composed was that Widow Pophendorpher was found burned to death about two rods from her door. Many conjectures as to how she caught fire when she might have been safe in her dugout were freely exchanged, but no satisfactory conclusion was ever reached.

A small dirt mound may still be seen, encircled by weeds and sunflowers, where sixteen years ago stood the hut of Widow Pophendorpher. I don't see it often, but last fall when passing the spot, many sad recollections of hard times, cow-herding, the big fire, and Widow Pophendorpher sprang involuntarily to mind and so thickened my voice as to stop all conversation for some time with the gentleman with whom I was traveling.

A Morning Prayer.

The day returns and brings us the petty round of irritating concerns and duties. Help us to perform them with

laughter and kind faces; help us to play the man, let cheerfulness abound with industry. Give us to go blithely on our business all this day, bring us to our resting beds weary and content and undishonored; and grant us in the end the gift of sleep.—Robert Louis Stevenson.

Some Things Worth Knowing.

When frying croquettes or doughnuts in fat, it is well to drop in a small bit of bread when smoke begins to rise. If in about five minutes the bread begins to brown, the fat is ready for use.

If oilcloth has become shabby, put a little glue in one pint of water, dip a piece of flannel in it, and go over the oilcloth with it. When dry, the appearance of the cloth will be much improved.

Wipe off furniture with a cloth wrung out in hot water before applying furniture polish. A high polish will result, and will not show finger marks.

Clammy hands may be improved by washing in very hot water, and when thoroughly dried dusting with fuller's earth. A sprinkling of ordinary starch, powdered and scented with verbena or sandalwood, in the gloves will also help to do away with the unpleasant feeling.

Massaging the face is quite as much of a help to nerves as a preventive of wrinkles.

For the invigorating and strengthening salt rub, soak a large Turkish towel over night in a strong salt solution, and rub the body well after the morning bath.

When shirtwaist cuffs begin to fray, an excellent plan is to dampen the cuffs and carefully cut along the top of the stitching line; then, while still damp, turn in the edges and restitch. This will freshen up your waist, and make it last for some time.

If the juice of a fruit pie runs out, try putting a small funnel of white paper in the center of the upper crust.

A teaspoonful of pure olive-oil, taken twice a day, improves the complexion, and helps to nourish the body considerably. In countries where oil is taken as an article of food, very little is known of indigestion and its attendant evils.

When milk boils over on the stove, sprinkle salt upon it to check the disagreeable smell that arises. Should the milk in the pan taste burnt, stand the saucepan in a pan of cold water. This will often take away the burnt flavor.

A teaspoonful of glycerine in a wineglassful of water is excellent for sore throat. Glycerine is better than oil for applying to creaking hinges.

Suede gloves can be cleaned by putting them on the hand, and rubbing them with fine oatmeal.

A bad headache can frequently be relieved by drinking a strong cup of coffee without any milk in it, but a teaspoonful of lemon-juice instead. Sweeten to taste, and drink as hot as possible.

In winter-time it is a good plan to clean windows with a little methylated spirit, instead of water. Polish afterwards with a dry cloth and they will shine brilliantly.

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This latter rate is authorized on account of the Elks' Annual Meeting at Denver July 16 to 21. Tickets limited for return to August 20.

Very low rates will also be in effect to Glenwood Springs, Colo., Salt Lake City, and Ogden, Utah, Yellowstone National Park, and to the Pacific Coast, with cheap rates for side trips to nearby points of interest en route.

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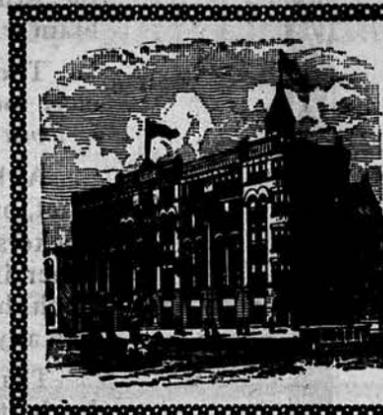
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Every person entitled to take up Government lands and desiring to secure one of these homesteads must appear in person on any day from

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(The ONLY EXCEPTION to this requirement is that a former soldier or sailor in the Army or Navy of the United States having had at least 90 days war service may send an agent, with power of attorney, to represent him. Such an agent may represent only one soldier or sailor.)

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Our Country's Flag.

Run up the flag on high,
Its stars shall light the sky!
Beneath it stand!
Let all its folds of light
Proclaim from morn till night
This is the Flag of Right,
And fatherland.

From shore to mountain-crag
Let all salute the flag
That makes men free.
Oh, may it ever wave
Above the true and brave,
A land without a slave
From sea to sea.

Our country, ever one,
As long as shines the sun,
One flag we love;
A flag the furnace tried,
A flag for which men died,
The Stars and Stripes our pride!
Praise God above!
—E. A. R. in Zion's Herald.

Fleetfoot; the Autobiography of a Pony.

MARION SEWELL.

CHAPTER XIX.—RECONCILED.

The months went by swiftly and in spite of myself I was very happy and contented. I did not forget my little mistress or any of the rest of the family, and in justice to all concerned I will say that there were times (quite few I must admit) in which I felt sad and melancholy, because I was away from home and the dear friends with whom my youth was spent.

Still, as I was in the habit of looking on the bright side of things, I shared whole-heartedly with Howard and Bonny Prince the many pleasures which they devised. I mention the dog in connection with my new master on account of their being almost inseparable. Bonny Prince had a keen sense of gratitude, and strove in every possible manner to repay the indulgent care that Howard lavished upon him. I, too, was treated with every kindness, and the only way I could show my appreciation was by being gentle and willing, and by rubbing my nose against young master's face when he talked confidentially to me, to assure him that I understood.

I became a great favorite with Howard's mama and Aunt Lucy, and both drove and rode me at frequent intervals, but my staunchest admirer was Mr. French. He was a jolly, cheerful sort of a person, reminding me often of Mr. Dearcot with his never-ending fund of good humor, and sympathetic feelings for his dumb brothers, as he called us.

Once I heard a visitor say that Howard was "the apple of his father's eye," and from personal experience I had a pretty clear understanding in what state of fondness my young master was held. Although Howard was very much a child in most things, he never took advantage of his parents' weakness, that is, their great love for him. He was ever on the alert to please his elders, constantly offering his services in a manly way that was delightful to witness; and while his papa played with him as if he, too, had been a little boy, Howard was always respectful, not losing sight of their relative positions. The many costly gifts that were showered upon him were never at any time solicited, but always came as glad surprises, for which the little man was intensely grateful.

So you see that Bonny Prince and I could not help being happy, having cast our lots with such an unselfish master, who thought all living things had rights as well as he.

We were the only pets he owned until he came across the dove with the broken wing. I remember what an ideal summer day it was when we found "Starlight." The schoolchildren had planned an elaborate picnic in the grove; and Howard in his black suit and blue tie, his new riding-whip and gloves came out of the house, at about 9 o'clock in the morning, and after having been pursued by Aunt Lucy with a forgotten handkerchief, he waved fond adieus to the smiling faces in the window, and Bonny Prince, in a spasm of joy, bounded off.

I went along the pretty country road in a leisurely trot, and we were just nearing the picnic grounds, a large tract of trees glowing green and cool, when Bonny Prince suddenly faced us with something white held loosely in his mouth. Howard immediately dismounted, and the Collie laid a fluttering bird at his feet. My young master picked it up and examined it sadly.

"It's a dove with a broken wing. Where did you find it, Bonny Prince?" The dog jumped about, and with excited wags invited us to follow him, which we did, Howard leading me with

one hand and holding the injured bird in the other.

A few yards only did we need to go when we found ourselves near a pile of brush upon which sat another dove making a sorrowful noise, as if it was mourning for something that was lost and gone. A few white feathers scattered about, and some broken shells told the story more plainly than any words could do, and Howard's plump face flushed with indignation.

"It's a shame," he said, and then stood still and wrinkled his brow in deep thought. In another moment he put one foot in the stirrup and rose slowly in the saddle.

"Turn round, Fleetfoot," he commanded gently. "We'll have to go back home. It won't do to leave this little fellow suffering while we're at the picnic. Aunt Lucy will know what to do, won't she, Bonny Prince?" For answer the Collie gave a couple of decisive barks and started gaily for home. Arriving there, Howard placed the disabled bird in the soft hands of Aunt Lucy, and then we went out of the yard and retraveled the road which led to the scene of the festival. Although we were late for some of the pleasures, we enjoyed those remaining with greater zest than if we had been in time and had not cared for the wounded dove.

The bird itself grew robust under Aunt Lucy's skilful nursing, and when a complete cure was effected, it was offered its liberty, which it refused by clinging first to Aunt Lucy's shoulder and then to Howard's.

"Our patient will not consent to be discharged," laughed Mr. French, who happened to be present.

"Since it is a fixture, what name will we give it, Howard?" "Starlight," answered my young master abruptly, and Starlight it remained throughout its natural life.

CHAPTER XX.—FAILURE.

An early autumn day with all the glory of autumn time; the recollection of each simple thing which happened during those important hours comes to me clearly now, though many years have passed since then.

I was out in the orchard standing idly underneath a tree, attracted not so much by the shade it offered, for the morning was pleasantly cool, but by

the russet apples which hung in scores above my head. Now and then a leaf faintly tinged with gold floated down and lay quietly facing the calm sunshine until a breeze came and hurried it away.

The big house was strangely still, or perhaps it only seemed so because the season of merry-making was at an end. You do not know what I mean since I have neglected to mention that Aunt Lucy had been entertaining a summer guest, a lively, winsome young lady whose name was Miss Sibyl Overbright. Throughout the warm, sunny days there had been a round of enjoyments, picnics, and tennis games, morning rides, and evening walks.

Then came Howard's Uncle Fred, a big, prosperous-looking fellow, who had just returned from some distant land, so, in his honor as well as Miss Overbright's, occurred the crowning event, an elaborate ball to which came hundreds of people. And a joyous time they must have had, judging from the sounds of music and laughter that floated out to me.

Some time the following day the last of the visitors departed, and I had the honor of taking Miss Overbright to the train. She bade me good-by in that light-hearted way of hers, and told me that I had helped make her visit one which she would never forget. As the cars moved slowly off and she leaned from a window to wave a farewell to Aunt Lucy, a saddened feeling came over me, for I knew that I would miss her, and I felt that I should never see her any more.

As Aunt Lucy guided me to the road which led in the direction of home, my feet appeared heavy and the level road seemed all uphill. But Aunt Lucy was very patient with me, giving me my own way, and I made slow but sure progress until I stood beside our own front gate. She drove me directly to the house as was her habit, and though the wheels grated noisily on the gravel walk, Mr. French, who sat on the porch with his head buried in his hands, never glanced up nor seemed to hear.

For a moment Aunt Lucy remained quite still in the buggy, and then throwing the lines aside stepped out, and going over to Mr. French asked with an added gentleness in her voice,

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"Is it so bad as this, Tom?" Mr. French leaned back with a sad smile, and displayed a tired, white face that differed so much from the ruddy countenance I had hitherto known that for an instant I doubted if this was he.

"Things are about as bad as they can be, Lucy," he answered with a sigh. "from a business standpoint they could not be any worse."

"Then you have lost everything?"

"Yes, everything, if I pay my honest debts."

"There will be no question about that I am sure," returned Aunt Lucy with conviction in her tone. After a short pause she asked, "Have you made any plans for the future?"

"An old friend in Los Angeles has promised me a clerkship, and of course this move necessitates the disposal of all our belongings, for the distance is too great to ship articles, even if they rightfully belonged to us."

Aunt Lucy looked sympathetic, but thought best to say nothing, and after a little while the painful silence was broken by Mr. French, who remarked, "With the best intentions I have mismanaged my affairs, and this crash is the natural consequence, and all the rest of you are made to suffer through no fault of your own."

Aunt Lucy put up an entreating hand and started in with words of consolation, but Mr. French went on dreamily, "It will break the boy's heart to part with the dog and pony. And the little woman, oh, how can I ever tell her?" and there was real misery in the good man's voice.

Although the tears sprang to Aunt Lucy's eyes she smiled, and the sickening heaviness that was in the air and was choking me seemed partially cleared away. "Never mind," she said softly, "I will tell her."

A baby in Kalamazoo
Remarked quite distinctly: "Goo-goo,"
'Twas explained by his ma,
And likewise by his pa,
That he meant to say: "How do you do?"
—Judge.

To keep one's eye upon the stars
And strive for Heaven is sweet,
But not at risk of tumbling in
The mud-hole at your feet.

The Little Ones

A Fourth of July Story.

- 1 Was the wide-awake little boy Who rose at the break of day;
- 2 Then he was off and away, Were the minutes he took to dress.
- 3 Were his leaps when he cleared the stairs, Although they were steep and high;
- 4 Was the number which caused his haste, Because it was Fourth of July!
- 5 Were the pennies which went to buy A package of crackers red;
- 6 Were the matches which touched them off, And then he was back in bed.
- 7 Big plasters he had to wear; To cure his fractures sore;
- 8 Were the visits the doctor made Before he was whole once more.
- 9 Were the dolorous days he spent In sorrow and pain; but then
- 10 Are the seconds he'll stop to think Before he does it again.

—St. Nicholas.

A Fourth-of-July Story.

