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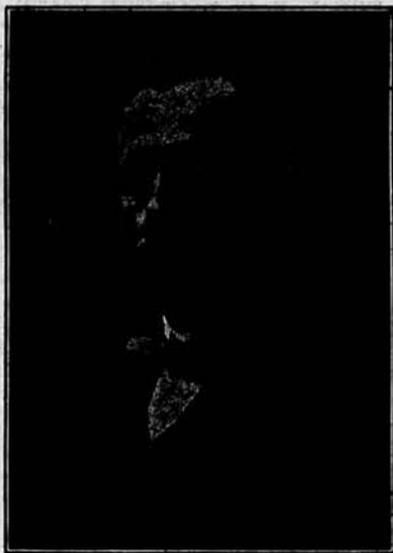
Santa Fe Good Roads Special

Realizing the difficulties that confront the farmer when he attempts to move his tremendous crops from the fertile fields of Kansas to the railroads for shipment to the markets and the consequent difficulty the railroads have in meeting his demands, the Santa Fe Railroad System inaugurated a good-roads train which held its first meeting and demonstration at Olathe, Kansas, on March 26. Under present conditions, when bad weather comes, it is impossible for farmers to move their crops to market and the railroads have cars lying idle that they would gladly have in use. The price of farm products increases and the farmer is compelled to sit idly by with a large yield of valuable products in his bins and feed-lots and feel his inability to realize on them. On the other hand, when the roads become good the farmers all load up their wagons and go to the shipping point at once. The market is glutted, prices go down, and the railroad is unable to furnish a sufficient number of cars. Chief among the things which will bring about a change in these conditions is the making of good country roads. With good roads the farmer can reach his market at any season of the year and realize on his crops when the prices are at their best. The railroads can furnish cars at all times and avoid that congestion of traffic which causes such great inconvenience and loss at certain seasons. For these reasons and others, the Santa Fe railroad officials have adopted the broad, progressive policy of assisting their patrons in every way possible because their interests are mutual. The prosperity of the patron means the prosperity of the railroad. Kansas has the distinction of having had railroads before it had either freight or passengers. The Santa Fe railroad was the pioneer of the West. It was conceived in Kansas brains and its first rails were laid by Kansas money. No influence has been so great in the development of the South and West as has the Santa Fe railroad. It is a Kansas institution although it reaches far beyond Kansas State lines. It has more miles of road in Kansas than in all the twelve other States and Territories through which it passes. The keen, far-sighted business men at the head of the Santa Fe System realize that conditions in Kansas are widely different now from what they were when their rails were first laid; when there were no fences and the country road might be miles wide if desired. They realize that it is impracticable and undesirable to tax the farmers to build macadam roads, and they further realize that a real solution of the good-roads question has been found in the use of the split-log drag so strongly championed by Mr. D. Ward King, of Maitland, Mo. In order that farmers may get their information at first hand, a special car was equipped with a simple split-log drag, made at small cost and in a short time, as its only illustrative apparatus. There was no other machinery and there was nothing to sell. It was a free gift to the people of Kansas.

THE LECTURERS.

The lecturers on the train were D. Ward King, of Missouri, of split-log drag fame; C. F. Miller, Ft. Scott,

Kans., President of the Kansas Good Roads Association; I. D. Graham, Topeka, secretary of the Kansas Good Roads Association; Prof. W. C. Hoad, of Lawrence, of the engineering de-



D. Ward King, Maitland, Mo.
The man who made the split-log drag famous.

partment of the Kansas State University, and Thos. H. MacDonald, Ames, Ia., engineer of the Iowa Highway Commission. Other members of the party were W. T. Treleaven, Chanute, Division Freight Agent, Santa Fe railroad; R. E. Wilson, Chicago, Traveling Industrial Agent, Santa Fe Railway; H. E. Hurshey, Galveston, Tex.; Traveling Freight Agent, Gulf, Colorado & Santa Fe Railway; L. M. Nellis, Topeka, of THE KANSAS FARMER; J. C. Burnett, Topeka, Division Freight Agent, Santa Fe Railway, and W. H. Robbins, Minneapolis, St. Paul, and Sault Ste Marie Railroad.

THE MEETINGS.

This party was met by a large and enthusiastic crowd at every stop on the route with the exception of one place where bad weather interfered. The meeting at Olathe was characterized by the large attendance of county and road officials some of whom drove twelve miles over almost impassible mud roads in order to be present.

At Wellsville, seventy-five men signified their intention of building and using split-log drags, and since the meeting was held there on March 27, the rural route carriers report that more than forty miles of road on their routes have been dragged and greatly improved.

At Ottawa, the business men of the city held a meeting in the First National Bank before the good-roads meeting was called to order and raised \$500 to be distributed in prizes among the farmers who would maintain the best roads by use of the split-log drag. These prizes will be announced in the premium list of the Franklin County Fair Association and the prizes will be awarded during the fair as one of its features. Other stops were made at Iola, Chanute, Erie, Coffeyville, Inde-

pendence, Lawrence, Emporia, and Topeka.

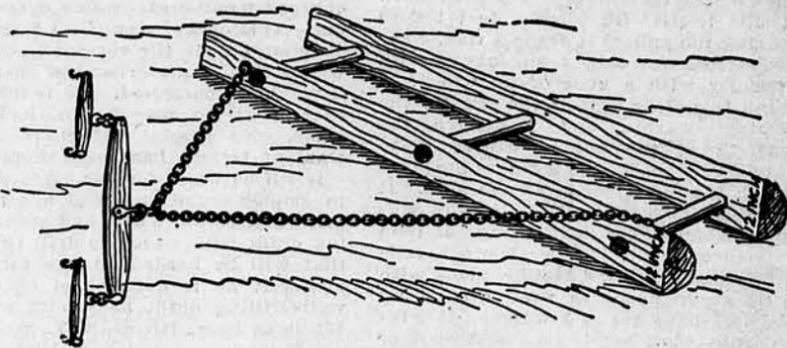
Public interest in the good roads movement has reached a height never before attained in Kansas, and it has now been demonstrated that good roads are possible without money. Instead of asking the Legislature for the appropriation of a large fund with which to aid the counties in their operations of building expensive roads, it is now proposed to ask that the Legislature appoint the State Agricultural College and the Engineering Department of the State University as a highway commission, whose duty it shall be to superintend the construction of roads, to give expert advice on methods and materials, and to conduct experiments along the lines necessary to the development of the public highways. This will require no increase in taxation, the creation of no new offices, and will allow each county to tax itself for good roads or not as the voters may decide.

It is impossible to foretell the vast amount of good that will be accomplished by this businesslike act on the part of the Santa Fe Railroad. One of the results that are immediate is shown by the renewed esteem in which the road is held by Kansas people.

Mr. King's ideas are embodied in the following description of how to make and use the split-log drag.

HOW TO MAKE THE DRAG.

In order to make the split-log drag in accordance with ideas gained by long experience, the following points should be noted. Select a log of some light wood, such as box-elder, elm, or the butt end of a telephone pole, but be sure to have it light and 12 inches thick. Cut it seven feet long if you have an ordinary team of horses, or nine feet long for an extra heavy team.



The Split-Log Drag.

Select a log with straight grain if convenient, or one with a right-hand twist to the grain. The latter is preferred by many of experience. Split the log in equal halves, and bore three two-inch holes through each half in such a manner that the rear half, when set on edge, will stand sixteen inches to the left of the front half. Secure some pieces of timber of proper dimensions, hew them down so they will fit the augur holes, drive them in securely, and wedge the ends. Both halves of the log must be set on edge with the flat sides in front, after they are fastened together 30 inches apart with the cross-pieces. The cut shown herewith is made from an earlier type of the split-log drag and does not show the logs arranged as just described. It

will be found that if the logs are set as shown in the cut the right-hand end of the rear log will make trouble in the ditch and will have to be sawed off, as the drag is always set to run at an angle of forty-five degrees. The arrangement of the log as described above has the advantage of making the drag somewhat longer than it would be if it were built in the form of a parallelogram. With a piece of old wagon-tire or, better still, a three-inch piece of sheet steel that measures four feet in length, the front and right hand face of the front log should be shod. This is the cutting surface of the drag, and will be found long enough for any ordinary team to pull.

When all this work has been done get a log chain of sufficient length and insert one end of it through another augur hole bored near the right-hand end of the front log and fasten with a pin through the link. The other end should go around the connecting timber at the left-hand end of the front log and over its top as shown in the cut. With a few loose boards sawed to proper length and cleated together, a platform is made on which the operator stands. The drag is now complete and does not have a nail or bolt in it except to hold the shoe on. A very satisfactory addition to the drag as described is made by taking a large iron ring made of 1/2-inch iron and have a blacksmith heat and draw one side of it into an extension which will fit over the links of the chain so as to hold position without slipping. The two halves of the log which make the drag should be thirty inches apart when the drag is complete, and if this looks too wide, it will be better to set it two inches wider. Many drags are rendered failures because the logs are set so

close together that they do not clear themselves of mud.

DRAG MADE OF SAWED STUFF.

If a suitable log is not readily available, the drag may be made of sawed planks which must be not less than 2 x 10 inches. A two-inch plank ten inches wide and twelve feet long may be sawed diagonally at the middle or cut "on the bias," as the ladies say, so as to obtain the required seven feet in length and reduce expense for lumber. When such timber is used it is found best to reinforce it by nailing a 1 x 6 on the rear side of each plank as it will stand when the drag is complete. The planks may then be fastened together in the same manner as (Continued on page 410.)