"What lots of firecrackers we have for the Fourth," exclaimed Mark. "Yes, more than we ever had before," said his sister Olive. "And I can hardly wait for the Fourth to come, so I can have a chance to use them."

"And while you are waiting for the Fourth, how would you like to have me tell you about fireworks?" proposed the children's mother, who was sitting near them reading. "I once had an uncle who worked at the place where they manufacture fireworks."

"I shouldn't want to work in such a place," observed Mark. "I should be afraid that the fireworks would go off all at once, then there would be a pretty time of it; now, wouldn't there?"

"My uncle has told me the names of several of the best," said Mrs. Stanley. "But I don't suppose that I can remember half of them. I have heard him speak of water fireworks, which are never used upon the land. These are held in the hand, and when lighted thrown instantly into the water. Some of them are called 'diving devils.' These go along the water, dive, and at last explode. Others are the so-called 'flying fish.'"

"There's no danger of setting the house on fire with that kind of fireworks, is there?" remarked Olive. "There doesn't seem to be," answered her mother. "But there are more expensive water fireworks than these, although these cost enough. There are, for example, 'spray-fountains,' 'water-volcanoes,' and 'sea-serpents.'"

"And are those thrown from the hand?" asked Mark.

"No, they are put into a block in the water. As soon as a person has rowed out and set them very carefully, he must row away as soon as he can."

"Sometimes we see lots of pictures of firecrackers on things that come from China," observed Olive. "Why is that?"

"The Chinese are fond of fireworks," replied Mrs. Stanley. "They sometimes use, upon state occasions in their native land, what they call a 'Mandarin.' This is fifty feet in length, and ten thousand small firecrackers and two hundred large ones go to make it."

"Oh, my!" exclaimed both children. "I should think that all those firecrackers going off would make noise enough," said Mark.

"And you may be sure that they do," said Mrs. Stanley. The 'Mandarin' is suspended by his head, and fire is then set to his toes."

"The Japanese also are fond of firecrackers and they will show showers of stars, fans, etc."

"But I'd not give up my firecrackers for all of those things," said Mark, "for your father always lets you touch off your own firecrackers, and no one would let you have a hand in those high-flown fireworks."

"And it wasn't so very long ago that papa would not trust you or me either with firecrackers," said Olive. "We had to have torpedoes then, so as not to get burned."

"There are now firecrackers for very little children, which are said to be harmless," said the mother. "They are very small, there being eight hundred in one package."

"But we won't need any of them," observed Mark, "for we are getting to be quite big—Olive and I."

"My uncle told me about the flying pigeons," Mrs. Stanley went on. "They go through the air on a wire one hun-

dred feet long, and then return to the place from which they started. As they go they throw stars of different colors all about."

"My, wouldn't I like to see them, though!" exclaimed Mark.

"But perhaps some would be more interested in day firecrackers," said his mother.

"Why, how can there be day firecrackers," exclaimed Olive, in surprise. "There are such things," replied Mrs. Stanley with a smile! "and they come from Japan. They are thrown from mortars. When they explode it is figures that are seen flying about—men, animals, flowers, parasols, etc."

"Well, I declare," exclaimed Mark. "That is about as bad as raining barn-shovels and pitchforks."

"But you will doubtless never see any, said Mrs. Stanley. Not for some time, at least, for so small a town as this will have to be contented with rockets and wheels."

"And those are good enough for us," said Olive. "Still, wouldn't I just like to see the others, though!"

"And wouldn't I?" added Mark.—Alice King Douglas, in *Pets and Animals*.

Club Department

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Our Club Roll.

- Women's Literary Club, Osborne, Osborne County (1902).
- Women's Club, Logan, Phillips County (1902).
- Domestic Science Club, Osage, Osage County (1898).
- Ladies' Crescent Club, Tully, Rawlins County, (1902).
- Ladies' Social Society No. 1, Minneapolis, Ottawa County (1898).
- Chalisco Club, Highland Park, Shawnee County (1902).
- Cultus Club, Phillipsburg, Phillips County (1902).
- Literateur Club, Ford, Ford County (1905).
- Sabeau Club, Mission Center, Shawnee County Route 2 (1899).
- Star Valley Women's Club, Iola, Allen County (1902).
- West Side Forestry Club, Topeka, Shawnee County, Route 8 (1903).
- Fortnight Club, Grant Township, Reno County, (1903).
- Progressive Society, Rosalia, Butler County (1903)
- Pleasant Hour Club, Wakarusa Township, Douglas County (1899).
- The Lady Farmer's Institute, Marysville, Marshall County (1902).
- Women's Country Club, Anthony, Harper County.
- Taka Embroidery Club, Madison, Greenwood County (1902).
- Prentiss Reading Club, Cawker City, Mitchell County (1903).
- Cosmos Club, Russel, Kans.
- The Sunflower Club, Perry, Jefferson County (1905).
- Chaldean Club, Sterling, Rice County (1904).
- Jewell Reading Club, Osage County.
- The Mutual Helpers, Madison, Kans. (1905).
- West Side Study Club, Delphos (1905).
- Domestic Science Club, Berryton, Shawnee County (1905).
- Mutual Improvement Club, Vermillion, Marshall County (1906).

(All communications for the Club Department should be directed to Miss Ruth Cowgill, Editor Club Department.)

The Busy Woman's Club.

Hoping to encourage some who may be contemplating organizing a circle for the betterment of themselves and the community, I clipped the following from a contemporary paper. It shows how easy a club may be started and what splendid results follow. It says: "We could not persuade some of the busy housewives to join a so-called woman's reading club because of their conscientious scruples regarding the amount of mending, darning, and sewing, etc., awaiting them, and their utter incapacity ever to catch up with it. It was talked of and discussed, however, until at last one of the very busiest of us housewives proposed to organize a 'busy woman's club,' and appoint one at each meeting to read aloud while the others faithfully mended, darned, and sewed until they caught up with their work. It was agreed upon, and has worked beautifully, and some of the most profitable as well as enjoyable hours have been spent with the 'busy woman's club,' as there were many intelligent, bright women met with it."

"At first, we met at the home of a delicate member who did not feel able to go from home, but she had a fine library, and depended upon reading for entertainment, so she proposed reading aloud while the others worked. It was thought best to study current events, and to inform themselves upon the topics of the day. We, however, all threw in and took several good magazines, and made a kind of circulating library. We appointed a critic for each meeting and met every Thursday. When a new book sprang up and was much discussed, we also read it and criticised its merits. It was the critic's business to study and inform



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herself as regarded pronunciation and to equip herself to be helpful. There were twelve of us, hence it only took one lady a month to be critic. No one was to feel sensitive or hurt at being corrected, as our sole aim was to be progressive and not to retrograde. Only one of our twelve had been abroad, and she had been a teacher for years prior to her marriage. She was a great help upon many mooted points. After meeting with our delicate friend some half a dozen times or more, we concluded it would be better for her to meet with some of us, and she agreed to it readily. We made some of the strongest friendships, as we found out who was congenial and sympathetic and near to us. We met winter afternoons from two o'clock until five o'clock. Everything was in readiness for us when we arrived; a cheerful fire, a table with Webster's unabridged dictionary, a pad, pencils to take notes, a large basket which the hostess prepared filled with extra scissors, needles, thread, darning cottons of all shades, thimbles, etc., so that if any of the ladies should forget anything they could draw upon this basket for supplies. There was no confusion or disorder. Such a warm friendship sprang up between us that there was no gossiping, but little confidences were given and hearts warmed toward each other. Environments hitherto unknown made many of us more charitable and broader. The happy, beaming faces showed how much they were

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enjoying it. It was remarked in the neighborhood by many that the women in this busy club were getting much younger looking, and the families in each home saw the improvement in our dispositions, for there is nothing like interest in the outside world and in our neighbors to take the petty, selfish spirit from us. To turn over a new leaf is not an easy task when one is erratic and has become wedded to her old habits, but the outcome of this club is broadening."

Horticulture

Insect Lives.

J. M. STEDMAN, MISSOURI AGRICULTURE COLLEGE AND EXPERIMENT STATION.

The following is an abstract of a part of the illustrated talk on "Insect Lives" given before the Missouri State Horticultural Society, at Kansas City, December 27, 1905. The nature of this talk was such that it would not be interesting to the general reader without being able to explain the illustrations which were there shown on the screen. A large part of this talk, therefore, has been omitted entirely, and only that portion being of special economic importance is here given. THE KANSAS FARMER is indebted to Hon. L. A. Goodman, Secretary of the Society, for the use of the excellent illustrations herewith:

THE APPLE-TREE TENT-CATERPILLAR (*Climacampa Americana*).

The apple-tree tent-caterpillar has been doing an unusual amount of damage in certain localities throughout the State of Missouri during the past year, and especially in those regions where the wild cherry is abundant.

The adult of this insect is a reddish-brown colored moth, with two oblique and parallel white lines running across the front pair of wings. The female moth measures about one and three-fourths inches across her expanded wings, an illustration of which is shown, natural size, in Fig. 2, while



Fig. 1. Male Moth (*Climacampa Americana*).

the male moth measures about one and one-fourth inches across the expanded wings, an illustration of which is shown, natural size, in Fig. 1.



Fig. 2. Female Moth (*Climacampa Americana*).

These adult moths make their appearance during the early part of July, and busy themselves depositing their eggs on the twigs of various fruit and other trees, but more especially the apple- and cherry-trees, including our wild cherry. The eggs are deposited in a mass, consisting of upwards of three hundred eggs, and the mass of eggs completely surrounds the twig, as can be seen in the illustration at Fig. 3 c, which shows the mass of eggs im-

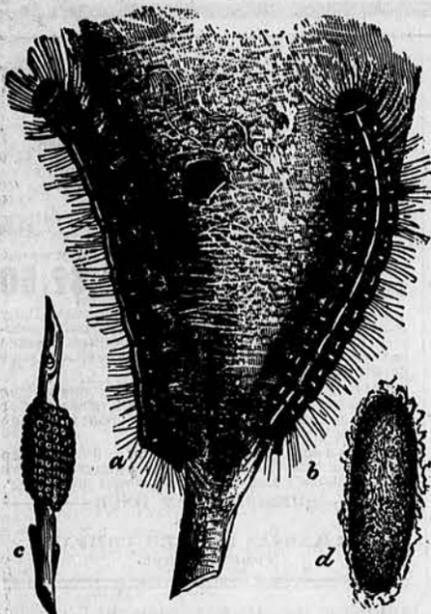


Fig. 3. a, b, Apple-tree Tent-caterpillars; c, eggs; d, cocoon.

mediately after having been deposited. As soon as this process is completed, the female moth immediately smears over this mass of eggs a gummy, varnish-like substance, which completely covers them and renders them glossy in appearance, dark-brown in color, and water-proof. This mass of eggs is therefore deposited during the month of July, and it remains upon the tree

until the following spring before the eggs hatch.

Early the following spring they hatch into small larvæ, or caterpillars, which feed upon the glutinous or varnish-like substance which the female moth placed over the eggs, and by that time the buds have usually swollen and expanded enough so that the insects find developing green leaves, upon which they feed. They are able to fast a week or more at a time, which is fortunate for them, because the eggs frequently hatch some days before the little green leaves begin to appear. However, these insects frequently make mistakes by hatching out too early, because real late and heavy frosts frequently catch many of them and kill them.

In a very short time after these larvæ begin to feed upon the expanding leaves, they crawl down to the nearest fork and spin a silken web across the fork, and in this they gather in order to pass the night and remain during stormy days. They usually leave this web or nest about 9 o'clock in the morning, and crawl over the branches in search of the leaves upon which



Fig. 4. Tussock-Moth, a, females; e, male; c, d, pupæ.

they may feed, coming back to the nest again early in the evening.

As these larvæ become larger, they enlarge their nest accordingly. Two full-grown larvæ are represented in Fig. 3 a-b, together with a portion of their nest.

A nearly full-grown larva will eat about two leaves per day, and hence one can readily see that as there are upwards of three hundred of these larvæ in a colony, it means that about six hundred leaves are removed from the tree each day; therefore, the necessity of attending to these insects at once or the trees will suffer. If a colony of these insects be in a small tree, they may completely defoliate it, or if, as frequently happens, a large tree contains several colonies, they may also defoliate it. This means, of course, that if it be a bearing tree, the fruit will be shed, and what is equally serious, the tree will not make fruit-buds for the next year.

In five or six weeks these larvæ become full grown. They then leave the tree and crawl about in search of a suitable place to make a cocoon and transform to the pupa state. They may get under rubbish of various kinds, or sheltered places about the loose bark of the tree, or about fences or similar places, where they construct a silken cocoon, which has a decidedly yellowish color, due to a substance which the insect places with the silk, which soon forms a yellowish powder. Inside of this cocoon, which the larva spins, it transforms to a pupa, and remains there until the following July, when the adult emerges. A cocoon is represented natural size in Fig. 3 d.

These insects are easily combated, because they gather in a mass inside of a conspicuous web in order to pass rainy days and each night, so that it becomes an easy matter to pass through the orchard and detect these insects very early in their larval condition. A little later, of course, one notices the defoliated portions of the trees and the webs become very conspicuous.

If one is spraying the orchard for the codling-moth and other biting insects, these apple-tree tent-caterpillar larvæ will be readily killed by the arsenical poison put upon the leaves for the other insects, but in case one is not spraying the orchard regularly for other biting insects, the simplest method by which you can fight the apple-tree tent-caterpillar is to drive a couple of nails in the end of a long stick, or cut a long stick with a fork in the end, and push this forked end into the midst of the web, and by turning it, wind the nest, larvæ and all together, and pull it out of the tree and step upon it. If this be done early in the morning or late in the evening, when the larvæ are all collected together, one can, in a very short time, pass through several hundred trees and destroy the nests of all of these insects. THE WHITE-MARKED TUSSOCK-MOTH (*Orgyia leucostigma*).

This Tussock-moth is gaining ground very rapidly in Missouri. Until recent-

ly the insect was scarcely known in this State. It feeds upon apple, plum, pear, and such shade- and forest-trees as elm, maple, oak, and horse-chestnut. The insect does injury by defoliating, and as there are two broods each year, with three hundred to five hundred per cent increase, the damage that these insects may cause in an infested locality is great.

The adults differ wonderfully in appearance, the males being winged and capable of flight, measuring about one and three-fourths inches across their expanded wings, which are ash-gray in color, with dark, wavy bands and some dark spots on the front wings. A picture, natural size, of the male is shown in Fig. 4 e. The female moths have no wings whatever. They are oblong in shape and of a light-gray color, with rather long legs, and they never travel far from the cocoons, out of which they emerge. The females remind one very much of the females of the well-known canker-worm, except that the female Tussock-moth is somewhat larger, with a more swollen body. A picture of one is shown, natural size, in Fig. 4 a.

The adults of the second brood appear the latter part of August, and the females deposit their eggs in a short time on the cocoons, out of which they have just emerged. The cocoon is gray, made of silk, with some of the hair from the larva woven with it, and the eggs are deposited in a mass upon the cocoon, usually three or four layers in depth, and are filled and smeared over with a white, glutinous substance, which holds them together and protects them from the weather. These cocoons are fastened securely to the tree, and are usually partly enclosed in a leaf. During winter, while the leaves are off the trees, one can readily find these cocoons with the white egg-masses attached. These eggs remain over winter and hatch the following spring, about the middle of May, into small, hairy larvæ, which begin at once to feed upon the leaves. When these larvæ become full-grown, they are about one and a half inches in length, and are among our most handsome caterpillars. Their coloring is yellow, black, and red, with tufts of hair arranged according to the picture of a full-grown larva, shown in Fig. 5.

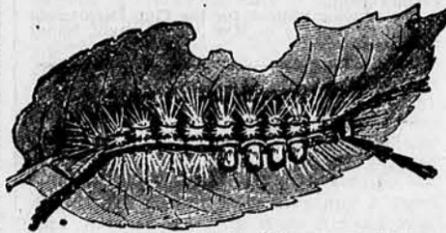


Fig. 5. Tussock-Moth, full-grown larva.

When a limb upon which these larvæ are feeding is disturbed, they drop down by means of a silken thread and stay suspended until the disturbance is over, very much after the habit of our well-known canker-worm larvæ. These first-brood larvæ become full grown by the fore part of July, and then spin their cocoons on the tree they have been feeding upon, and transform to the pupa stage at once, the adults emerging the middle of July. These adults immediately lay eggs for the second brood. The larvæ of the second brood become full grown about the middle of August, make their cocoons, as did the first brood, on the tree, and the adults from this brood appear and deposit their eggs the last of August.

The larvæ of the Tussock-moth eat not only the leaves, but where a tree has fruit, they are apt to eat the skin and part of the pulp of the fruit, and thus injure it.

The Tussock-moth can be distributed naturally in two ways only: Where trees overlap the larvæ can readily pass from one to another, and in some instances may crawl down the tree and over the ground to an adjacent tree, but this is rare. The great method of distribution is by nursery stock or cuttings from infested trees, the egg-masses being upon the trees at the time of transportation. Hence, in infested regions one should watch carefully for these cocoons and egg-masses

and pick them off and destroy them, otherwise, one will unconsciously introduce these pests into the orchard or into forest- and shade-trees.

While the insect is a serious pest if let alone, it is an extremely easy insect to control, largely on account of the fact that the female is wingless and does not leave the tree upon which she hatches out. Spraying with any of the arsenical poisons will kill these larvæ, but in a young orchard it is more satisfactory to pass through during the winter and pick off the cocoons containing the white egg-masses. One should leave the cocoons not covered with eggs, in order to allow the parasites of this insect to hatch out. This insect is held in check largely by nine different species of parasites, which is more than the ordinary insect can boast of.

(To be continued.)

Sugar-Beets and Irrigation in Western Kansas.

"The Atchison, Topeka & Santa Fe started something when it began its sugar-beet experiments in the Arkansas Valley," remarked R. P. Davie, vice-president and general manager of the United States Sugar and Land Company, as he stood in contemplation of a busy scene before him. It was the site of the Garden City sugar-plant, where a small army of men were digging trenches for foundations and unloading structural iron and other building material, and he was talking to a group of visitors and local newspaper men. Continuing he said:

"Before we turn a wheel, we will have invested \$700,000 cash on this site, not counting lands we have bought, irrigation ditches we will dig, and farm improvements we will make. Even with it all done here, we will have made a beginning only. We have come to the Arkansas Valley to share the field with our neighbors. One plant will not satisfy us. We can better reach some of our land from Deerfield, where we will soon establish a plant. More than this, it is good sugar-beet soil east of us. We are testing the ground so far east as Great Bend, supplementing the experiments of the Santa Fe, and we fully expect to have our share of that territory.

"But our company is not the whole works, or half of it. We are the first company to operate in Kansas, but just over the line in Colorado, within 100 miles of here, are three plants. The four perhaps will approximate a million bags of refined sugar this year. That means 100 million pounds. We will not quite touch that, but in a few short years the Arkansas Valley will pass that figure, and in the next generation the production will have multiplied many fold. The present population of the United States consumes about thirty million bags of sugar annually, of which the country produces only ten million. We ought to produce every bag of it, and we will in time.

"But it is of the present development of the sugar possibilities of the Arkansas Valley—of Kansas, if you please—that we are talking," he resumed reflectively. "There never has been anything like it in the history of sugar-culture, and the beginning of it all was the faith of the Santa Fe in the country which it traverses in its long journeys from the Lakes to the Pacific and to the Gulf. For I understand it to be the policy of the Santa Fe to help everywhere. Other illustrations of this, I believe, are the developments of the cement and the brick-shale beds of Southeastern Kansas. But be that as it may, I know it was the practical application of this policy of the Santa Fe that has led to the development of the beet-sugar possibilities of Kansas and Colorado. The Santa Fe has pointed the way and capital is doing the rest.

"Added to this, the railroad company by its experiments has pointed the way for Uncle Sam to exercise a natural function of government. The Santa Fe has an industrial department which has been of incalculable value in the development of the resources of the Arkansas Valley. It was by the efforts of this department that the United States Government was led to take a hand out here.

"About seven years ago Congress appropriated \$50,000 to ascertain the volume of the underflow of the Arkansas Valley. After making exhaustive tests, the experts in the service of the Government were so well satisfied with the volume of water that the Reclamation Bureau of the Government proposed to the farmers owning the 'Farmers' ditch' to install a powerful plant to pump water during the dry seasons. The offer was accepted, Congress appropriating \$225,000 to defray the ex-

pense and the farmers consenting to the usual conditions imposed by the reclamation service, to wit: Charging the farmers \$30 per acre for the perpetual water, the same to be paid in ten annual installments without interest. This plant is now an established fact, and it will insure water for about 20,000 acres perpetually. This land has been under irrigation from the river for years, but occasionally in the dry seasons there has not been a full sufficiency of water. Now, with a Government plant pumping water from the inexhaustible underflow, these lands will be well watered in all seasons.

"Taking advantage of the lessons learned by the experiments of the railroad company, and afterward by the more thorough experiments of the Government, the farmers, who own the Garden City ditch, are planning to install a plant similar to the Government's, and our sugar company, which owns the Lakin ditch, already is installing one. With all these enterprises in operation, and with the completion of all the ditches and reservoirs, now projected, or under way, a hundred thousand acres of very fine land will have permanent water rights and thereby be subjected to the uses of man. There never has been a dry well put down in the Arkansas Valley between Lakin and Garden City. The average depth in the first bottom is only ten feet, in the second from twelve to forty; but, when the right stratum is reached, water is always found in abundance.

"In 1905 the Arkansas Valley, tributary to Garden City, produced only 8,000 tons of beets. To supply the factory which we are building here, the same territory must raise this year and every year hereafter no less than 800,000 tons. This means a multiplication in a single year of last year's production of one hundred fold, but I am confident, from the experiments in soil and water by the Santa Fe, and from the practical results obtained by local farmers in a small way, that with the extensive preparations we are making, we will get all the beets we can use, and that soon the increased production will be so large that we will have to build the Deerfield plant. The sugar-beet is going to make the Arkansas Valley team with population."

The Grange

"For the good of our Order, our Country and Mankind."

Conducted by George Black, Olathe, Secretary Kansas State Grange, to whom all correspondence for this department should be addressed. News from Kansas Granges is especially solicited.

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Why Should Every Farmer Belong to the Grange?

Every man is a factor of society, and as such he is accountable for the manner in which he performs the duties which devolve upon him.

The first is to his home and family. The second is to his Government that permits him to enjoy the blessings and happiness of his home and family. The third is to better the conditions and advance the interests of his chosen occupation.

Since we are looking at the farmer's side of the question, what should be his action and what can he do to better his condition?

There are certain conditions existing that must be met and overcome to obtain results desired by the farmer. What legislation is needed must be secured by his combined efforts. As an individual among seventy millions of people he is infinitesimally small, and as an individual he is hopelessly helpless to do one thing to obtain relief.

The moment the farmer attempts to relieve any burden created by unjust taxation or unequal distribution of it, it makes no difference in what direction, he is met by an organized force.

No argument is needed at this time to convince any intelligent farmer that such is the case.

It is not enough that he complains and wants something done, but he is morally bound to do something himself and not merely wish it done.

He has power and it is his duty to use that power so as to make it available and his influence felt. So that if he can not make his influence felt or his power available as an individual (and I say he can not), his duty is to make it so, and that can only be done through his organized efforts.

Every farmer owes it to society to assist in securing honest legislators and just representation. That a lethargy exists among farmers in regard to political duties is evident from the class of legislators that represent them, composed as it is almost wholly of men from other professions and possessing but little interest in the affairs of the farmer.

The farmer has submitted so long to the powers that be, that in many places he has lost confidence in his ability to do anything, and above all needs the stimulating influence of a farm organization to awaken his energies and give him courage. To do the work assigned to him as a citizen, he needs an understanding of the questions of the day; he needs a preparation that will enable him to act in the management of the affairs of his time. In short, he must be able to stand up and defend his interests whenever it is required, and this ability to think quickly and act courageously only comes from a drill obtained in organization, and a farm organization teaches him to have confidence in his fellow farmers and acquaints him with the vital questions affecting his interests.

The farmer was created a social being, and needs the wholesome influence of organization to keep him so. His business is comparatively one of isolation, varying in degree according to his environments. The farmer who lives within the boundaries of 160 acres becomes very narrow and is of little use to his community. His family is correspondingly dwarfed as they are shut out of society, and are improved as their opportunity for association increases. The individual excluded from society will, in time, lose his mental powers and become oblivious to his own needs as well as to the needs of others. Here again he needs a farm organization, where he, with his family, can meet with freedom and ease, and while cultivating sociability can secure mental culture and pleasing manners—something that too many farmers' homes have neglected.

Without further arguments, all agree that the farmer needs to organize, and without any hesitation we say the Grange is his best organization. Its declaration of purposes is as fine a document as we have ever seen written by man. Its application to farm life and fine sentiment contained can not be surpassed. With its thirty-two years of existence, in which time it has met the surveillance of every opposition, it has not been found wanting in any particular. It has stood the test, while many other organizations which have sought to improve upon it have met with disaster and ruin. The plan of the Grange is right in being made co-existent with the needs of the farmer, having an organization in the township, county, State, and Nation, whereby it is able to serve him in every sphere. Anything short of this is deficient.

The Grange may be called the liberator of the American farmer's wife, as it was the first organization that gave to woman the same privileges and rights as are enjoyed by man. In doing this it has not only turned on the radiant light of hope for her, but it has strengthened the union of both, has created deeper love for home, and given inspiration for better thoughts, nobler deeds, and higher aims for the future. Men need more of the refining influence of woman. There is nothing that so refines a man as a good woman, and no audience, association, or organization with woman eliminated can be so modest, so refined, or so complete as with woman in it.

There is nothing equal to the Grange in giving opportunity to the boys and girls on the farm. Here the latent ability of the boy is awakened and hope engendered until we see him developed into a fuller and more complete man. In so doing he takes greater pride in his work, more interest in the farm, and his attachments for it are increased many times. The girl, now, has opportunity, and her genius brightens, while her refined nature responds readily with graceful manners

and greater affection for all that is near and dear to her.

EDUCATION THE CHIEF CORNERSTONE.