Editorial

THE HUSBAND'S INHERITANCE.

EDITOR KANSAS FARMER:—Please tell me if I have not misunderstood a statement in your paper of March 29 entitled "The Husband's Inheritance." You say "upon the death of the widow his estate descended to his own children." You do not mean to all his children do you? I had always understood that in such a case when the widow died, her property went only to her children.

SUBSCRIBER.

The case (52 Kansas Reports, page 392) mentioned in our answer under the title "The Husband's Inheritance" was one in which the man had offspring by each of his three wives and died three weeks prior to the death of his third wife. The opinion was written by Chief Justice Horton. The following is the syllabus of the opinion as published in the Fifty-second Kansas: "Deceased in his lifetime was married three times. By his first wife he had one child, by his second wife he had one child, by his third wife, surviving him, he had five children. He died intestate in this State. At his death, one-half in value of his real estate, not necessary for the payment of his debts, descended in fee simple to his widow; the other half of his real estate descended to his seven children equally, being all of his children by his three wives. Held, also, that upon the death of the widow her estate descended to her own children."

A slight error occurred in printing an abridged statement of this syllabus in THE KANSAS FARMER of March 29. This full quotation makes the case plain and is explicit, bearing in mind that the husband inherits from the wife exactly as the wife inherits from the husband.

WARBLES IN COWLEY COUNTY.

EDITOR KANSAS FARMER:—I have read with much interest the views of Mr. Jackson and the theory produced by Chief Mayo concerning the warbles. I have watched the warble in cattle's backs all my life and thought everybody knew what made them, but perhaps I do not know. I think Mr. Jackson's view is nearer right than the theory produced by Mr. Mayo. In this locality we have what we call the big cow-flies. They are fully an inch long or even longer and of a dark gray color. Then we have another species that is black and just a trifle larger, but of identical habits. The black flies are not nearly as numerous as the gray flies. These flies make their appearance about the middle of July, become more numerous in August, and begin to disappear the latter part of September. They scarcely ever bother cattle in the middle of the day. They are worse from five o'clock in the evening until dark than at any other time, and are much worse where there is timber than anywhere else. Cattle hate them and run when these flies alight on them. When one of these flies becomes once located on a cow, it tries to bury itself in the hair as much as possible. It then bores its bill into the skin until it fills itself with blood. Just before leaving the animal it drops a tiny, clear drop from its tail, then leaves with difficulty with a buzz of its wings. I think this clear drop is the egg for the coming warble, and I believe the warmth of the animal causes it to hatch very soon, and it enters the place which the old fly made in the skin. It remains there under the skin until matured which is the next spring. It then cuts through the hide, crawls out, falls to the ground a thick, stubby grub with little sharp horns in rows around its body. I have sat and watched it wiggle and twist, but if in a soft spot of ground it soon buries itself in the ground to finish its career as a warble or grub. It returns in July or August a full-fledged, winged insect fully determined to try to keep up its family. I am satisfied with this theory as it is the result of very close observation. The warble looks like a bot that is found in a horse's stomach, but the warble is much larger when ready to go into the ground. According to Mr. Mayo's theory, the warble could be found all through the tissues of the body.

SUBSCRIBER.

One of the best authorities on entomology is Professor Vernon S. Kellogg of Leland Stanford University, California. He is the author of a book of 674 pages in which insects are described and their life histories traced according to the latest information developed at the time of the publication of this book

in 1905. On page 338 Professor Kellogg says:

"The bot-flies, warble-flies, or heel-flies of cattle, whose larvae are found in small tumors under the skin, also [Professor Kellogg has just described the bot-flies of horses] have their eggs swallowed, and the young larvae may be found in the mouth and esophagus. But from here they burrow out into the body-tissues of the host, finally coming to rest underneath the skin along the back. When the larvae or grub is full-grown, it gnaws through the skin, drops to the ground, pupates, and, in from three to six weeks, changes to the adult fly."

Speaking of these flies, including bot-flies of horses and of other animals, Professor Kellogg says: "The flies are heavy-bodied, often densely hairy, banded insects, looking rather like small bumble-bees whose mouth-parts are so atrophied that they can probably take no food at all. They lay their eggs on the hairs or skin of their special host animal, and the larvae on hatching bore directly through the skin and into the tissues of the host, or, as in the case of the familiar bot-fly of the horse and the heel-fly or warble of cattle, the eggs are taken into the mouth of the host by licking, swallowed, and thus introduced directly into the stomach, to whose walls the larvae either attach themselves or through which they burrow into the true body-cavity of the host."

These descriptions by the best authorities in the world are the results of the most careful observations. They are not derived from theories but from investigations. The editor suggests that stock-owners interested trace the transformations with more care and continuity.

In combating any kind of pest, it is important to know accurately its life history. Taking the controversy about warbles as an example, the cattle-owner who fights the large flies described by our correspondent, for the purpose of reducing the number of warbles is probably wasting his effort. If, however, he can prevent the heel-flies from depositing their eggs, or destroy the vitality of the eggs before the cattle lick them off, he will be working directly against the pest.

FREIGHT CHARGES—WELL DRILL.

EDITOR KANSAS FARMER:—I am a reader of THE KANSAS FARMER and would like to ask a few questions.

I moved from Girard, Crawford County, Kansas, to Plains, Meade County, Kansas. I chartered a car from the Frisco people. I left Girard on February 14, and reached Plains on February 17. My freight weighed 24,500 pounds. I was charged \$98 for the trip. It seems to me that it was a very large price. Can you give me information in regard to the matter? I understand that the freight rates on the Frisco were cut about the middle of last month.

Can you give me any information about how and where to get a well-drill? I want to drill a well. How much will it cost to get a cheap drill? I will have to drill about one hundred and twenty feet. R. J. BURDICK, Meade County.

The writer called upon the division freight agent of the Rock Island railroad with reference to the freight charges mentioned by this correspondent. This official went into a very full examination of the rates assuring the writer that if any error had been made it would be corrected. He found, however, that no overcharge had been made. No special reduction on this class of freight has been offered.

It will be wiser for our correspondent to employ some one who has a well-drill than to buy a drill and accompanying outfit with which to drill the wells that will be needed on one farm. If, however, he is determined to have a well-drilling outfit he should write to Williams Bros., Ithaca, N. Y., whose advertisement is running in THE KANSAS FARMER.

THE STOCK EXCHANGE DECISION.

A decision of the Kansas Supreme Court affecting trusts was handed down last Saturday. The case is one affecting the Kansas City Stock Exchange which originally is held to be a trust under the laws of Kansas, and as such is rendered incapable of doing business in this State.

The decision of the court was rendered in the case of the State against Charles L. Wilson. Wilson was arrested for selling mortgaged cattle. He was tried, convicted, and sentenced to five years in the penitentiary. He appealed the case to the Supreme Court, and made a showing that he had attempted to prove in the lower court that the exchange was a trust. The lower court refused to admit the evidence, and the

Supreme Court reverses the decision and orders that the case be retried. In effect, the Supreme Court declares that the showing that the exchange is a trust is a good defense for the defendant. Justice Mason wrote the opinion, and on the subject of the character of the exchange he wrote:

"An association of persons and corporations engaged in the business of buying and selling live stock and practically controlling that business at the place of operation, which has a by-law forbidding its members to buy or sell live stock for others without charging a commission therefor of at least 50 cents a head is a combination to carry out restrictions in full and free pursuit of a lawful business, and in virtue of that fact is a trust within the terms of chapter 265 of the laws of 1897.

"The charging of a commission for services in the purchase of live stock for another, by a member of such a trust in pursuance of the by-law referred to, is an act made a misdemeanor by that statute, and a contract to pay a commission exacted under such circumstances is void because made in violation of law.

"A note and mortgage given for a consideration, a part of which is unlawful because based upon a transaction made criminal by the statute, are wholly void.

"In a prosecution under an information charging the obtaining of money by false pretenses through selling, as clear, cattle that were in fact mortgaged, it is competent for the defendant to show in defense that the mortgage relied upon by the State, although fair on its face, was void by reason of being based in part upon a consideration made illegal by the anti-trust statute."

THE Y. M. C. A. AT THE STATE AGRICULTURAL COLLEGE.

THE KANSAS FARMER of last week gave an illustrated description of the proposed Y. M. C. A. building at the Agricultural College. This was accompanied by an account of the efforts by which a large portion of the money needed for the erection of the building has been raised, and continued with an appeal to farmers and others to contribute the amount still needed to complete and furnish the building. Of this latter amount it is now announced that \$300 has been subscribed. THE KANSAS FARMER is willing to receive and acknowledge subscriptions and will print the names of subscribers to this worthy enterprise. The money need not accompany the subscription, but it is well to designate a date or dates on which it will be paid.

Professor A. M. TenEyck, whose writings have made him well known to every reader of THE KANSAS FARMER, is chairman of the board of control.



A. M. TenEyck, Professor of Agriculture, Kansas State Agricultural College, Manhattan, Kansas.

His level-headed influence is ample assurance of judicious use of all funds. Following is a letter which Professor TenEyck addresses to his thousands of friends among the farmers of the West.