The education of the farmer has been sadly neglected, and the results obtained in this direction are among its grandest achievements. The Department of Agriculture, experiment stations, and mechanical and agricultural colleges bear testimony of this fact. In many localities high schools have been established, and a better condition of common schools fostered by the efforts of the Grange, while within the Grange a knowledge and discipline has been imparted that has gained for farmers a prominence that was unknown before. Men have been fitted through the Grange for the press, for the platform, for the caucus, for the assembly, and for statesmen. Truly, the Grange is the practical high school for the farmer and his family, as it gives strength and culture to those who are not able to secure them elsewhere.

The impress of the Grange on its members has a great influence for good. It makes better men and better women and incites all to a higher plane of life. It teaches Divinity in all things, and a Grange is never properly opened or closed that each member does not pay tribute to his Creator.

The Grange is not without good results in teaching better business methods for the farmer. It has taught him so far as possible to buy and sell for cash, and to sell less grain and more live stock. That this has been the wisest course is borne out by past experience. The Grange has cultivated closer relations between the manufacturer and farmer that undue profits may not be exacted, and much good has come to all farmers throughout this effort.

While the Grange does not teach partisan politics, it does impress its members with the responsibility of citizenship and to do all in their power to secure purer politics and to see that the interest of the farm is fairly represented. The continued and just demands of the Grange have met with no small degree of success, and in about every instance has been the only agent the farmer has had to present his claims and see they were granted to him. Scarcely a law has been passed for many years in behalf of the farmer that the Grange was not foremost to champion it and oftentimes the only one.

If the farmer hopes to keep pace with other callings in the race of life, he must travel at the same rate of speed. In order to do this, he must employ some of the same agencies, and organization above all is the one upon which he relies. If he would maintain a high standard of womanhood, he must secure for her equal privileges in social and educational circles, for whenever she falls below him in ability or culture she ceases to be his equal or idol. If he desires his boys or girls to be shining lights in the world, whether on the farm or elsewhere, he must give them the opportunity for development, until their orb is compassed or sphere complete. As this agency, as this privilege, and as this opportunity, the Grange is without an equal and can not be excelled. For these reasons and many more every farmer should belong to the Grange, so that it may be an irresistible force in combating the wrong and securing the right, and be conscious that his presence and influence are assisting it.

The Grange.—The Proud History of Accomplishment and Endeavor Points to a More Brilliant Future.

D. H. THING, OF MAINE.

It has been in existence about thirty-eight years. During all that time it has had a warm place in my heart. I have worked for it all the while. I have stood by it in prosperity and in adversity. Its prosperity has been my satisfaction and its adversity my sorrow. I watched that grand old Texas Patron as he worked for the Interstate Commerce Commission, and rejoiced when the measure became a law of the land; and, although some of our most eminent lawyers and statesmen decided that it had no teeth, yet when it was put to the test, it was found that it had not only teeth but the power to bite when it walked United States Senators up to the rogues' bench and made them disgorge the amount of millions.

Then the farmers began to see that they were getting less than an equal share of the blessings of a free Government, and soon, by the repeated demands of that old Hess (God bless

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him!), we got the grandest law of all in the free delivery of rural mails, and so simple was it that we are wondering that it was never thought of before.

TAKE HOLD TOGETHER.

The pure-food bill is coming along all right. Now is the time to demand the good roads' law and the parcels post. Let us all take hold together, and we will have both, for all now recognize the fact that we are a power to be reckoned with. All we need do is to hold on to what we have attained and keep right on, and we shall eventually receive all the rights and privileges to which we are entitled.

We need more farmers in the Grange. It seems strange that every farmer is not a member of the order. Every member has the fullest liberty to bring his political and religious ideas and opinions into the Grange with him, and no one in all the order dares say him nay. Then, come, brother farmers—yes, brother workers in all industrial lines—and we will soon see the effect in our State and National Legislatures.

AMERICAN CITIZENS.

Let us remember that a Greek, Italian, Cossack, or any one else, after living here five years, receives the functions of an American-born citizen; yet our wives and daughters, after living sober and loyal lives, and bearing all the burdens of citizenship, are denied the rights. Let us step out and boldly demand that all white men and women, unconvicted of crime, be entitled to vote.

It is no answer to say that the women do not desire the rights. Women have as strong and well-settled opinions as men, and, when given the right, will be obliged to exercise it.

All Patrons know that women have the same natural abilities as men. Local option is just coming, and the only solution for us is the ballot box. Give women the right to vote, and you need have no fears of local option harming us—for on all moral questions you will find the women on the side of moral purity.

THE LAWLESS TENDENCY.

I do not speak of this to thrust any new topic into the Grange, but it is, and for years has been, my private opinion that the only way in which we can counteract the Sabbath-breaking, lawless tendency of the times is to place the better part of our population where they can counteract the acts which we so much deplore. Some are already clamoring for Sunday ball games. It is all very well for women to sneer at Sunday laws as Puritanical, but they must not forget that but for the Puritan laws of New England we should be on the road to faithless infidelity. Let us, as a Grange, work for the Sabbath, but do not forget to work six days in the week; if we do this, we shall all be willing to rest on the seventh. We want the Grange to be a power and influence for good, and let us as a Grange all work for that end.

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Tickets on sale daily, good returning as late as October 31, liberal stop-over privileges allowed. Fast Colorado Flyer from Topeka 10.35 p. m., arrives Colorado early next morning. Rock ballast track and Harvey eating houses. T. L. KING, C. P. & T. A., Topeka, Kans.

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Dairy Interests

Value of Buttermilk for Athletes.

EDITOR KANSAS FARMER:—Buttermilk contains about the proper amount of lactic acid necessary to induce perfect digestion. It is antiscorbutic and forms carbonic acid in the stomach, which unites with the calcium, magnesium, or potash salts that are always present in the food, and forms carbonates which purify the blood by preserving its alkalinity. While alkaline in reaction, it throws off uric and other waste acids which would otherwise be absorbed. It has, therefore, a great diuretic and dietetic value. The casein is in a coagulated, finely divided state, and is readily converted into peptones for body use. It contains enough water to quench thirst, takes the place of fresh fruit to a great extent, keeps the body in a laxative condition, and at the same time furnishes considerable valuable, readily digested food.

It has long been known that buttermilk is one of the best drinks for invalids, and in fact for the average person. Until recently, however, no experiments had ever been conducted

yard dash is 52 2-5 seconds. His record on the mile is 4 minutes, 46 seconds. Cain's record on the 100-yard dash is 10 seconds. Jones was our best hurdler this year, and in every relay race Edelblute made better time than any one of this or any other relay team in competition with it.

This is the first year that this college has ever had a track team of any significance, and most of the boys are new at the work. The only coaching they have received was occasional advice which I gave them during my spare moments. I do not attribute their success entirely to the use of buttermilk by any means, but I have noticed particularly the good effects of this drink in keeping the digestive system in perfect operation and the athletes in good physical condition. The boys who drank the most buttermilk were always in the best condition for the contests, excelled in their events, and seemed to stand the work better than did those who drank only a small quantity. C. W. MELICK.

Introducing the Milking-Machine.

After some years spent in perfecting the invention and trying it out in a practical way, the milking-machine has proved so satisfactory during the past two years in New York State, and



The Track Team Winners.

to show its value as a drink and food for athletes. Although all of our athletic teams have access to buttermilk every day, on April 1 an experiment was devised to give the members of the Kansas Agricultural College track team all the buttermilk they could drink during the season. Some of them liked it very much, while others did not. They all drank it, however, and consumed from one pint to one quart per day each. They were also allowed to drink water whenever they desired, but their main drink was buttermilk.

As a result of the use of buttermilk, the digestion was almost perfect. Headaches and constipation were almost unknown, excepting a few times when three of them went without buttermilk two and three days. At such times these three boys had headaches and a dizziness was felt to a greater or less degree after hard practice. This would indicate that their digestion was not normal. During the season they won from Baker University, by a score of 101 to 28, and the result of the inter-collegiate State meet was as follows: Kansas State Agricultural College, 56 points; College of Emporia, 39½; Kansas State Normal, 24; Washburn College, 18½; Fairmount College, 15; Cooper College, 7; St. Mary's, 5.

The accompanying cut represents the Kansas State Agricultural College relay team, M. R. Edelblute, C. Cain, G. W. Milligan, and Chas. Jones. Since April 30 these four boys have lowered and now hold five Kansas State records, making three of them in one day at the inter-collegiate State meet at Topeka, May 28. Their record in the mile relay is 3 minutes, 41 4-5 seconds; in the half-mile relay 1 minute, 29 seconds. Milligan's record on the 440-

in New England during the past six months, that it is likely to come into general use. W. A. Crehore, of Chicopee, Mass., has been milking 34 cows by machinery since May 15, and C. A. Dennen, of Pepperell, has milked 60 cows by machinery since April 1, while since January, S. A. Hickox, at South Williamstown, has milked 50, and W. B. Barton, of Dalton, 30 cows. No bad effects have been observed upon the cows, and no more shrinkage in the flow of milk, if as much, as would be expected under milking by hand. These parties are all very enthusiastic over the machine, so much so that Mr. Barton is at the head of a syndicate which has formed a company to control this type of milking-machine for the New England market.

The machine works by a suction pump, operated by an engine. A gasoline or steam engine used for other purposes can be employed. Each machine milks two cows at once, all four teats at the same time. The tin milking cups have a rubber tip which is alternately compressed and relaxed by the intermittent suction, thus closely imitating milking by hand. At the same time, the suction draws the milk through the tubes into the closed milk-tank. These tubes and cups are readily washed with water, pumped or sucked through them. The whole apparatus is extremely simple, easily kept in order, and, if properly cared for, is quite sanitary.

The saving in expense is so great that the parties interested in the machine produce figures to show that it is indispensable in every dairy having 20 or more cows. Of course the larger the dairy, the greater the economy. Mr. Crehore's complete outfit of engine, pump, piping, and four milking-ma-

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VERMONT FARM MACHINE CO.,
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chines represents an outlay of about \$600, and would take care of nearly 60 cows. The engine will also be used for other purposes, such as cutting hay, fodder, silage, sawing wood, etc. Two men superintending the machines now do the milking, which previously required four men. Judgment must be used in deciding when the cow's udder has been nearly milked out, and the udder is stripped clean by hand. The relief from the drudgery of milking is so great that this machine will be looked into with intense interest by every up-to-date dairyman.—New England Homestead.

Wet or Dry Feed for Cows.

When I was a boy, my father kept five cows and a yoke of working oxen. The oxen (the only team we had) were used every day in the winter drawing logs to the mill and wood to the house. They were stabled and fed about half a bushel each of cut straw wet with water and mixed with "chop" or meal ground from corn, rye, and oats, writes J. W. Ingham, in Wisconsin Agriculturist. They were also given all the hay they would eat.

The cows were kept in the barnyard

day and night, with an open shed to go under when it stormed, and were fed cornstalks and hay for fodder, and were "slopped" with buckwheat, or wheat bran, mixed with water, making a "slop" which was so thin the cows could almost drink it. Sometimes a little "chop" was added to make it richer. It was fed in swill pails and board boxes and the cows did well on it.

It may be objected that the mess was eaten too fast to produce the best results in milk-production, and, if the feed had been given dry, the cows would have been obliged to eat it more slowly, the saliva from the mouth would have become mixed with it, which is supposed to aid digestion.

There is not much doubt that cows will do better when obliged to eat their meal slowly than to gobble it down hastily in slop. In either case, the meal lies in the animal's stomach in a small, compact heap, whereas it should be fed in such a manner as to fill the stomach, so that the organs of digestion can easily lay hold upon it, and the organs for secreting milk and flesh have a fair opportunity to select the portions they need for storage in their respective departments.

Necessity (as I think) caused me to

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adopt a better way than to feed meal dry, or when made into slop. Being scarce of hay, owing to a flood in the river which swept the grass down in the meadow and covered it with sand about the first of July, I remembered that my father's oxen endured hard work, and kept in good flesh, on cut straw and meal. Then why not cows, doing no work, give a good mess of milk, and keep in good flesh, on cut straw and meal? The straw was cut in half-inch lengths, and sometimes in cold weather, wet with hot water, to soften the straw, and then mixed with the meal and fed warm.

When the market for hay was high, I sold hay and kept the cows, young stock, and horses principally on cut straw and meal. When the price was low, I cut hay instead of straw, which made a feed that would be eaten up clean with a less proportion of meal and produce the same quantity of milk. There is much feeding value in bright straw, and instead of being burned in the field, as practiced by some farmers, should all be saved and used for fodder and bedding for the animals, thereby preserving the fertility of the farm, obtaining the most profitable food and greatest comfort for the stock.

The only advantage ensilage has over well-preserved dry stalks is its succulence; the sourness of the ensilage is a damage which almost annuls the value of the ear-corn cut into it, which the cows root over to find and eat first.

Professor Dean, of the Ontario College of Agriculture, has tested nearly all of the leading milking-machines, including the Murchland, the Thistle, and is now making a test of the Burrell Lawrence-Kennedy machine. In a recent issue of The Farming World, he gives his experience with the last-named machine as follows:

"After a little over a month's experience, all we are prepared to say at present is that the machine promises to solve the problem of milking cows where the herd is large enough to warrant the expense, and where hand-milking is not available at reasonable cost. We hope to speak more definitely at the end of the year.

"In the first part of our experience, we had trouble with some cows which did not take kindly to the machine. It was necessary to strap their legs to keep them from kicking. Now none of the cows have to be strapped. At first we stripped all the cows after the machine. Now this is not necessary.