My Farmer Friend: Perhaps you are not acquainted with the efforts which we have been making at the Kansas Agricultural College for the past two years with reference to raising a certain sum for the construction of a Y. M. C. A. building for the Agricultural College students. You know something of the work of the Young Men's Christian Association in the cities and colleges of the land. It is a splendid organization and is accomplishing a grand work in developing Christian citizenship and in raising the standard of manhood in our colleges and cities. It is a necessary organization in every university and college.

We have a strong Y. M. C. A. organization at the Agricultural College, but the students have been hampered by not having proper accommodations in the way of buildings and equipment for carrying on the work of the organization. The movement for raising a certain sum for the construction of a suit-

able building to be the home and headquarters of the Y. M. C. A. of this college was begun about two years ago. It seems that we have raised as much by local subscription as it is possible to raise, and we will require at least \$10,000 more to be subscribed before we may begin the construction of the building. We believe that the amount still required ought to be contributed by the people of the State, and a large part by the farmers of Kansas.

It is proposed that the KANSAS FARMER, the Mail and Breeze, and the Farmers' Advocate raise \$10,000 by opening subscription lists. The purpose of this letter is to call your attention to these lists now running in these papers.

The Agricultural College is supported entirely by the State and the United States; no individual donates anything for its support. The State, however, contributes nothing toward carrying on religious work or toward the construction of buildings for that purpose. Here is an opportunity for the farmers of Kansas to show their appreciation of the splendid work which the Agricultural College and Experiment Station is doing.

The writer is chairman of the Y. M. C. A. board of control and is personally interested in seeing this building proposition succeed. Such a movement ought to receive the hearty support of the farmers of Kansas, and the friends who assist in this movement will receive the appreciation of the Agricultural College board, faculty, and students as well as the commendation of all friends of the Agricultural College and the Y. M. C. A. throughout the State.

Yours very truly,

A. M. TENEYCK.

Following is a summary of subscriptions thus far received:
695 Previously acknowledged...\$22,332
3 Subscriptions, \$100 each.... 300

698 Subscriptions\$22,632
The amounts subscribed have ranged from \$1 to \$1000. None need hesitate because the amount he gives is small. Send to THE KANSAS FARMER, the Mail and Breeze, or the Farmers Advocate, Topeka, or to General Secretary W. W. McLean, Manhattan.

The convention of Southwestern interests to be held at St. Louis will convene in the Mercantile Club, corner of Locust and Seventh streets, at 10 o'clock Monday morning, April 10. Delegates, upon arriving at St. Louis, are requested to call at the office of the Business Men's League, in the Commercial Club, to register and receive badges. The banquet will be in the Jefferson Hotel, corner of Locust and Twelfth streets, at 8 o'clock Tuesday evening, April 17. A reception committee will receive and seat the guests as they arrive at the hotel. The dress will be informal.

The Farmer's Cooperative Shipping Association held its annual stockholders' meeting last week at Topeka. The former officers were reelected. It is stated that last year's business paid less than expenses; that it costs the association about a cent a bushel more than it costs the individual shipper to market grain; and that there was considerable dissatisfaction among the stockholders. The business of the association was transacted behind closed doors so that unfavorable reports may have been circulated without sufficient foundation by members of a minority faction.

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Agriculture

Successful Farm Management.

W. J. SPILLMAN, UNITED STATES DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C., BEFORE THE KANSAS CORN BREEDERS' ASSOCIATION, JAN. 23, 1906.

The average yield of wheat in the United States is only about thirteen bushels to the acre, while the average yield of corn is about twenty-three bushels. When we stop to think that half of the farmers who grow these crops produce less than average crops, it is easy to see that the average farm does not pay. Frequently we find two farmers side by side, one of whom barely makes a poor living, while the other makes good money. We say that one is a poor manager and the other a good manager. Some men are born good managers. There is a large number of farmers, however, who can become good managers, and doubtless a number who never will under any circumstances, but it is certainly worth while for us to consider a few of the fundamental principles underlying good management on the farm.

CROP ROTATION.

In the first place, a well-planned rotation of crops is essential. The average farmer gives little or no attention to crop rotation, and has to replan his work every year. He frequently grows the same crop year after year until the land is worn out, badly infested by weeds, and the soil becomes filled with insect pests and fungus diseases that prey on the crop grown. One year he may have twenty acres of corn and another year sixty acres. He thus frequently finds himself short of help at some seasons of the year and with nothing to do at other times. The work of a farm should be so planned that the farmer and the laboring members of his family, as well as the hired men if there are any, can find something profitable to do every day in the year. Work that can be done inside in wet weather should be saved up for rainy spells, and the farmer should plan so closely that he will never be caught napping and thus required to do a lot of work that could be just as well done at times when the main work of the farm is not pressing. A well-ordered rotation of crops utilizes the full possibilities of the soil; that is, it keeps the fields busy growing something all the time. It distributes the work throughout the year, thus enabling the farmer to hire labor by the year, a much more satisfactory plan than hiring several men for short periods. The changing of the crop on the field will also cause yields to be larger, and there will be less trouble from weeds and insects. Wherever the same crop is grown continuously on the land, a lot of weeds that are adapted to growing with that crop will creep in and make the land foul with their seeds.

USE OF FERTILIZERS.

While the well-planned rotation is essential to good management, it is just as essential that a considerable portion of what is raised on the farm be fed to live stock and the manure returned to the land. Unless this is done the land will eventually wear out. It may be stimulated for a while with commercial fertilizers, but even the use of fertilizers without manure, or other means of stocking the soil with humus, will hasten the exhaustion of the soil. There is room for the development of all kinds of livestock farming in Kansas. It is possible to keep up the stock of humus in the soil by plowing under occasional green crops, but we do not know as much as we should like to know about the value of this practice.

PRODUCTS FOR FAMILY USE.

Another essential element in successful farming is the production on the farm of as much of the food required by the family as is possible. In nearly all parts of our State a large variety of garden vegetables can be grown with very little labor and every family on a farm should maintain a kitchen garden that will grow all of the vegetables, potatoes, and the like, the family can consume. If there is a little surplus it can frequently be sold in local markets to advantage, or it can be consumed by the poultry, pigs, and cows. Every farm should have at least enough fruit to supply the family with an abundance of this healthful food at all seasons of the year. Every farm should also keep poultry enough not only to supply what the family can consume, but to pay at least the grocery bill. A well-kept garden, a

small kitchen orchard, and a small flock of poultry will greatly enhance the standard of living on the farm and enable the farmer's family to enjoy the good things of life in a way that is impossible to those who live in cities.

PROPER PREPARATION FOR MARKETING.

Another important item in making the farm profitable is the proper preparation for market of what the farmer is to sell. Some time ago I was talking with a commission man in St. Louis, and he told me of an instance where a certain firm in Southern Missouri sent a lot of peaches to market at a time when there were twice as many peaches on the market as there was any demand for, and prices were entirely demoralized. Nevertheless, this particular consignment of fruit sold for good prices, simply because it was the most attractive fruit on the market. The attractiveness of an article properly prepared for market is more than half the battle in selling it. No matter what the farmer has to sell, if it is the best on the market it will always sell above market prices.

MANAGEMENT OF SOIL.

Another very essential thing in making a farm pay is the management of the soil. A large proportion of farmers plow three or four inches deep. This is a great mistake. Nothing wears out the land sooner than to have only the surface three or four inches pulverized by the plow. A good many farmers have been misled by their own experience with deep plowing. It is a well established fact that when land is plowed several inches deeper than it was ever plowed before—this is particularly true of land that has been in cultivation for a good many years—it will not yield much the first year, and this has led a good many farmers to think that deep plowing was not beneficial. Ordinarily speaking, the best plan is to plow a little deeper every year until a depth of nine or ten inches is reached. After that fall plowing should always be deep and spring plowing should be from six to seven inches deep. It is important, too, particularly if the soil is of rather a heavy type, not to plow when it is either too wet or too dry. If a heavy soil be plowed dry, the farmer has simply a mass of clods to deal with during the remainder of the season. If it be plowed too wet, a good deal of it is puddled, and a few dry, hot days will almost convert it into brick-bats. Plowing should be done, if possible, when the land is in condition to break up mellow. In spring plowing the harrow should follow the plow immediately in order to get a good pulverization of the surface. This is not so important in fall plowing, because the freezing and thawing of the winter will melt down the clods. Not only is it important to plow properly, but the surface should be put in good condition for receiving the seed. This work is usually done with the harrow. If the plowed land has lain for several months before the seeding is done, the disk-harrow is a very useful implement in pulverizing it, but on freshly-plowed land that was in proper condition to plow, a disk-harrow is unnecessary.

Farmers who have been plowing shallow for many years find a stratum of hard pan just below the plowed stratum. A good many attempt to break up this hard pan by subsolling, but it is doubtful if subsolling ever pays. The object of plowing is to mellow up the soil and incorporate humus into it. Subsolling simply opens up air spaces deep in the soil, and it does very little, if any good. The proper thing is to plow deep.

MISTAKES IN FARMING.

One of the worst mistakes a farmer makes is in working too many hours a day. In my boyhood there was a neighboring farmer who in plow time would work from four o'clock in the morning till nine o'clock at night. He was a poor man and thought he had to do this or starve. Of course, he never had time to read the papers, and he knew nothing of the improvements that were going on in the methods of farming. He plowed two or three inches deep and raised six or seven bushels of wheat to the acre. Most of his horses died of starvation and overwork, and in two years he had squandered a patrimony inherited from his father and left the country in a covered wagon with two cow-baits which were only called horses by courtesy. On the other hand, I know a farmer who has dug a farm out in the State of Washington, in a section where it would cost at least \$200 an acre to clear the land if the work had to be hired. With the exception of one hired man for six months when he first began clearing, this man and his three sons have cleared up seventy acres of land, forty

for the plow, and the remainder is in condition to furnish good pasture. Last year this farmer sold \$2330 worth of butter, a little over \$2000 worth of eggs and poultry, and about \$400 worth of pork; in all, a little over \$4700, with no labor bill to pay. This farm has always been run on a ten-hour plan. They go to work at 7 o'clock in the morning, and when they come in to supper at 6 o'clock the day's work is ended, and this has always been the case. The owner of this farm takes several farm papers and studies them carefully; his boys study them too. Not only that, but his wife and daughters, who look after the chickens, are recognized as authorities on the subject of poultry, and the farmer himself now commands a good price for all he will write for the agricultural papers. His success has largely been due to the fact that he has taken time to study the literature of his business. Unless a farmer is also a born trader and gets ahead by cheating his neighbors who do not know the value of the things they have to trade or sell, he must be a student in order to make a big success on the farm.

On the other hand, a good many farmers do not work enough. There are certain very toothsome fish that have to be caught; or there are squirrels and turkeys going to waste that must be looked after just at the time of year when the spring work is pressing. Even when they do work they frequently do not work to good advantage. The work of the farm should be planned far enough ahead so that every day's work may be made to count the most possible. This is where a systematic rotation of crops comes handy. It enables one to plan the work ahead.

Another mistake which farmers make is to allow weeds to grow in their crops. I once had a neighbor who insisted that he saved a great deal of work by letting all the weeds in his corn-field sprout and then killing them at one plowing. He did save work at both ends of the line, because his system required less plowing and also saved a great deal of work in gathering his corn in the fall. In those sections of the country where the rainfall is plentiful it has been pretty well proven that the main object of tillage is to kill weeds. Every weed that is allowed to get six inches high in a corn-field reduces the size of the ear of corn on the nearest corn-stalk. The best plan is to kill every weed while it is sprouting. This can be done simply by stirring the soil at the proper time. After the roots of a weed get three or four inches deep into the ground, it can no longer be killed in this manner. The best plan is never to let the weeds get a start.

One of the mistakes that has been made in every good section of the United States when it was first settled has been the growing of grain-crops continuously on the land. This has led to the spread of certain weeds and insects, and has worn out the soil. In my boyhood it was a common thing for farmers in Southwest Missouri to sow wheat year after year on the same field. To make matters worse, instead of plowing up the stubble soon after harvest and thus putting it in good condition for the next wheat crop, they would wait until foxtail and rag-weed had made a growth two or three feet high on the land and left enough seed for four or five wheat crops in the future. This is one of the cases where promptness saves future work.

Another mistake which is common throughout the Middle West, where timothy and clover are grown for hay and pasture, is to leave the meadow down too long. Clover usually disappears in one or two years, and the yield of timothy becomes very much reduced. Not only that, but all kinds of weeds make their appearance, and frequently half of the weight of the hay consists of weeds. It seldom pays to keep a meadow of this kind down more than two years, and on our farm in the edge of Newton County, Mo., my brother and I leave the meadow down only one year. This gives us good hay and large yields.

Perhaps the most common fault with farmers is that they do not study their business closely enough. A few years ago there was perhaps some excuse for not reading a great deal of agricultural literature because so much of it was theoretical and impractical. There is still, of course, a good deal of agricultural literature that is not worth the farmer's while to read. On the other hand, there are certain farm papers and books which a farmer can not afford not to read. The man who makes a great success at anything is always a thorough student. In addition to reading at least two or three good farm

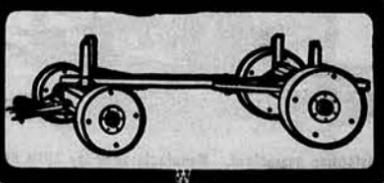


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papers regularly, every farmer ought to get the bulletins from his State Experiment Station and some of the bulletins from the United States Department of Agriculture. He should also attend the farmers' institutes and take an active part in them. By these means he can keep himself informed concerning progress that is being made in the great industry he represents, and will be in position to improve his methods as fast as new facts are developed.

Corn-Stalks as Fertilizer—Night Soil.
There are about 40 shocks of corn-fodder on this farm, about one-half has been fed out. What is the most convenient way of decomposing the stalks so they can soon be returned to the soil as fertilizer?
What are the proper things to mix with night-soil for use in the garden? Wood-ashes and forest-tree leaves are about the only things I could get. What proportion of these three mixed together would give the best results, and what length of time should be allowed for composting?

FRANK S. GRISWOLD.
Johnson County.
The corn-stalks might be spread at once on a pasture land, or if you do not have such land available, spread thinly on wheat or small grain which has just been sown. Used in this way, the stalks will not be in the way and will give some little benefit to the land, both in the way of a mulch and as they gradually decay some humus and nitrogen will be returned to the soil. The fertilizing value of corn-stalks is not great and it would not seem to me advisable to decompose the stalks previous to using them as fertilizer. Of course, the stalks could be thrown into a pile and allowed to absorb the rains during the summer and thus gradually decay. However, corn-stalk manure is always disagreeable to handle and you will probably be able to handle the stalks from the shock easier and at less expense than you will ever be able to handle them again.

Wood-ashes are not very desirable to mix with night-soil; air-slacked lime is better. The wood-ashes decompose to some extent the nitrates of the fertilizer. The forest-tree leaves are all right. By adding a little road dust or dry dirt, leaves and night-soil will make as good a combination for hauling for garden fertilizer as anything you can use. You will best be able to judge what proportions to use to secure the best mixture. Usually it would not appear to me desirable to go to any great trouble in composting this night-soil since you really have only a small quantity of the fertilizer.

If it could be hauled out into the field and spread thinly and plowed under, perhaps this would answer your purpose and be a desirable way to handle the fertilizer. Any other fine, well-rotted manure would be as good for the garden.
A. M. TENEYCK.

The Hessian Fly.
The following and other enthusiastic statements concerning a parasitic enemy of the Hessian Fly possess so much importance, if true, that THE KANSAS FARMER asked Professor Tucker for a discussion of the subject. His excellent reply follows the clipping:

"The passing of the Hessian fly has for years been the dream and cherished hope of the wheat-grower. As the wheat crops increased and the demand and prices became more of an incentive to increased acreage and yield, the threatened destruction of crops by this insect pest became more pronounced and alarming over the winter-wheat areas. The fighting of the Hessian fly by all scientific and mechanical methods and contrivances that scientists could invent did not offer much encouragement of perfect immunity from the pest, while it added labor and embarrassment to the best interests of the successful cultivation of the crop.

"The Department of Agriculture at Washington, D. C., has discovered through its agency an insect enemy of the Hessian fly which promises its hasty and permanent destruction. The tiny insect upon which the Government entomologists are depending to check and possibly destroy completely the Hessian fly is the *Polygnotus hiemalis*, and it is indigenous to Montana, North Dakota, and Idaho, where it was discovered during the summer of 1905 by G. L. Reeves, of the bureau of entomology of the Department of Agriculture, while on field work connected with investigation of the Hessian fly.

"The *Polygnotus hiemalis*, while boasting of a formidable polysyllabic name, is of almost microscopic proportions. To the unaided eye it appears hardly larger than a pin point, and a Hessian fly attacked by hundreds of the parasites looks as if it had been

sprinkled with pepper. When the parasite is brought under the lens of a powerful microscope, it is discovered to have a pair of powerful mandibles and six strong gripping legs by means of which it is able to satisfy its lust for Hessian steaks and delicacies offered by its doomed host. So voracious is its appetite and so effective is its warfare upon the Hessian fly that the great wheat-pest has been practically exterminated in the districts it has invaded where the newly-discovered parasite is indigenous.

"This new field for importation and distribution of the newly-discovered insect will offer the experiment stations throughout the winter-wheat States employment in the propagation of the *Polygnotus hiemalis*. It is to be hoped that they are not too sensitive to changes of location, and will have to undergo a gradual process of acclimation before they will be ready to enjoy feeding on the Hessian fly, as it may be found in the various localities where it does its work."

An Important Enemy of the Hessian Fly and Other Parasites.
BY ELBERT S. TUCKER, MUSEUM ASSISTANT IN SYSTEMATIC ENTOMOLOGY, UNIVERSITY OF KANSAS, LAWRENCE.

Oftimes exaggerated and otherwise faulty accounts are printed in newspapers and other journals regarding investigations that promise to be of practical value if applied to farming practice. Perhaps these articles are written with the best of intentions towards spreading the news, but the writers jump at unwarranted conclusions and probably err from a lack of sufficient knowledge of the subject or incomplete understanding of facts. Such appears to be the case recently noticed concerning reports of an important enemy of the Hessian fly. As efforts have been made by the entomologists of the U. S. Department of Agriculture to prove how effective this enemy can act, their opinion was sought in order to determine what statements can be relied upon. The reply received which answered a number of questions is here quoted:

"Bureau of Entomology, Washington, D. C., March 23, 1906.
"The parasite of Hessian fly to which you probably refer is *Polygnotus hiemalis* Forbes. Please absolve me from any claims or statements made in newspapers. This is a very common parasite, but if it ever made any promises to exterminate the Hessian fly we have never received them, certainly not in Montana, where no wheat is grown, and I do not believe in the Dakotas. Furthermore, Mr. Reeves wishes to be absolved from all responsibility of its discovery. As you probably know, this was described by Professor Forbes a number of years ago.