"Then we massaged the cows' udders, now we do not. Formerly we had trouble with udders swelling, now there is none. At first, the cows gave more milk when milked by hand. Now there is little or no difference; what difference there is being in favor of the machine. (Incidentally we may mention that we have found this one of the most difficult things upon which to secure reliable data. There are so many factors which might cause a variation in the milk flow, that it is difficult to say how much was due to hand and how much to machine.)

"The next severe testing will be when hot weather comes. If the results are as satisfactory then as they are at present, we shall be prepared to recommend the machine to our dairy-farmers. In the meantime, we advise patience until we have thoroughly tested the milking-machine. It is much better that we, who are in a much better position to do experimenting than is the average dairy-farmer, shall run the risks and find out the practical difficulties and how to overcome them, than that farmers shall invest \$500 or \$600 in a machine about which very little is known in Canada at the present time."

The Veterinarian

We cordially invite our readers to consult us when they desire information in regard to sick or lame animals, and thus assist us in making this Department one of the most interesting features of The Kansas Farmer. Kindly give the age, color, and sex of the animals, stating symptoms accurately, and how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. In order to receive a prompt reply all letters for this Department should give the inquirer's postoffice, should be signed with full name and should be addressed to the Veterinary Department of The Kansas Farmer, Topeka, Kans., or to Dr. C. L. Barnes, Veterinary Department, Kansas State Agricultural College, Manhattan, Kans. If in addition to having the letter answered in The Kansas Farmer, an immediate answer is desired by mail, kindly enclose a 2-cent stamp. Write across top of letter: "To be answered in Kansas Farmer."

Barb-Wire Cut.—My 5-year-old gelding ran into the wire last week cutting a gash in left front leg; the cut is 3 1/2 inches long, and at the middle the edges are 2 inches apart; the cut seems to be almost an inch deep. As the horse did not limp any, we worked him one day, but he was too lame the next day to work. Have been using carbolic acid and lard on the wound. How should it be treated so as to leave as small a scar as possible? Should the horse be worked?
P. N.

Whitewater, Kans.
Answer.—Mix together 1 ounce each of the following: Iodiform, acetanilid, boracic acid, tannic acid, air-slaked lime. Keep the wound covered with this powder. When scabs come off of their own accord, wash the raw surface with a weak solution of carbolic acid, say a teaspoonful of carbolic acid to two quarts of water.

Hernia.—I have an 8-weeks-old colt that was ruptured when born; have not treated, thinking it would get all right. The colt is growing fine.
M. G.

Lyndon, Kans.
Answer.—From your description would judge that the colt had a hernia, and would recommend that you employ a competent veterinarian to treat the colt. A surgical operation will probably be necessary.

Blood Warts on Colts.—I have two colts that have developed blood warts. Please advise me.
J. H. G.

Winona, Kans.
Answer.—I would advise securing from your druggist some thuja ointment, in the proportion of 1 ounce of thuja-oil to a pound of lard. This is a rather expensive ointment, but has proven quite valuable in removing blood warts.

Side-Bone.—I have a bay 5-year-old mare that has what seems to me to be a side-bone; did not notice it until in April, and paid no attention to it. But the last four or five weeks she has been lame. What can I do for her? Have used a liniment.
G. O.

Glasco, Kans.
Answer.—Would advise you to use a leather pad underneath the horse's shoe. Keep that part of the foot in the neighborhood of the side-bone soft by the use of lard and pine-tar, using equal parts of each; melt them together and stir until cool, then apply to the foot with a paint brush; paint the foot all over the outside at least three times a week; every day would be better.

Lump on Hock Joint.—I have a horse with lumps on hock joint, one in front and one on each side of hock. What will take the lumps off?
W. S. A.

Coats, Kans.
Answer.—Have the following prescription filled at your drug store: 4 ounces tincture of iodine, 4 ounces tincture cantharides, 4 ounces tincture capsicum, 6 ounces sulfuric ether, sufficient compound-soap liniment to make a quart. Apply to the affected parts on hock daily until sore, then withhold for a few days and begin again.
C. L. BARNES.

Kansas Fairs in 1906.

Following is a list of fairs to be held in Kansas in 1906, their dates, locations, and secretaries, as reported to the State Board of Agriculture, and compiled by Secretary F. D. Coburn:

- Allen County Agricultural Society—Frank E. Smith, secretary, Iola; September 25-28.
- Barton County Fair Association—W. P. Feder, secretary, Great Bend; August 28-31.
- Brown County—The Hiawatha Fair Association—Elliott Irvin, secretary; Hiawatha.
- Butler County Fair Association—W. F. Benson, secretary, Eldorado; October 1-6.
- Chautauqua County—Hewins Park and Fair Association—W. M. Jones, secretary, Cedar Vale; September 11-13.
- Clay County Fair Association—Walter Puckey, secretary, Clay Center; September 4-7.
- Clay County—Wakefield Agricultural Society—Eugene Elkins, secretary, Wakefield; first week in October.
- Cloud County Fair Association—F. W. Daugherty, secretary, Concordia; September 25-28.
- Coffey County Agricultural Association—A. D. Weaver, secretary, Burlington; September 18-1.
- Cowley County—Eastern Cowley

County Fair—J. M. Henderson, secretary, Burden; September 26-28.

Cowley County Agricultural and Live-Stock Association—W. J. Wilson, secretary, Winfield; October 9-12.

Elk County Agricultural Fair Association—E. M. Place, secretary, Grenola; September 19-21.

Finney County Agricultural Society—A. H. Warner, secretary, Garden City.

Franklin County Agricultural Society—Carey M. Porter, secretary, Ottawa; September 4-8.

Greenwood County Fair Association—C. H. Weiser, secretary, Eureka; August 14-17.

Harper County—Anthony Fair Association—L. G. Jennings, secretary, Anthony; August 7-10.

Harvey County Agricultural Society—J. T. Axtell, secretary, Newton; September 25-29.

Jefferson County Fair Association—G. A. Patterson, secretary, Oskaloosa; September 4-8.

Jewell County Agricultural Fair Association—Henry R. Honey, secretary, Mankato; September 18-21.

Linn County Fair Association—O. E. Haley, secretary, Mound City; September 11-14.

Marshall County Fair Association—R. W. Hemphill, secretary, Marysville; September 11-14.

McPherson County Agricultural Fair Association—E. S. Guymon, secretary, McPherson; September 4-9.

Miami County Agricultural and Mechanical Fair Association—W. H. Bradbury, secretary, Paola; August 28-31.

Mitchell County Agricultural Association—J. E. Tice, secretary, Beloit; last week in September.

Montgomery County—Coffeyville Fair and Park Association—R. Y. Kennedy, secretary, Coffeyville; August 7-10.

Nemaha County Fair Association—V. B. Fisher, secretary, Seneca; August 29-31.

Neosho County—Chanute Fair and Improvement Association—A. E. Timpane, secretary, Chanute; August 28-31.

Ness County Agricultural Association—R. D. McKinley, secretary, Ness City; September 5-7.

Ness County—Utica Fair and Agricultural Association—R. C. Webster, Jr., secretary, Utica; August 30-September 1.

Norton County Agricultural Association—M. F. Garrity, secretary, Norton; August 28-31.

Osage County Fair Association—M. Carnaveaux, secretary, Burlingame; September 18-21.

Reno County—Central Kansas Fair Association—A. L. Sponsler, secretary, Hutchinson; September 17-23.

Republic County Agricultural Association—W. R. Wells, secretary, Belleville; September 11-14.

Rice County Agricultural and Live-Stock Association—F. L. Goodson, secretary, Sterling; August 1-3.

Riley County Agricultural Society—W. B. Craig, secretary, Riley; August 28-31.

Rooks County Fair Association—E. L. Williams, secretary, Stockton; September 18-21.

Shawnee County—Kansas Exposition Company—R. T. Kreipe, secretary, Topeka; September 10-15.

Smith County Fair Association—M. A. Dimond, secretary, Smith Center; August 21-24.

Stafford County Fair Association—P. O. Gray, secretary, St. John; August 22-24.

Sumner County—Mylvane Agricultural Association—Robt. P. Seyfer, secretary, Mylvane.

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BARRED PLYMOUTH ROCK EGGS—From free range stock, no other fowls kept on the farm. Price \$1 for 15; \$5 for 100. Mrs. C. F. Brown, Box 51, Manchester, Oklahoma.

BLUE BIRDS—Barred to the skin. Hawkins Ringlet strain. Eggs, \$1 per 15; \$5 per 100. Minnie E. Clark, Lyndon, Kansas.

BARRED PLYMOUTH ROCKS—Bradley strain prize winners; won 1st on chl. last three years at Harvey county poultry show. Eggs from pen \$2, yard \$1 per 15. R. Harmon, R. R. 6, Newton, Kan.

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B. P. ROCKS AND BUFF ORPINGTONS—Eight grand matings. Send for price list on eggs and Collic pups. W. B. Williams, Stella, Neb.

Special Reduced Summer Prices

on my Superior Strain Barred Plymouth Rocks; 15 eggs, 60 cents; 30 eggs, \$1.

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Good for Eggs, Good to Eat and Good to look at W. P. Rocks hold the record for egg-laying over every other variety of fowls; eight pullets averaging 289 eggs each in one year. I have bred them exclusively for twelve years and have them scoring 94 to 96%, and as good as can be found anywhere. Eggs only \$2 per 15; \$5 per 45, and I prepay expressage to any express office in the United States. Yards at residence, adjoining Washburn College. Address THOMAS OWEN, Sta. B, Topeka, Kans.

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FOR SALE—White Wyandottes, one pen high scoring; also eggs \$1 per 15. A. R. Gage, Minneapolis, Kans.

WHITE WYANDOTE COCKERELS (Stay White), \$1 to \$5 each. Eggs, \$1.50 per 15. S. W. Arts, Larned, Kansas.

WHITE WYANDOTTES—the lay all winter kind. Bred to high score, large egg record cockerels. Dustin strain. Eggs 5 cents each, \$4 per 100. J. L. Moore Eureka, Kans.

SILVER LACED WYANDOTTES—Thorough bred cockerels, \$2; pullets, \$1.50. Jewett Bros., Dighton, Kansas.

SILVER LACED AND WHITE WYANDOTTES \$1 per sitting of 15. Eggs guaranteed. Crotlier free. R. C. Macaulay, Route 1, Frederick, Kans.

LANGSHANS

BUFF LANGSHANS \$4.00 per 15 eggs. White \$2, Black \$3, \$1 and \$5 per 100; Buff Leghorns, Orpingtons, Cochins, S. & D. C. B. and White Leghorns, B. and W. Rocks, W. and S. L. Wyandottes, L. Brahmas, \$1.50 to \$2.00 per 15. Toulouse Geese eggs 20c each. M. B. turkeys, \$1.50 and \$2 per 9.



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RHODE ISLAND REDS EXCLUSIVELY—Cockerels \$1. Eggs, sitting \$1.50; for incubators \$5 per 100. Address Ben Warren, Maple Hill, Kans.

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BUFF COCHIN EGGS—From high scoring prize-winning stock, \$1.25 per 15; \$5 per 100. Stock for sale. A. R. Gage, Minneapolis, Kans.

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Eggs for Hatching M. B. turkeys, \$3 per 10. Golden Wyandottes, \$2, \$1.50 and \$1.25 per 15. Satisfaction guaranteed. Mrs. A. B. Grebt, Emporia, Kansas.

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WHITE HOLLAND TURKEYS, MAMMOTH PEKIN DUCKS AND BARRED PLYMOUTH ROCKS, \$1 per setting for any of the above, fresh eggs carefully packed and safe arrival guaranteed. A. F. Huse, Manhattan, Kans.

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

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SILVER SPANGLED HAMBURGS.

MY SILVER SPANGLED HAMBURGS led their class at the last three State Shows; also have Worlds Fair Premium. Eggs \$1.25 to \$2.00. Mrs. Fay Finkle, Galva, Kans.

INDIAN RUNNER DUCKS.

Indian Runner Ducks and White Wyandottes Eggs Fresh, fertile and from high-class stock. Price reduced to \$1 per sitting. L. D. Arnold, Enterprize, Kans.

The Poultry Yard

Conducted by Thomas Owen.

Dry-Feeding.

EXCERPTS FROM ADDRESS OF A. F. HUNTER, BEFORE THE CANADIAN POULTRY INSTITUTE.

For many years past there has been a growing dissatisfaction with both the methods employed and the results attained in our poultry work. The methods employed have involved an excess of labor and the results attained have been, in far too many cases, disappointing; the disappointments taking the form of poor health of the flocks of both mature birds and younger chicks, resulting in a lowered egg-yield, increased mortality, diminishing profits, and in very many cases an abandoning of the poultry business. That there may be many contributing causes to the unsatisfactory results has been conceded by poultry writers, among them unsanitary conditions in the houses and ground of yards poisoned by the droppings, vermin infestation, stock debilitated by inbreeding and breeding from late-hatched and consequently immature pullets and cockerels, bungling methods of feeding, shutting the birds up in tight houses, etc. Any or all of these may have helped to the unsatisfactory results above noted.