"It is an exceedingly valuable parasite, and I have observed it overcoming an invasion in the fields; that is to say, fall wheat that had been killed by Hessian fly was collected from widely different localities and placed in breeding in an insectary. In some cases the number of these parasites reared outnumbered the Hessian fly reared, two or three hundred to one. Part of these could, of course, be accounted for from the fact that quite a number of parasites may be developed within a single flaxseed, but it occurs too often to be a mere theory that where Hessian flies are excessively abundant in the fall sometimes very few emerge in the spring, while swarms of these little fellows come forth in their stead.

"I am not certain of its occurrence in Kansas, but think it quite likely that it occurs there. This is the one that was sent from North Dakota to Kentucky, Tennessee, and also to California.

"So far as my own studies have gone, this is the most valuable of the several parasites of the Hessian fly.

"I presume that you can secure a figure of it by addressing the Bureau, although you may perhaps have to wait until a circular in which it is being used has passed through the press.

"Yours very truly,
"F. M. WEBSTER,
"In charge Cereal and Forage Plant Insect Investigation."

The official account of the Government experiment in disseminating these parasites appeared in Dr. L. O. Howard's report for 1905, and reads as follows:

"Introduction of parasites.—By keeping the whole wheat-growing area under observation, carefully noting the increase and abundance of grass and grain insects in one section and the decrease on account of excessive parasitism in another, it may be possible to transfer large numbers of beneficial

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The Apex Mfg. Co., Bloomington, Ill.

insects from the locality where they have nearly or quite finished their task of suppression to another region where an outbreak is in the developmental stage. During the season two large consignments of Hessian-fly-infested wheat-stubble, determined by breeding during the winter months to be strongly parasitized, were transported from North Dakota to Western Kentucky and Tennessee, where a serious outbreak of Hessian fly was then in progress. The results have not yet been determined, but the line of experimentation is a worthy one."

We hope to hear of the successful outcome of these experiments from the bureau itself before long. The discovery of this species of parasite dates back many years, although reputed in the clipping at hand to be only last season. In Bulletin 45, U. S. National Museum, its history is thus traced by Dr. W. H. Ashmead:

"This species seems to have been first reared by Dr. Riley from specimens of the Hessian fly (*Cecidomyia destructor* Say), August 16, 1876, received from Blair, Nebr. It has, however, since been bred from the same fly by various persons in the Western States. Professor Forbes reared it in 1888 at Champaign, Ill.; Professor Cook, of Agricultural College, Mich., in 1890; and Professor Webster at Laporte, Ind., in 1889."

Its occurrence in Ohio was noted by Professors F. M. Webster and W. Newell in their report on insects of the year 1901, (published in Entomology Bulletin 31, U. S. Department of Agriculture), in the following manner:

"Wheat plants that had been killed last autumn by the larvae of the fly were collected in quantity from many sections of the State and placed in the insectary in order to learn the probable condition of the fly in the fields in the spring of 1901. Only in two instances did we secure Hessian fly in great numbers. . . . In some instances we reared myriads of the little parasite *Polygnotus hiemalis* Forbes, and the number of these left no doubt of their efficiency in checking the increase of the fly; but in some other cases we reared only very few parasites, and even less flies or none at all, so that it seems possible that there was also another unknown influence which tended to reduce the number of adult flies that emerged this spring."

In classification, this insect belongs to a family of the parasitic wasps called Proctotrypidae, which, according to Professor Comstock, includes the smallest of all known insects. Many of them are small enough to live even within the eggs of other insects. In size, the enemy of the Hessian fly is, of course, much smaller than its host which is a tiny insect itself; the measurements of the adult parasite are given as .80 to 1.40 millimeters in length.

Our most beneficial insects are the hymenopterous or wasp-like parasites of which this enemy of the Hessian fly is an example. Numerous kinds abound everywhere and they not only prey on other insects, but also on each other. Caterpillars are especially susceptible to their attacks. However, they do not pounce upon and kill their prey at once by biting according to the idea conveyed by the newspaper articles—that is the method of attack by predaceous insects. Parasitism is a slower process of onslaught and is exemplified by any form which subsists largely by attachment on or directly within the body of another, during a part or whole of its life. With the hymenopterous parasites, the female selects her victim usually when she is in the larval or worm stage, though often in the cocoon or pupa, and by means of her piercer thrusts one or more of her eggs into the skin of the host. These eggs hatch out into grubs which burrow into the live body and feed on the blood of the host until their growth is attained. By this time the victim generally dies, but the parasites transform into adult flies either within or outside the body of the host. Their jaws are then used to gnaw their way out of the victim's body or to free themselves from their own cocoons, when formed externally. No matter how small some species may be, they are just as complete in structure as large insects. Except for a few wingless forms, they have four wings. The females apparently loose no time in hunting for victims on which to deposit their eggs, thus quickly producing another brood. Night-time is probably the period of greatest activity with the adults, for at such times I have captured great numbers of them either by sweeping herbage with a net or in collecting at lights. Then again, some species were reared in breeding experiments such as raising a colony of caterpillars in a cage, when parasites are liable to develop from them.

Not all the attention that they deserve has been given to these parasites, but recently a great number of specimens of these insects belonging to the collection of the University of Kansas were studied by a specialist with remarkable results in finding many kinds that are new to science. The notes and descriptions concerning part of them were published a year ago in the Transactions of the Kansas Academy of Science, (vol. 19), which report shows that our Western country is rich in new species. As fast as my own captures are reported, from material collected in Kansas and Colorado, more than two new species were found to one old species, or by actual count, 39 to 18. In one family called Ichneumonidae, 15 new species are credited to me as the collector; one is named after me and another after Manitou, Colorado, where it was found. In another family called Braconidae, 24 new species are described from specimens of my collecting, among which another namesake appears, besides one named after the State of Kansas and another after Wichita, Kansas where it was taken.

These Indian names with Latin terminals form curious combinations, as *Kansensis*, *Wichitensis*, and *Manitouensis*.

Since the collecting was mostly desultory, being done during spare time and on pleasure trips, the results are the more surprising; besides my attention was not given to parasites alone, but to all orders of insects, although I often made special efforts to collect minute forms. The locality, Lawrence, or Douglas County, Kansas, becomes prominent because most of my collecting was done here at home, when after my day's work in the museum, a change in the open air was afforded during evenings. I believe that innumerable unknown species of these parasites still remain to be captured almost anywhere.

As all these parasites enter into economic importance by reason of their agency in the limitation or suppression of more or less injurious hosts, the field for investigation in this direction seems to offer great possibilities, at least for a better knowledge of them and perhaps to some practical purpose. Possibly the control of destructive hosts can be effected through their agency by artificial means. Field agents are already engaged in special investigations in various States. Kansas has her troubles, too, with insects, and offers a good working field for several special investigators.

Water-Proofing Boots and Shoes.

To prepare a dressing that will render leather boots and shoes water-proof, and which is not injurious to the leather, leaving it soft and pliable, use oil and rubber as follows: Heat in an iron vessel either fish oil or castor oil, or even tallow to about 250 deg. Fahr.; then add, cut in small pieces, vulcanized or raw India rubber to the amount of one-fifth the weight of the oil, gradually stirring the same with a wooden spatula until the rubber is completely dissolved in oil; lastly, to give it color add a small amount of printer's ink. Pour into a suitable vessel and let it cool. One or two applications is sufficient to thoroughly water-proof a pair of boots or shoes for the season. Boots and shoes thus treated will take common blacking with the greatest facility.—Scientific American.

This actually appeared among the editorial notes in the Emporia Gazette: "This actually happened. A farmer's cattle broke into a neighbor's field of corn and the neighbor filed suit in a justice court. Appraisers appointed to assess the amount of damage done to the field of corn, on examination found that the cattle had been in that field but had not eaten an ear of corn because they couldn't reach it. They decided that no damage had been done and the suit was withdrawn."

From Nottingham, England, comes the description of a telephone apparatus designed to obviate the possibility of disease transmission by the usual mouthpiece. The construction is such that the mouthpiece is omitted altogether, and the receiving and transmitting apparatus is combined in a small metal case, shaped like a watch. This is held continuously to the ear, both in speaking and in listening, the transmitting microphone being made so sensitive that it becomes unnecessary to concentrate the sound waves on it by the aid of any mouthpiece such as is ordinarily used.

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But we don't ask you to take any hearsay evidence. We want you to find out for yourself what our Manure Spreader will do. So we make you this remarkable offer. We will send you one of our Spreaders on trial and prepay the freight. Use it a month on your own farm. If you find it exactly as we have represented, after the month's free trial, you can settle for the machine on terms convenient for you.

But, if the American Manure Spreader is not what we claim, send it back at our expense. You don't owe us anything. The trial don't cost you a penny. The month's use you have had of the Spreader is FREE.

Could we do more to prove to you that the American Manure Spreader is what we say? Would we dare to make such an offer if we didn't know what our Spreader will do? Remember—when you deal with us, you are doing business with an independent concern.

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The American Manure Spreader is today an example of the very highest development in modern agricultural implements.