In the last few years observing poultrymen have been experimenting along two different paths, in the hope of finding aids to better results; one of these paths being to more and more open up the houses to fresh air and sunlight, the other being a better and more common-sense method of feeding. The first of these we have not time to study in detail, merely pausing to observe that it is a decided gain in method, and substantially improves the conditions of health in the flocks; the second, that of feeding, gives us all the range we have time for to-day.

That quite a good deal of the trouble we have been having with our flocks was due to defects in methods of feeding has come to be the opinion of many observers, and of late the feeling has been gaining ground that the feeding of a cooked mash is a serious mistake. One reason for this is found in the fact that the fowls gobble the food down very quickly, far too quickly for the digestive organs to properly perform their allotted task, and the results have appeared in the form of indigestion, looseness of the bowels, and other symptoms of the birds being out of condition. Not infrequently the birds become over-fat, the organs become engorged, a blood vessel bursts, and the fowl is found dead under the roost in the morning. The explanation of this is that feeding a cooked mash is "forcing" the birds beyond their ability to digest and assimilate; it is analogous to "forcing" for rapid growth of tender, delicate flesh for market, and the process is all right for chickens that are to be killed early for the table; for that definite purpose, the quicker the growth the greater the profit, but for birds that are to endure the strain of persistent egg-production, and are to be the parents of strong, vigorous, bound-to-live offspring, the "forcing" process invites disaster, because it induces and continues a condition of tenderness, which is exactly opposite from the hardness so desirable for the best results.

HENS AND HOGS.

A farmer in Illinois tells his experience in feeding, and how he came to adopt the dry-feeding method. He says: "After reading much upon the subject, I concluded the greater part was nonsense, and I now fully believe that inside the next ten years feeding poultry in every stage will be much simplified. I have had some experience in growing hogs, and did considerable experimenting with feeding. I found that by using ground mixed grain, dry fed, I could grow a prettier, more shapely, and firmer-fleshed hog, than by feeding a slop.

"Nothing under the sun fed in its natural state will blow up a pig to such an extent as a rich slop, and no pig so fed will have the fine, symmetrical appearance of one that is fed more in accordance with nature. I fully believe the slop-feeding is destructive of the digestive organs of the pigs, and also fully believe the mash business for chickens and hens gives the same unfortunate result. Any mash will begin to sour soon after being eaten and subjected to the heat of the body, and this too-early souring of the food in the crop, before

it is properly passed on to the gizzard and intestines, is the foundation of sour-crop and bowel trouble. I will guarantee you that if cracked or whole grain is given regularly (and not in spurts now and then), examination of the crop at any time will not reveal that sour smell so frequently noticed in mash-fed hens.

"When dry-fed, a chick will not gulp down a great amount of the food at one time, and I fully believe that with dry feed moistened with saliva it will not sour nearly so quickly as if it is moistened with hot water or milk. If my method of feeding will grow good, healthy Plymouth Rock pullets to weigh 7 1/2 to 8 1/2 pounds in seven or eight months, I believe that pullet is in better shape to lay, and, if continued on dry food, will at 2 years of age lay as many or more eggs than will a mash-fed chick and hen; and not only this, but the eggs will be larger and more fertile, and when you come to sell the carcass it will have both a better appearance and better weight. I know the eggs I am getting now are better in size, color, and shell than any I ever bought; I mean 35 to 50 per cent better in quality, and this I attribute to my having adopted the dry-feeding method. I am certain that dry food properly fed means health, with no sour-crop and no bowel trouble.

"When I began dry-feeding I had never seen an article upon the subject. I knew I could do better with hogs on dry food, but had never studied why. I knew I had too much to do, was too busy with the farmwork to grow chickens with mashes. I planned my year's campaign before a chick was hatched, that is, the best of grain, sweet milk before the chicks all the time, beef scraps also, and charcoal accessible all the time, with clover-hay chaff for litter, and good range. I have experimented with dry feed for chicks for two years, the past year for all ages of poultry, with the best of success."

MANY ADVANTAGES.

Dr. Nottage, of Goshen, Mass., who is a sturdy advocate of the dry-feeding method, says: "To better understand the advantages of dry-feeding, let us look at the method I employ in using the grains. The fact that I have gotten rid of mixing and cooking mashes, and am now feeding most of the grain and for the greater part of the time from feed-hoppers, shows how much easier it is to care for a good-sized flock of fowls. The advantages are apparent to all who feed their flocks four or five times a day, and are constantly fussing with them. I have come to be spoken of by the farmers around here as 'the man who feeds his hens twice a week,' from the fact that during the growing period, from the incubator to the pullet that is about beginning to lay, I feed all the grain and beef scraps from feed-hoppers which I fill twice a week. Keep in mind that all young stock is on free range, and the laying birds in yards so ample they seldom wander to the ends of them; also that this laying stock is let out to wander at will on alternate days.

"Have plenty of grit where the chicks can pick it up for their first meal. Get your miller to mix together one part of good sound wheat to two parts of sound corn and crack them a little finer than common cracked corn. Put a small heap of this in the front of the brooder, and beside it a small heap of dried beef scraps, from which the coarser pieces have been sifted out; this sifting out of the coarse pieces to continue till the chicks are big enough to eat the scraps as they come to hand. If you have skim-milk, keep the youngsters on that for a drink until they become a little tired of it, which may be in two or three weeks; you can then let them have their choice between milk and water. If there is not a green sod for them to pull and work at when they get into their second week, chop up some onions, or lettuce, or cabbage, and let them have some once a day. Get them out on the ground as soon as there is a blade of green grass to be seen pushing up through the sod."

You can carry the birds along on a ration of half wheat and half cracked corn, with the beef scraps added, until the pullets are about half grown, say 10 or 12 weeks old; when the grain-ration is gradually changed by the introduction of the best grade of oats till in a couple of weeks it will be a fourth oats, a fourth wheat, and half cracked corn, and on this ration they are left to grow to full maturity. The addition of oats to the hoppers is to strengthen the body-building side of the ration, oats being the best body-builder of all the grains. In this simple way it is

LEGHORNS

ROSE COMB BROWN LEGHORN EGGS, 15 for \$1, 50 for \$2.50, 100 for \$4. Mrs. John Holshay, Bendena, Kans.

BUFF LEGHORNS AND BUFF ORPINGTONS. Catalogue free. W. H. Maxwell, 1240 Quincy St., Topeka, Kans.

STANDARD-BRED SINGLE-COMB BUFF LEGHORNS—Headed by first prize pen Chicago show 1904 and took six first prizes and first pen at Newton 1904. Eggs \$3 for 15. S. Perkins, 801 East First street, Newton, Kansas.

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

EGGS FOR SALE—S. C. W. Leghorns, W. Wyandottes, \$1 per 15. W. H. Turkeys, \$1.50 per 9. Emeralds, 20c each. W. African guineas, \$1 per 17. All guaranteed pure-bred. A. F. Hutley, Route 2, Maple Hill, Kansas.

FOR SALE—Exhibition S. C. Black Minorca cockerels, \$2. I guarantee them. Address George Kern, 517 Osage street, Leavenworth, Kans.

Pure Single Comb Brown Leghorn Eggs—30 for \$1; 100 for \$3. F. P. Flower, Wakefield, Kans.

Buff Leghorns S. C. Eggs, 80 for \$1.25, 100 for \$3. John A. Beed, Route 3, Wakefield, Ka.

Johnnie Chase, Glasco, Kas.

Breeds Black Minorcas, S. C. Brown Leghorns and Barred Rocks. Second to none in the state. Eggs, \$2 per sitting.

Notice

To those who have bought eggs of me this season and have failed to get satisfactory hatch, please advise me and I will make it right.

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Breeder of R. C. and S. C. White Leghorns and White Wyandottes. McPherson, Kansas

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

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possible to grow good, strong, healthy layers, and not have one bit of fuss about "balanced rations" and forty different kinds of food. When the pullets show signs of getting ready to lay, which they will do by October 1 if they are hatched in April, it is high time to get them into the quarters they will occupy during the winter, and it is now time to change the manner of feeding somewhat.

The food for the laying hens is in a food-hopper which is divided into three compartments, each holding about half a bushel; in one compartment is a mixture of one-half barley and a half cracked corn, in the middle compartment is the beef scraps, and in the other whole oats. This food is there in the hoppers all the time, the hoppers being refilled twice a week, and never being empty, and they eat of either or all of them just as they choose. It is evident that if the hoppers were sufficiently large to hold a full week's supply of grain they would only need to be filled once a week, and then the Doctor would have it told of him that he fed his hens only once a week!

Poultry Notes.

Now that the enthusiasm of the hatching season is over, one is apt to neglect the young growing stock, letting them take care of themselves. Here is where the poultry-raiser makes a great mistake, for the growing stock needs great care and attention just at this time. Shade is one essential thing that should be provided these hot days, otherwise the youngsters will dwindle and die in great numbers. Another essential is plenty of pure, fresh water. Of course, it is unnecessary to say that plenty of pure food is also an essential, but we wished to call particular attention to the essentials that are generally neglected during hot weather and they are shade and water.

The hatching season for this year is about over and we have heard but very few complaints about eggs not hatching well. Some buyers of eggs think there is a conspiracy among the poultry-breeders to send them infertile eggs, and that they resort to all manner of tricks to prevent the eggs from hatching, such as dipping them in boiling water, pricking them with a pin, etc., but their numbers are few and gradually decreasing. What started this train of thought was the advertisement of a poultry-breeder in this week's KANSAS FARMER saying, "To those who have bought eggs of me this season and have failed to get a satisfactory hatch, please advise me and I will make it right." Talk about poultrymen being dishonest! Show us another such instance as this among cattlemen, hogmen, horsemen, grocers, or any other kind of men. Don't you think there might be complaints enough on hand without inviting them in this manner? But this breeder was an honest man and wanted all his customers to be satisfied. The buyer of eggs should take upon himself a goodly share of the responsibility connected with a good hatch. He ought to handle the eggs carefully after their journey. His sitting hens should have been carefully trained and handled, and have been placed in their secluded and quiet nests some time before, thus getting them settled to work. The nests should not be too shallow or too deep or too hollow, thus endangering the eggs to breakage or to chilling while setting. The sitter should be freed from lice, so that she won't "sit standing up," by a liberal dusting with tobacco dust or a good insect-destroyer. There are a dozen ways in which the buyer could help in procuring a good hatch, but a great many of them put all the blame for a poor hatch, on the seller of eggs and take none of it themselves. We trust that honest breeders will not be imposed upon overmuch by avaricious buyers.

If you are not going to set any more eggs for hatching, it would be a good idea to separate the roosters from the hens and give the latter a much-needed rest. Let the hens have free range, if possible, and pen up the males. The hens will lay more eggs and the latter keep good longer. If you do not need the roosters for next year's breeding, it would be a good idea to sell them to the butcher or use them yourselves. A lot of useless roosters are a lot of worthless stock on any farm.

Wheat bran is one of the best and cheapest foods for chickens and eminently healthful. More bran and less corn would improve any flock, especially during warm weather, for corn is very heating. A richer food is bran and cornmeal. Feed less corn and more bran and ground oats.

Right now is the time to dispose of the superannuated pet hen, which has



Los Angeles, San Francisco

and Return



\$52 Santa Fe \$52

Tickets on sale June 25th to July 5th, final return limit September 15th, liberal stop over privileges allowed, you have your choice of routes going one way and returning another. Take in the Grand Canyon of Arizona at slight additional cost. Tickets good on the California Limited, finest train in the world. Tickets going or returning via Portland slight additional cost. Also very low rate daily during the summer to California points and return. Write me for literature, sleeping car reservation and full information.

T. L. KING, C. P. & T. A.

TOPEKA, KANSAS

ceased to be sufficiently productive to pay for her keeping. A young hen or a pullet may be fed until she is as fat as butter, and will lay right along, but an old one, on the same feeding or a great deal less, will get too fat and lazy and will not produce enough to pay for her room rent, to say nothing about her feed. Therefore, dispose of all the old stock that you do not require for next season's breeding. All over 3 years old should be disposed of. When hens are worth ten cents a pound at the butcher's is a good time to sell them.

It is a good time just now to clean out the nest boxes and give them and the poultry-house a thorough drenching of a strong lice-killer. Hot weather breeds mites and lice by the thousands. To keep them down, you must clean up the houses and thoroughly disinfect them.

Early Molting.

It is the early-molting hens that make the early fall and continuous winter layers. There is no use for its requiring three months for a hen to shed her old coat and take on her new one. July is the month to get your hens into condition to molt.

Put your hens on short rations for the next two or three weeks. Shut off the corn diet, and instead feed them something like wheat bran and middlings. This sort of diet will soon reduce their flesh. Get them down in flesh as much as possible. This treatment will stop the egg supply, but this should not in the least interest you, inasmuch as you are not expecting eggs during this treatment.

After you have the hens reduced in flesh to almost skin and bones, then reverse the feeding and fill them up on fattening feed, such as corn, and once a day a mash to which add linseed-meal in liberal quantities and meat. In a few days the old feathers will fairly drop out by the handfuls—and in a short time the new ones will begin coming in.

In this way you will soon have them clad in new coats, and by September 1 they will be ready to lay, while your neighbor's hens will be just commencing to molt and it will continue until cold weather. It pays to get the old feathers out and the new ones in as rapidly and early as possible.

Barrett's Tarred Felt.

The Barrett Manufacturing Co., Chicago, write: "The extermination of quack-grass and other noxious weeds is a subject requiring serious consideration and continual attention in many farming districts, and we have noticed that various methods for eradication of such

weeds often appear in the correspondence columns of leading agricultural journals, in which connection we take it that the following report, very recently received from one of our traveling salesmen might be of interest to you.

"The report is dated from Blooming Prairie, Minn., June 13, 1906:

"I to-day learned of a new use for Barrett's Tarred Felt. A lumber-dealer in Owatonna (Minn.), and a dealer in this town tell me that they have sold a good many rolls of our felt to farmers who spread same over the ground to kill the growth of "quack-grass," which grows to an alarming extent in this part of the city, and is very hard to get rid of, even plowing the ground over four times in the season failing to destroy it.

"A farmer discovered by accident a piece of tarred felt that had been blown out on his field and had fallen on a patch of quack-grass and had remained there only six or seven weeks, when, to his surprise, he found that the grass so covered had been entirely killed. He told his neighbors about it, and they all got tarred felt which they spread on their land, weighting it down with dirt or stones, leaving it there six or eight weeks when the job was done and all at a very light expense.

"Should you want any further information about this at any time write Mr. Rogers, manager of Hayes, Lucas Lumber Co., Owatonna, or A. Selberg & Co., Blooming Prairie, Minn."

"It would seem that the tarred felt effectually withstands the elements and keeps the oxygen from being taken in through leaves or lungs of the plant for a long enough period to cause it to die out roots and all. In fact, the tarred felt could probably be used several times in different parts of a field, thus lessening the cost, which is but little even at the start."

Union Pacific Bulletin, June, 1906.

One fare for the round trip to the Northwest: To Puget Sound and Portland, direct. Returning via California, \$12.50 additional. Tickets on sale June 18 to 22, inclusive. Limit 60 days.

To California, Portland, and Puget Sound: Daily low excursion rates June 1 to September 15, applying via variable routes, limit October 31.

To California and Return: Still lower rates June 25 to July 7, inclusive; returning direct or via Portland.

To Colorado and Return: Daily from June 1 to September 30, one fare plus 50 cents. Still lower rates for the Elks' great meeting at Denver. Tickets sold July 10 to 16, inclusive.

Homes for Thousands.

The Shoshone Indian Reservation lands will be opened to settlement August 15. Excursion rates less than one fare round trip, daily, July 12 to 29, \$26.70 from Chicago, via the Chicago & North Western Railway, the only all-rail route to the Reservation border. Rates of registration July 16 to 31. Write for pamphlets telling how to secure one of these attractive homesteads. All agents sell tickets via this route. W. B. Kniskern, Passenger Traffic Manager, Chicago.

When writing advertisers please mention this paper.

Every Heart-Ache

Every pain in the breast, difficult breathing, palpitation, fluttering or dizzy spell means that your heart is straining itself in its effort to keep in motion. This is dangerous.

Some sudden strain from over-exertion or excitement will completely exhaust the nerves, or rupture the walls or arteries of the heart, and it will stop.

Relieve this terrible strain at once with Dr. Miles' Heart Cure. It invigorates and strengthens the heart nerves and muscles, stimulates the heart action, and relieves the pain and misery.

Take no chances; make your heart strong and vigorous with Dr. Miles' Heart Cure.

"I suffered terribly with heart disease. I have been treated by different physicians for my trouble without results. I went to a physician in Memphis, who claimed that I had dropsy of the heart. He put the X-ray on me, and in connection with his medicine he came near making a finish of me. Some time before this a Mr. Young, of St. Louis, was in our town. He saw my condition, and recommended Dr. Miles' Heart Cure to me. I gave it little attention until my return from Memphis, when I concluded to try it, and am pleased to say three bottles cured me."

CHARLES GOODRICH, Caruthersville, Mo.
Dr. Miles' Heart Cure is sold by your druggist, who will guarantee that the first bottle will benefit. If it fails he will refund your money.
Miles' Medical Co., Little Rock, Ark.

MOTHERS FOR STOMACH AND PIN WORMS IN CHILDREN AND ADULTS
No CASTOR OIL TRY EASY TO TAKE. NECESSARY. Guaranteed Harmless. Sent anywhere by mail on receipt of 10 cts. Agents Wanted. Dept. G
Caplan Drug Co., Box 1106, New Orleans, La.

FREE UNTIL CURED

Blood Poison, Catarrh, Deafness, Asthma, Stricture, Sexual Weakness, and Consumption.
No Deposit or C. O. D. scheme, I trust to your honor to pay when cured
M. G. SLOCUM, M. D.
222 East Douglas Ave., Wichita, Kansas



Tebo Lawn Dispersal Sale of Short-horns.

(Continued from page 679.)

buyers were the judges and their verdict must stand. Of course, Choice Goods 186802 was the top of the bull sale. He brought \$5,500, and finds his new home in Nebraska, where he will be taken by Howell Reece, of Pilger, Owen Kane, of Wisner, and A. B. Clarke, of Wayne, who were his purchasers. This great bull was in the pink of condition and was ready to step into the show-ring and win. Two of his sons were among the most-talked-of bulls in the sale and brought good prices. Golden Goods, a yearling, brought \$1,500, and finds his new home with Clay Duncan, Osborne, Mo. His brother, Lassie's Choice, went to N. P. Clarke, St. Cloud, Minn., for \$1,000. S. C. Hanna, of Howard, Kans., was a strong bidder on both these calves.

The Scotch females in the sale went like hot cakes and at good prices. There were numerous bidders from all over the country after these cattle, but it remained for Capt. C. E. Leonard, of Bellaire, Mo., to buy the highest priced one. Marengo's Lavender Countess sold to Captain Leonard & Son for \$2,150. Imported Village Belle went to W. E. Jones, of Willamsville, Ill., for \$2,000. Other good prices paid for females are shown in the accompanying report.

It was a great sale. Colonel Casey had spent thousands of dollars in bringing together the animals which made himself and herd famous, and most breeders present could not help a feeling of depression that so great a herd must be dispersed. It takes many years or much money or both to create a good herd of Shorthorn cattle and the life work of some breeder who is above the average in his abilities.

The sale was conducted by Col. F. M. Woods, of Lincoln, Neb.; Geo. P. Bellows, Marysville, Mo.; R. L. Harriman, Bunceton, Mo.; James W. Sparks, Marshall, Mo.; and R. E. Edmonson, Kansas City, Mo. It is impossible to bring together a greater array of auctioneering talent in the United States and possibly in the world than those assembled in the ring at this great sale.

Each breeder and visitor present felt that he had perhaps never witnessed a more impressive scene than that afforded by Colonel Woods and his assistants in the disposal of Choice Goods and the final breaking up of this great herd of cattle. We take great pleasure in presenting a photographic reproduction of this great scene which is the only one of its kind in existence and which will be preserved by our readers a memento of an epoch in Shorthorn history.

The sales in detail were as follows:

Table listing bulls and females with their respective owners and prices. Includes entries like Golden Goods 253393, Lassie's Choice, and various female calves.

Table listing various cattle and their owners with prices. Includes entries like Miss Luna, Hamilton, Mo., and various calves and cows.

Advertisement for Union Pacific featuring the text 'LOW RATES VIA UNION PACIFIC' and listing various travel rates to Colorado, Oregon, and California.

Advertisement for Alfalfa Seed from Mabeth & Kinnison, Garden City, Kansas, mentioning 'Pure Kansas Grown Seed'.

Table listing various pigs and their owners with prices. Includes entries like W. E. Hall, Menville, Ia., and Rose Barker, J. F. Chiles, Buckner, Mo.

Model, a son of the great Higgins Model 3251. Antelope is a good individual, and the blood represented in these pigs should make them sell at a good price.

If you want a good Expansion pig, write to Albert Mendenhall, Fairbury, Neb. He has some of the finest we have seen this year.

One of the best herds of O. I. C. hogs that we have seen this year is that of William Gilmore, of Fairbury, Neb. Mr. Gilmore has a carefully selected bunch of brood sows all coming from the most noted herds of the East.

A Horse-Importer Honored.

McLaughlin Bros., of Kansas City, Columbus, and St. Paul, have won many honors for their horses since they began the business of importing Percherons. The last and greatest honor to them is the greatest. They write: "We received a cable message from James B. McLaughlin, Saturday afternoon, saying that the President of the Republic of France personally conferred upon him the rank of Legion of Honor. This distinction carries with it the highest honor. There is nothing in the world more sought after and more highly prized than the Legion of Honor or conferred by the French Government. The title implies that the bearer has been of great service to mankind in some way. We are all of us very proud of the fact that Mr. McLaughlin, our brother, who spends the greater part of his time in France, is officially known in that country as 'Chevalier de la Legion d'Honneur.'"

\$1,075 for a Jersey Bull Calf.

An auction sale of Jerseys and Berkshires at Hood Farm, Lowell, Mass., on Wednesday, June 13, was attended by representative breeders from all parts of the country, including Oregon, Missouri, Ohio, Virginia, New Jersey, New York, and New England. The sale was under the management of L. F. Herrick, of Worcester, Mass. The highest price paid for a bull was \$1,075 for a bull calf, the son of Hood Farm Pogs 9th and Tonona 9th, of Hood Farm. The sire of the calf is a son of Figgis, champion and grand champion cow at the World's Fair, St. Louis, 1904, and the dam is the champion yearly authenticated test heifer of

Gossip About Stock.

T. J. Charles, the well-known Poland-China breeder, of Republic, reports that his pigs are doing fine and that while he lost a great many this spring, the ones he has left are extra good, and that he will have some high-class stuff to offer the breeders this fall. Mr. Charles is one of the breeders who has made a success of the business and his customers are sure to always get fair treatment.

Geo. Kerr, the popular Duroc-Jersey breeder, of Sabetha, Kans., has purchased from W. H. Taylor, of Lincoln, Neb., the choice boar from a litter of five pigs sired by Ohio Chief. The price paid was \$250. Mr. Kerr always buys the best, and his customers may rest assured that he will spare neither time nor money in keeping his herd up to the standard. That is why he is popular and can always find a market for all he can raise.

P. J. George, of Byron, Neb., has some good spring pigs for sale. Mr. George is one of Nebraska's young breeders, and while his stock is not as fashionably bred as some, yet his sows are good individuals and their pigs should make useful animals. Mr. George is also an auctioneer, and he is becoming popular in vicinities where he has cried sales. He is a good judge of live stock and always makes it bring good prices. Write Mr. George for dates.

Z. Ireland, of Chester, Neb., has a fine litter of pigs out of a sow called Antelope 97668 by Fancy Chief by Ohio Chief. The pigs were sired by Young

the breed, bred, owned, and tested by Hood Farm. This bull calf was bought by Hartman Stock Farm, Columbus, Ohio, and the buyer refused an offer of \$1,500 for the calf after the sale.

The Berkshires brought good prices for an Eastern sale. Several daughters of the phenomenal show boar at the Western fairs of 1905, Hood Farm Rex, were included in the sale, and were in great demand.

The sale exceeded in interest and importance the sale held in 1902 when the bull and cow that afterwards won champion and grand champion prizes at the St. Louis World's Fair were sold at auction by Hood Farm.

Swine at the Kansas State Fair.

F. P. Maguire, the big Poland-China breeder at Hutchinson, has been again appointed superintendent of swine at the Kansas State Fair, which will be held at Hutchinson from September 17 to 22.

Something About Hoggette.

Will Ungles, proprietor of the Hoggette Remedy Company, of Lincoln, Neb., in a recent circular letter says: "Last December we offered a few suggestions on the care of the brood sow through the breeding season."

A Horse Book Free.

"A Sketch of the Development of the Modern Horse" is the title of a handsome little booklet that is free to readers of THE KANSAS FARMER who ask for it.

Special Summer Tourist Rates to Canadian and New England Points

Via Nickel Plate Road. Fifteen day limit, one fare plus two dollars, from Chicago. Thirty day limit, one fare plus four dollars, from Chicago.

Special Rates for Fourth of July.

The Missouri Pacific will sell tickets between all points in Kansas within 200 miles distance on July 3 and 4, limited to return until July 6, at rate of fare and one-third for the round trip.

Grain in Kansas City.

Receipts of wheat in Kansas City yesterday were 51 cars; Saturday's inspections were 28 cars. Prices were unchanged to 1c lower.

Receipts of corn were 38 cars; Saturday's inspections were 23 cars. Prices were unchanged to 1/4c lower.

Receipts of oats were 12 cars; Saturday's inspections were 6 cars. Prices were 1/2@1c lower.

No. 2 white, nominally 39@40c; No. 3 white, 2 cars 39c, 1 car 38 1/4c, 2 cars 38c; No. 2 mixed, nominally 37@37 1/4c; No. 3 mixed, 36 1/4c, 1 car 35 1/4c.

Kansas City Live-Stock Market.

Stock Yards, Kansas City, Mo., June 25, 1906.

A good rain pretty well over Kansas City territory a week ago, and another within the last two days has altogether changed the cattle outlook.

Receipts of hogs last week were very liberal at 72,500 head, and prices were very satisfactory to shippers.