It is absolutely up-to-date. The principles upon which it is constructed are sensible and practical.

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Will you be as fair with us as we are willing to be with you?

Will you send for information of our generous proposition today?

Even though you do not wish to buy now, send for particulars.

Some day you may wish to buy, and then knowledge of our New Selling Plan will come in handy. You will know how to save money.

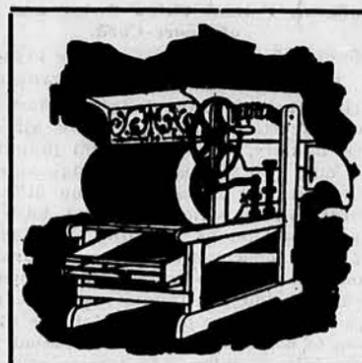
If you will tell us how much land you own, and how many horses, cattle, sheep and hogs you keep, we will give you the Government statistics as to the value of your manure crop.

Write to us today. Put down this paper and write before the matter has a chance to slip your memory. Address at once—

AMERICAN HARROW CO., 10133 Hastings St. Detroit, Mich.

Do You Know?

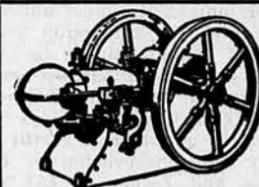
That one handful of noxious weed seed to a bushel of your grain, if planted, will absolutely ruin the crop. There are many cleaners that will remove all but that last handful of the weed seed from your grain, but the "Perfection" is the machine that does the work the way it should be done. Better own the machine that is easy to operate, easy to understand, and yet does its work so perfect that your crops are increased 25 per cent to 50 per cent. :: ::



A "Perfection" cleans, separates and grades anything from Corn to Red-Top.

Write us today and we will tell you what it will do as well as show you how it does it. Be sure and tell us the kind of grain you raise.

THE LEWIS-TUTTLE MFG. CO.
305 C KANSAS AVENUE, TOPEKA, KANSAS.



LIGHTNING GASOLINE ENGINE

STATIONARY AND PORTABLE, 3 TO 25 H. P.

NEW PLAN FOR COOLING CYLINDER

Reduces Water Tank to a Few Gallons

Send for Catalog.—Special Farm Engines

KANSAS CITY HAY PRESS CO., Mill St., Kansas City, Mo.

Thirty-One Styles of Farm Fencing

Sold direct to consumers on thirty days trial at wholesale prices. Catalogue free.

THE FARMERS' FENCE CO.

Box 36.

Malvern, Kansas.

Stock Interests

PURE-BRED STOCK SALES.

Dates claimed only for sales which are advertised or are to be advertised in this paper.
 April 13, 1906—Shorthorns by the Southeastern Breeders Association at Fredonia, Kans. H. E. Bachelder, Manager.
 April 25, 1906—Shorthorns at Manhattan, Kans. F. M. Gifford, Wakefield, Kans.
 May 1, 1906—George Allen, Omaha, Neb., Shorthorns.
 May 8, 9, 10, 1906—Great sale of all beef breeds of cattle at Wichita, Kans. D. R. Mills, Des Moines, Iowa, Manager.
 October 20, 1906—W. R. Dawling, Norcastur, Kans. Poland-Chinas.
 October 25, 1906—D. W. Dingman, Clay Center, Kans., Poland-Chinas.

Alfalfa for Steers.

EDITOR KANSAS FARMER:—I have been feeding 16 4-year-old steers for about three months on alfalfa hay and corn-meal. I am feeding corn-meal morning and night, 5 bushels a day, and alfalfa hay three times a day. Some of these steers have been bloating. This morning after eating their corn-meal and alfalfa hay, two of them were pretty badly bloated. I understand nearly everyone is feeding all the alfalfa hay his stock will eat with-

B. W. Harned, of Beaman, Judge L. L. Frost, of Mirabile, Mo., in a letter to the directors stated that the O. I. C. swine-breeders had made arrangements to participate in the show. The Poland-China breeders were not represented, but it was understood that they would come in. It is expected that the classifications will call for \$500 in cash prizes, in addition to a number of specials for each breed. To encourage the swine-breeders to make a large exhibit, General Manager Rust of the stock yards company announced that the pen rent would be reduced from \$3 to \$2 per pen.

Prof. R. J. Kinzer of the animal husbandry department of the Kansas Agricultural College made a plea for the students' judging contest. He said he had assurances from the Missouri, Kansas, Oklahoma, Texas, and Colorado colleges that they would send teams. The contest will be held on Saturday, October 6. Team and individual prizes will be awarded, the contest being open to all.

At the request of the shire exhibitors, separate classifications will be provided this year for Shires and Clydesdales. H. A. Heath, of Topeka, Kans., was selected as superintendent of the horse department. The prizes in this

the great breeders and improvers of our domestic animals that they were close students of animal form and conformation. They were not satisfied with a general knowledge but carefully noted the most minute points in their bearing upon other parts. This careful study and realization of the value of the points quite often regarded as unimportant gave these men clearer understanding and greater appreciation of the details of conformation. The great breeder is a close student of animal anatomy and has a thorough knowledge of the fundamental principles governing and influencing quality, symmetry, and the correlation of the various parts of the animal mechanism. A careful study along these lines plainly shows us that a perfect harmony must prevail throughout the animal economy if we are to have the highest utility with least friction of parts. The term conformation as applied to animal form should be used in its broadest sense, and should include the outside form in its relation to function, locomotion and adaptation for specific purposes. There have been enthusiasts who claimed conformation to be an absolute index to function and adaptation. The experience of practical stockmen is oftentimes contradic-



MONTEVIDIO 3231.

German Coach. Color bay. A three-year-old quite well matured and a beauty. Owned by The Lincoln Importing Horse Co, Lincoln, Neb.

out danger, but our stock is bothering us a great deal. We had the same trouble last year. I would like to know the cause of it. My alfalfa, which was grown on upland, is very short and full of leaves. Is this the cause of the trouble? I think after this I will mix the alfalfa with straw.

Lincoln County. OLE NIELSON.
 Answer:—When steers are on full feed with alfalfa hay for roughage, they will occasionally bloat. Your alfalfa is undoubtedly of very rich feeding value and I would suggest that you feed some other roughage in addition, as straw or good prairie hay. It would be safer, also, if you were feeding corn- and cob-meal instead of clear corn-meal.

I think you will find that, if you reduce the quantity of alfalfa somewhat, giving some other roughage to take its place, the bloating will cease.
 S. C. WHEELER.

About the American Royal.

EDITOR KANSAS FARMER:—A strong show of breeding swine, a students judging contest, and an enlarged classification in the horse department will be the new features of this year's American Royal Live-Stock Show to be held at Kansas City, October 6-13. These, with many other important details, were passed upon at a meeting of the directors held at the Midland hotel yesterday.

The swine-breeders were represented by the following: N. H. Gentry, Sedalia, Mo., and L. E. Frost, Moberly, Mo., chairman and secretary, respectively, of the swine department; W. L. Addy, of Parnell, president, T. L. Williams, of Dawn, secretary, and C. B. Fagin, of Iathrop, director, of the Missouri Duroc-Jersey Breeders' Association; and Green McFarland of Sedalia and

department will aggregate \$8,560, including \$400 for mules. A bar for the accommodation of the show horses is to be erected within the show-grounds.

Three night shows will be held this year. They will be on Tuesday, Thursday, and Friday nights.

JOHN M. HAZELTON,
 Kansas City, Mo.

Judging Poland China Swine and Use of Score-Card.

PROF. G. C. WHEELER, BEFORE THE FARMER'S INSTITUTE AT CLAY CENTER, KANSAS.

In all live stock judging there are two faculties essential above all others, namely, observation and judgment. No man can successfully judge animals who can not quickly see the different points upon which he must base his final conclusions. While this faculty of keen observation seems natural to some, it may be greatly developed by practice and continuous use especially when this takes place under the direction of some thoroughly competent person. It is also absolutely essential that an ideal be clearly present in the mind's eye in order that any deviation from correct form be quickly noted. This is one of the most difficult things to acquire in connection with forming correct conclusions as to animal form. It requires close observation and study, and considerable experience. After a clearly defined ideal has been fixed in the mind as a result of careful study and observation of the highest types and forms, it but remains for the keen eye to detect the various deviations from this ideal and render the decision in accordance with the amount and importance of the departure from the correct conformation.

ANIMAL FORM AND CONFORMATION.

We find as we study the work of

tory to this over-zealous claim, and consequently some have considered that the study of conformation is unimportant. It may be said that conformation is rather the result of function, and looked at from this standpoint its importance is more easily realized.

It is very important that a breeder be a skillful judge, in fact, a man who is not hardly merits the title of breeder even though his operations are with pedigreed animals. You gentlemen, who are striving to advance the value and general utility of the Poland-China breed of swine, realize that you can accomplish but little unless your knowledge of the conformation of your chosen breed is sufficiently accurate to enable you to see not only the defects of the living animal as produced in your herds, but those which the slaughter test alone will expose.

THE IDEAL HOG.

The market demands have much to do with moulding our ideals and a close study of the standards for the different breeds reveals the fact that in so far as the points relating to the real meat-producing parts are concerned they are almost identical. At present, the distinctly lard-type of hog is favored in the Central West and the Poland-China breed, as now produced, is admirably fitted to meet the requirements. It should be the steadfast aim of you breeders of this grand corn-belt hog, to adhere closely to correct ideals. You must not be satisfied to produce individuals as good as your parent stock. There is no stationary ground for the true breeder. There must be improvement; and this improvement must be harmonious and symmetrical. The charge is made that the Poland-China breed is not prolific.