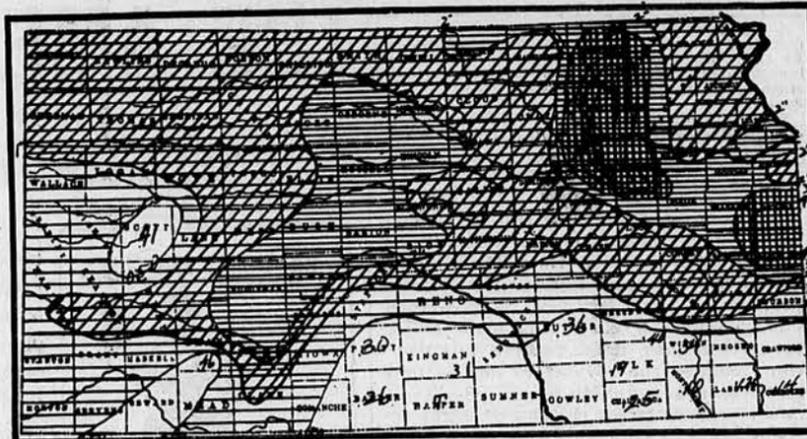
Sheep and lambs sold at stronger prices last week and market is higher to-day. Not many natives are included, bulk of the supply being made up of Texas and Arizonas.

South St. Joseph Live-Stock Market.

South St. Joseph, Mo., June 25, 1906.

Light receipts at all points gave the cattle market a good active start for the week. At this point the receipts were extremely light, and were about one-third quarantine steers.

RAINFALL FOR WEEK ENDING JUNE 23, 1906.



SCALE IN INCHES: Less than .50, .50 to 1, 1 to 2, 2 to 3, Over 3, T, trace.

prices late last week. The market for all classes of butcher and dressed cows and heifers was in very strong tone with not near enough at hand to meet the demand.

Lighter receipts of hogs were not entirely unexpected as this will be a big week in the harvest fields and farmers are not in a hurry to sell hogs as long as prices hold up to an attractive level.

The first grass range stock from the West arrived in the sheep department to-day; these were some Idaho ewes that sold readily at \$5.85.

WARRICK.

Weather Bulletin.

Following is the weekly weather bulletin for the Kansas Weather Service for the week ending June 26, 1906, prepared by T. B. Jennings, station director.

CLIMATOLOGICAL DATA FOR THE WEEK.

Table with columns for Temperature (Maximum, Minimum, Mean, Departure from normal) and Precipitation (Total, Departure from normal). Rows are categorized by Western, Middle, and Eastern Divisions, listing various cities and their weather data.

A Home For Half the Money

In the Pacific Northwest. A handsomely illustrated 88-page book,

"OREGON WASHINGTON IDAHO AND THEIR RESOURCES"

Telling about the three States, and contains a good map of the section. Write for it today, send four cents in postage.

A. L. Craig,

ROOM 212 WORCESTER BLDG.,

PORTLAND, OREGON.

A Great Fountain Pen Offer

Our Best \$1 Fountain Pen and the Kansas Farmer one year, both prepaid \$1.50. Our best \$1.50 Fountain Pen and the Kansas Farmer one year, both prepaid \$2.00.

Fitted with solid gold pens, will last 15 years. All pens guaranteed. Our stock is the largest west of Chicago.

M. L. Zercher Book and Stationery Co. Topeka, Kansas



4th of July Excursion Rates

Excursion Rates between all points on M. K. & T. Ry. Tickets on sale July 3d and 4th, to points within 250 miles of selling station; good until July 6th.

On July 3d tickets, good 30 days for return, will be on sale at all stations in Missouri and Kansas to Indian Territory, Oklahoma, and Texas.

See M. K. & T. Agent and plan your trip now.

W. S. ST. GEORGE General Passenger Agt., M. K. & T. Ry. Wainwright Building, St. Louis, Mo.

Collections made in all parts of the United States No fee charged unless Collection is made

Both Phone No. 1577

The Kansas Collection Agency

415 Kansas Avenue. TOPEKA, KANSAS

Special attention given to stock-breeders account Reference furnished on application.

Notice.

Notice is hereby given that the adjourned annual meeting of the stockholders of The Topeka & Northwestern Railroad Company, and a meeting of the stockholders to consider proposed amendments to the by-laws of the company, will be held at the office of the company in the Office Block, in the city of Topeka, Shawnee County, Kansas, on Saturday, the 7th day of July, 1906, beginning at ten o'clock a. m.

By order of the Board of Directors. H. A. SCANDRETT, Secretary.

The Apiary

Swarming.

EDITOR KANSAS FARMER:—Swarming will be the rule with the bees during the honey season if something is not done to check it.

The first prevention to use is plenty of storage room, for bees prefer to fill every available place with honey before attempting to swarm.

If increase is desired by swarming, it must be limited to an extent. The first swarm from the hive is usually very profitable, and it is only by chance that the second is so, hence one swarm, as a rule, is all that should be allowed from a colony.

We should know just when to expect swarms. It is a very simple and very easy matter to ascertain just when a swarm will issue from the hive.

To prevent swarming, keep the queen-cells away. Cut them from off the combs, and see that not one is left.

This will, as a rule, keep them from swarming, but it must be kept up at regular intervals, say once a week, for the bees will start new cells and thus it will only delay them a short time.

To prevent losing bees by swarming and leaving, clip the old queen's wings, for the swarm will not go away without its queen, but will go back to its hive when it finds its queen is not on the wing with it.

She probably will come out of the hive and crawl off on the ground and may never get back to the hive, in which case the bees will await the hatching of the young queens, and may come again with a young queen.

Make a careful examination about the hive when the bees are thus swarming, and in most cases you will find the old queen on the ground. Frequently, a few of the bees will find her, and cluster about her.

If you do not wish your bees to swarm, never lose sight of the first and best prevention, that of giving them plenty of storage room, but if this fails, follow up with something else as above.

Some colonies will persist in swarming; they seem to get the swarming fever to such extent that they will swarm under any conditions. In this case, it is always best to give them a chance to begin the new life that they so much

KANSAS FARMER.

Established in 1868.

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

SUBSCRIPTION PRICE: \$1.00 A YEAR

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

ADVERTISING RATES.

Display advertising, 20 cents per line, agate (fourteen lines to the inch). Continuous orders, run by the paper, \$1.50 per inch per week.

Special reading notices, 30 cents per line. Special rates for breeders of pure-bred stock. Special Want Column advertisements, 10 cents per line of seven words per week. Cash with the order.

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 new advertising orders intended for the current week should reach this office not later than Monday.

Change of copy for regular advertisement should reach this office not later than Saturday previous to publication.

Every advertiser will receive a copy of the paper free, during the publication of the advertisement. Address all communications to

KANSAS FARMER CO.,

116 West Sixth Ave., Topeka, Kans.

Special Want Column

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

CATTLE.

FOR SALE—Some good young Shorthorn bulls (just a year old) by the 2900 pound Marshall Abbotts-burn 3rd 185805. Cheap, breeding and individual merit considered. D. Ballantyne & Son, Herrington, Kans.

FOR SALE—Registered Holstein-Friesian bull and nine females; also 40 head of choice cows and heifers, a few of them fresh now and the balance will come fresh in the fall. M. S. Babcock, Nortonville, Kans.

FOR SALE—The pure Crutchshank bull, Violet Prince No. 145647. Has been at the head of our herd as long as we could use him. An extra animal. H. W. McAfee, Topeka, Kans. 2 miles west of Kansas Ave. on Sixth street road.

FOR SALE—Registered Jersey cattle. Two yearling bulls. Sires—A son of Bessie Lewis, 32 lbs. butter 7 days, and "Financial Count" (imported); granddam held Island butter record 3 years. Sire's dam holds public milk record of 58 pounds daily, and his dam and Island winner in class for two years. Her four dams 23 to 25-quart cows, and all winners. Sayda Polo Jersey Farm, Parsons, Kansas.

REGISTERED GUERNSEY BULLS—Ready for service. Also pure-bred Scotch Collie puppies. Dr. J. W. Perkins, 422 Altman Bldg., Kansas City, Mo.

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

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

A BUTTER-BRED Holstein bull calf—The best purchase for grade dairy herd. See report Santa Fe Dairy Educational Special. Start right in your breeding. Sixty-five head to choose from. Geo. C. Mosher, Hillcrest Farm, Greenwood, Neb.

PEDIGREED SHORTHORN BULL 3 years old; sire Magenta, who cost \$1,000 at 8 months. Cheap. S. J. Rents, Leavenworth, Kans.

insist upon. All second swarms, or swarms that bring off young queens with them, must be very carefully looked after to see that the young queen is there and laying.

It will be perhaps a week or ten days before young queens begin laying after being hived, for they must receive fertilization, leaving the hive from one to two or three times, and in many cases they never return, being caught by birds or some other enemy and destroyed, thus leaving the colony hopelessly queenless, and the result to the swarm is that it is a total loss and will become entirely extinct.

Sometimes swarms will issue from the hives and return again back to them. They may do this every day for several days. The cause of this is that the queens did not come with them but remained in the hives. Some queens seem to hesitate to leave their hives, and only by repeated efforts by the bees will they come.

If we wish the swarm to come off, we can play the queen a sly trick, by placing an empty hive on the old stand while the swarm is out and when it returns the bees will go right into the new hive. We can then hunt up the queen in the old hive and put her in with the new swarm, and after all are in nicely, we remove the new swarm to another location, and place the parent hive back on its old stand, and thus we have the queen swarmed and she does not know what has happened to her.

A swarm of bees should be promptly hived after settling well, and should not be left long hanging to a limb of a tree, for it is due to go any time, especially if exposed to the hot sun. A. H. DUFF, Pawnee County.

HORSES AND MULES.

FOR SALE—At reasonable prices, Black Imported Percheron stallions. E. N. Woodbury, Cawker City, Kans.

FOR SALE—One black team, 6 and 7 years old, weight 2,600 pounds. Mr. & Mrs. Henry Schrader, Wauweta, Kans.

FOR SALE OR TRADE—Registered Percheron mares and fillies; twenty head of registered cows, 9 young calves and more to follow. Hooper Monroe, Route 5, Lyons, Kans.

LOST OR STRAYED—Brown mare, weight 1,100 pounds, white spot in forehead, barb wire cut on side, somewhat swaybacked. Suitable reward for return. J. W. Gillard, 538 Highland Ave., Topeka, Kans.

AGENTS WANTED.

Wanted—Gentleman or lady with good reference, to travel by rail or with a rig, for a firm of \$250,000 capital. Salary \$1,073 per year and expenses; salary paid weekly and expenses advanced. Address with stamp, Jos. A. Alexander, Topeka, Kans.

HELP WANTED.

FARM and ranch hands furnished free. Western Employment Agency, 704 Kansas Ave., Topeka, Kans.

SEEDS AND PLANTS.

ONE DOLLAR will buy enough of McCauley's white seed corn to plant seven acres if you send to A. J. Nicholson, Manhattan, Kans.

SWINE.

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Stray List

Week Ending June 14.

Pottawatomie County—C. A. Grutzmacher, Clerk. HORSE—Taken up by C. L. McKee in Grant tp., P. O. Havensville, April 23, 1906, one 3-year-old iron gray mare; valued at \$60.

SCOTCH COLLIE PUPS.

COLLIE PUPS—Richly bred from trained stock. Ready to ship. From \$5 to \$8. Abner Chasey, Route 5, North Topeka, Kans.

FEMALE COLLIES make the best workers. Spayed females the best town dogs. Four female Scotch Collie pups for immediate delivery, \$5 each. Fine registered stock; mother trained worker. Geo. W. Mauet, Lawrence, Kans.

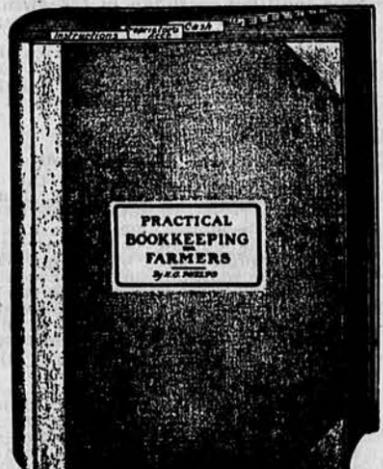
SCOTCH COLLIE PUPS—Eligible to registry. Parents registered and are workers. Pedigrees furnished with each puppy. M. S. Kohl, Benton, Kans.

FOR SALE—Scotch Collie pups from trained stock. Prices right. Will Killough, Ottawa, Kans.

SCOTCH COLLIE PUPS for sale from registered stock. G. B. Gresham, L. Box 102, Bucklin, Kans.

SCOTCH COLLIE PUPS FOR SALE, Registered stock. Chas. W. Gresham, Bucklin, Kans.

State Grain-Inspection Department Under the provision of an act to establish grades by the Grain Inspection Commission appointed by the Governor of Kansas, passed and approved by the session of the Legislature of 1903, the commission will meet at the office of the Governor of Kansas at the State Capitol on the 6th day of July, 1906 at 10 o'clock A. M. for the purpose of fixing and establishing the grades and character of grain in the state of Kansas for the year subsequent to the first day of August, 1906, and for doing or performing any other acts that may be incumbent on said Board of Grain Inspection Commission. All persons interested in the buying, selling or handling of grain in the State of Kansas are invited to be present and make suggestions or objections to matters pending then before said Grain Inspection Commission. G. W. GLICK, JOHN T. WHITE, J. M. JUREY, Grain Inspection Commission. June 14, 1906.



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