Every Team Owner

should be prepared for the common ailments and hurts. Wisest plan to have on hand the approved remedy, the one everybody knows and endorses,

Kendall's Spavin Cure

For Spavin, Curb, Splint, Ringbone, Cuts, Wounds, Sores, Sweeney, Galls, etc. No equal in the world.

Cured All Ailments.
 Albany, N. Y. 77 Park Ave., March 8, 1906.
 Dr. B. J. Kendall Co.,
 Enosburg Falls, Vt.
 Gentlemen:—Please send me a copy of your "Treatise on the Horse and his Diseases." I find your Kendall's Spavin Cure all right, I am employed by W. M. Whitney & Co., of Albany, and it has cured all ailments in our stable, Spavin, Curb, Ringbone and Hip Disease, and other ailments.
 WILLIE J. MAUGHTER,
 Coachman.

Price \$1; 6 for \$5. Greatest known liniment for family use. All druggists sell it. Accept no substitute. The great book, "A Treatise on the Horse," free from druggists or
 DR. B. J. KENDALL CO.,
 Enosburg Falls, Vermont.

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WILL SAVE YOU DOLLARS

By preventing loss and sickness among your farm animals. Time to save is before loss occurs. Keep your live stock free from disease. Dipolene will do it. It kills disease germs, destroys ticks, lice, fleas; cures sheep scab, mange, eczema. Protects against mosquitoes, and keeps stock in a healthy, sanitary condition. It's easy to use, powerful, sure and true; DEATH TO DISEASE but perfectly harmless to animals, hair, feathers or wool. A gallon makes 100 gallons dip. Write for price and FREE book, "DIPPING FOR DOLLARS."
 MARSHALL OIL CO.,
 Box 13, Marshalltown, Iowa.

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BE SURE AND WORK THE HORSE

We will refund the money if Blokmore's Gall Cure does not cure collar and saddle galls while the horse works.

Blokmore's Gall Cure

is guaranteed to cure all chaps, bruises, cuts, grease heel, scratches or torn or scratched teats, etc., in cows. Take no substitute. See trade mark. Every horse owner should have our illustrated Horse Book and large sample box Gall Cure for 10 cents for postage on both. Write today, or ask your dealer.

Blokmore Gall Cure Co.
 Box 916
 Old Town, Maine.

Lump Jaw

The first remedy to cure Lump Jaw was

Fleming's Lump Jaw Cure

and it remains today the standard treatment, with years of success back of it, known to be a cure and guaranteed to cure. Don't experiment with substitutes or imitations. Use it, no matter how old or bad the case or what else you may have tried—your money back if Fleming's Lump Jaw Cure ever fails. Our fair plan of selling, together with exhaustive information on Lump Jaw and its treatment, is given in Fleming's Vest-Pocket Veterinary Adviser.

Most complete veterinary book ever printed to be given away. Durably bound, indexed and illustrated. Write us for a free copy.

FLEMING BROS., Chemists,
 212 Union Stock Yards, Chicago, Ill.

If this be true, it is up to you breeders to correct it, for of what avail is it to develop the finest type of hog that grows if it is unable to reproduce at a profitable rate? You must become breeders in the highest sense and in order to do this, as already stated, a thorough knowledge of the animal in all its details and functions is absolutely necessary. This brings us back to the subject of this paper, namely, the judging of Poland-China swine and especially the use of the score-card as an adjunct to a proper estimate of the various points of the animal.

USE OF THE SCORE-CARD.

At our various agricultural colleges, the subject of instruction along animal-husbandry lines has made great progress during the past few years. It is a subject of great value to our agricultural interests and instruction in the principles of stock-judging is an important part of the work, as the future success of the stock grower and breeder is much influenced by his knowledge of what constitutes superior form and quality in animals. Expert judges, however, can not be made of every student given instruction along these lines, but he is started along the right road and as the after years give added experience, he can acquire a higher degree of ability in the knowledge of animal form and function.

In this instruction work the score-card fills an important place. The discussion of its use which follows will be mainly from this standpoint. As a means of placing animals in the showing it is used with poultry only. A National association of expert swine-judges exists and an effort is being made to so systematize the methods of scoring swine as to enable judges to use this method in the show-ring. As yet, it has met with no practical application. With a ring of thirty or forty animals before him, an expert judge can much more quickly and surely pick the best individuals and rank them by the ordinary method of comparative judging. The expert judge who goes into the ring with a clearly defined mental ideal is able to measure each individual by his mental conception and in so doing unconsciously applies the score-card without being hampered by its objectionable features. As an educator the score-card is of great value to the student, both the young man in college and the student in the great practical school of life, for we all must ever remain students if we would make any progress.

The score-card with detailed description, which you hold in your hands, is the one prepared by the National association of expert swine-judges for the Poland-China breed. It has been prepared and arranged with much labor by the association and has been several times revised. Each of the Poland-China record associations have a different scale of points and this multiplicity of record associations and numerous standards is one of the serious difficulties with which the breed has to contend. The standards adopted by each have gradually drawn together, however, until now they vary but little. Already one step toward unity has been accomplished by the consolidation of the Ohio and the Central-Poland-China Record associations and it is to be hoped that the breed may soon be released from this hampering influence. The score-card as given is an effort to describe in words, point by point, the ideal Poland-China hog. By a rigid application of the ideal there is probably not now a hog in existence which should receive a score of over 85 or 90 points. In its application, granted that the student is able to see correctly, the first thing to do is to learn thoroughly the different points and also their comparative value which are indicated by the number following each head at margin of card. For example we note that the back and loin is allowed fourteen points and the ideal is described as, broad, straight or slightly arched, carrying same width from shoulder to ham, surface smooth, free from lumps, creases, or projections, not too long, but broad on top, indicating well-sprung ribs; should not be higher at hip than at shoulder, and should fill out at junction with side so that a straight edge placed along at top of side will touch all the way from point of shoulder to point of ham, should be shorter than belly line. If a careful study of the individual shows that the back and loin vary from the ideal by 2 per cent, we would cut the fourteen points 2.8 or in round numbers three points, leaving its value as eleven points. Noting the neck we see it has a value of two points and the ideal is described as follows: Short, wide, even, smooth, well arched; round-

ing and full from poll to shoulder, with due regard to characteristics of the sex. If we find our individual varies here from the ideal by 2 per cent the cut would be but 4 or in even numbers one-half point off, leaving the value one and one-half points. If we found the neck departing widely from the ideal, say to the extent of 50 per cent, the cut would be one point. Practice in the use of the score-card will tend to fix these relative values of the different parts firmly in mind. It leads to an analytical method of studying the individual, point by point. The student learns to overlook quite serious deviations from the standard upon some minor point provided the animal is very strong in the important points. The end of all pork is the packing-house and the standard of utility is after all the final value of our animals. No doubt there are some present here to-night who have allowed some unimportant feature to become a hobby which has been ridden to the detriment of the animals bred as a whole. Almost all breeds of animals have suffered at some time or other from false standards in the form of fashionable families or fads of one sort or another which have not had a solid foundation to build upon, and the Poland-China breed of swine has not been exempt from these departures from the straight and narrow way which leads to greater utility and better adaptation to the special purpose of pork-production. As we study the score-card it is a great advantage if we can have some animals as nearly perfect as possible in order that the eye may be impressed with the ideal. The student studying this subject will do well to visit famous herds and shows in order that he may feast his eyes upon animals of high degrees of excellence. You positively can not produce a high type of hog unless you know what constitutes a good animal, and the time given to a careful study of the subject is well spent.

It is rather unfortunate that as yet no accurate standards of measurements have been agreed upon for our different types of animals. The taking of measurements is of great value, however, to the beginner and a study of the relative proportion of the parts and the various contour lines of the animal by means of the tape-line will aid greatly in training the eye to detect small differences and correctly estimate dimensions of the various parts.

In making a study of the individual animal, it is important that it be looked at from the correct view-points in order that a clear idea be obtained of the complete development of each part. There are four principal points of view, namely, the front, rear, standing at side and looking down upon the back, and a side position, half kneeling which gives a view of the underline. Viewed from these four different points we are able to note the full conformation of each part, and also the symmetry and relation of the parts as a whole.

In our college work we gradually lead the student away from the score-card as he grows in the ability to carry a mental picture of the ideal in mind and correctly estimate the departure from it in the individual animal. The score-card is used to establish fundamental principles and to direct the habits of observation in a systematic manner, rather than as a means of placing animals in the showing.

It is to be hoped that the cards which have been distributed will be preserved and carefully studied along the lines suggested. A faithful effort to know more of your chosen breed will surely bring its reward.

THE SCORE-CARD USED BY STUDENTS IN JUDGING POLAND-CHINA HOGS.

- 1. HEAD — Broad, even, and smooth between and above the eyes; face slightly dishd, tapering even and gradually to near the end of the nose. Broad lower jaw..... 4
- 2. EYES—Full, clean, prominent, and expressive..... 2
- 3. EARS—Standing up slightly at the base to within two-thirds of the tip where a gentle break or drop should occur; medium size, thin, and fine. Slightly inclined outward..... 2
- 4. NECK — Short, wide, even, smooth, and well arched..... 2
- 5. JOWL — Full, broad, deep, smooth, and firm; carrying fullness back to near point of shoulders.... 2
- 6. SHOULDERS—Broad, and oval at the top, showing evenness with back and neck..... 6
- 7. CHEST—Large, wide, deep, and full; even underline to the shoulder and sides with no creases. Brisket, smooth, even, broad, and extending well forward..... 12

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For Your Family and Your Horse

The Best Antiseptic Known.

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Rheumatism, Strains, Sprains, Swellings and Enlargements.

Price, 25c., 50c. and \$1.00.

Dr. EARL S. SLOAN,
615 Albany St., Boston, Mass.



BLACKLEGGOIDS

THE SIMPLEST, SAFEST, SUREST AND QUICKEST WAY TO VACCINATE CATTLE AGAINST BLACKLEG.

No dose to measure. No liquid to spill. No string to rot. Just a little pill to be placed under the skin by a single thrust of the instrument.

An Injector Free with a Purchase of 100 Vaccinations. For Sale by All Druggists. Literature Free—Write for it.

PARKE, DAVIS & COMPANY.
DETROIT, MICHIGAN, U. S. A.
BRANCHES: New York, Chicago, St. Louis, Boston, Baltimore, New Orleans, Kansas City, Indianapolis, Minneapolis, Memphis, U. S. A.; Walkersville, Ont.; Montreal, Que.



- 8. BACK AND LOIN—Broad, and straight, or slightly arched; carrying same width from shoulder to ham, surface even, smooth, free from lumps, creases, or projections; not too long but broad on top indicating well-sprung ribs..... 14
 - 9. SIDES AND RIBS—Sides, full, firm, and deep, free from wrinkles; carrying size down to belly; even from ham to shoulders..... 10
 - 10. BELLY AND FLANK—Belly, full, broad, and straight, indicating capacity and room; underline straight or nearly so, and free from flabby appearance..... 4
 - 11. HAM AND RUMP—Hams, broad, full, deep, and long from rump to hock; rounding and gradually sloping from the loin to the root of the tail..... 10
 - 12. LEGS AND FEET—Legs, medium length, straight, set well part, and squarely under body, tapering and strong; feet firm, short, tough, and free from defects..... 10
 - 13. TAIL—Medium length and size, smooth, and tapering well and carried in a curl..... 1
 - 14. COAT—Fine, straight, smooth; laying close to and covering the body well..... 3
 - 15. COLOR—Black, with six white points; tip of tail, four white feet and white in face, on nose or point of lower jaw. Few white spots on body not objectionable..... 3
 - 16. SIZE—Large for age; condition, vigor, and vitality to be considered. Boar 2 year old not less than 600 pounds and sow not less than 500 pounds..... 5
 - 17. ACTION AND STYLE—Action vigorous, easy, and graceful; style attractive; high carriage..... 3
 - 18. CONDITION—Healthy; skin clear of scurf, scales, and sores; soft and mellow to the touch; flesh fine..... 2
 - 19. DISPOSITION—Lively, easily handled, and seemingly kind..... 3
 - 20. SYMMETRY—General conformation, size, and style combined to make the desired type or model... 3
- Total100

Important Sale of Clear Scotch Shorthorns.

One of the important Shorthorn sales of the season was made in Illinois nearly three years ago, by Geo. Allen & Son, after selling their fine farm at Allerton, Ill., just before moving to Nebraska and locating at Lexington. Very few persons knew or appreciated what a splendid nucleus of Shorthorn cattle and Shropshire sheep Geo. Allen brought with him to his new home in Nebraska as a foundation to build a grand herd on his Platte valley section of land. From this herd now numbering nearly 100 head Mr. Allen has selected 41 head of typical Shorthorns, of straight Scotch breeding to sell at auction at South Omaha, on Tuesday May 1, 1906, as per announcement in this issue. In this consignment of 14 bulls and 27 young cows and heifers, all bred by Mr. Allen is the best and cleanest lot of Scotch Shorthorns ever offered at auction by any breeder in the West. A list of the best Cruickshank families in this country is given in the sale ad elsewhere in this issue. In selecting the animals for this sale, which is to be Mr. Allen's first since coming West, he desired to make it as attractive as possible and in this he has succeeded, for there is not a single animal in the entire consignment that is not a first-class individual of the purest Cruickshank breeding, and all

STOLL'S STAY-THERE EAR MARK.

The best and cheapest ear-mark made. It possesses more points of merit than any other make. Send for an idea. S. C. Stoll, Des Moines, Ia.



CAR-SUL

The Disinfectant Dip That is Guaranteed.

Stronger and more efficient than any other. Absolutely harmless. Does not gum the hair, crack the skin, or injure the eyes. Kills all lice and vermin. Cures scurvy, mange and all skin diseases. Heals all cuts, wounds, galls and sores. For hogs, cattle, sheep, young stock, poultry and general household use it has no equal.

Send For Free Book

on care of hogs and other livestock. If your dealer does not keep Car-Sul, do not take an imitation but send to us direct.

We Pay the Freight.

Moore Chemical & Mfg. Co.
Incorporated in Illinois, 1501-03 Cassock St., Kansas City, Mo.



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The yearly subscription price of the following magazines is as follows:

- Review of Reviews.....\$3.00
- The Cosmopolitan..... 1.00
- Woman's Home Companion.... 1.00
- Kansas Farmer..... 1.00

Total\$6.00

We have 1,000 subscriptions for the first three to dispose of and can therefore offer the four above-named magazines for \$3 received at this office. The four must go in one set, though they can be sent to different addresses. Address

KANSAS FARMER CO.,
TOPEKA, KANSAS.

FIFTH TERM
JONES' NATIONAL SCHOOL
Of
Auctioneering and Oratory
Davenport, Iowa

5th term opens July 23, 1906. All branches of the work taught. Students now selling in 13 states. For Catalogue write Carey M. Jones, President

HORSE'S SORE SHOULDERS CURED FREE

Name your Dealer and this Paper and we will mail you a FREE SAMPLE SECURITY GALL CURE.

Cures sore shoulders, necks or backs while harnessed or idle. SECURITY REMEDY CO. Minneapolis, Minn.

are bred by Mr. Allen. In preparing his sale catalogue which is now out of print and ready for distribution, there is given the breeds of both dams and sires, which is more than is often given in sale catalogues, for very few breeders have cattle as well-bred in Scotch lines as Mr. Allen has in his herd. In this offering are a number of show cattle and several herd-headers, of which special mention will be made in the next issue. In the meantime, study the sample pedigrees given in the advertisement each issue, send for catalogue, and plan to attend the sale of the purest Cruickshank cattle ever offered in the West.

The Marshall County Hereford Sale.

The Marshall County Hereford Association held its fourth annual sale at Blue Rapids, Kansas, last Saturday. Their offering was one of the good ones of this season consisting of animals by such sires as May's Keep On, Edwards, Pontiff, Rancher, Baccolauareate, Governor, Philletus, Senator, Mytern, Monarch, and Elvira's Java, who sprung from the best Hereford blood in the country.

While the prices were not as high as the same class of animals have brought at other sales this winter, the members of the association were pleased with the results of the sale, and every man who purchased an animal went away feeling that he had secured an unusual bargain, and that every animal that went through the ring was a credit to the integrity and ability of the members of the association as breeders of white faces.

Those who are familiar with the history of this association point to it with pride for they feel that it is one of the great Kansas institutions that has sprung up and continued to do business under the most trying difficulties. Its first sale was held some years ago first on the eve of the great depression in the cattle business. At that time nearly all of the consignment went to local parties who, when the depression came, sold them at whatever price they could get. The result was that the association's first consignment was not permitted to go out and make a name for it, but notwithstanding this, at each succeeding sale buyers began to come from a distance and at the one first held, purchasers were present from Kansas, Nebraska, Texas, and Missouri, and nearly a carload of the animals sold were at once shipped South to be used as herd-headers in Old Mexico.

We predict a great future for the Marshall County Hereford Association. It is made up of men and women of integrity and ability. They are the kind of people who do things, and they are bound to succeed.

The following persons were the contributors to the sale. Miss Lou Goodwin, A. Brook, Geo. E. Miller, E. R. Morgan, Brown Bros., Renwick McKee, W. A. Gilson, L. P. Larson, Cottrell Bros., P. A. Abrant, W. T. Strange and Son, Miss Florence Preston, and F. W. Preston.

Among the buyers were Axtell Edmund, Cleburne, E. Heneburg, Wheaton, A. T. Villander, Irving, Thos. Nugent, Holton; Hurt & Swanstone, Booneville, Mo.; Samuelson Bros, Bala, Kans.; Wm. Moss, Alma; A. V. H. McClure, Republic; Swen Olson, Manhattan; O. C. Lund, Randolph, Thos. Seuler, Blue Rapids, John Villeer, Cleburne, W. A. Gilson, Blue Rapids, E. Blanchard, Friend, Neb.; Theo. Welchselbaum, Ogden; Wm. Phillips, Stockdale; J. G. Arbuthnot, Haworth; Carl Hawkinson, Randolph; E. Miller, Blue Rapids; W. B. Hunt, Blue Rapids, A. Fagler, Wakefield, Wesley Rush, Tulla, Tex.; John Erickson, Waterville; B. Spratt, Blue Rapids.

The Johnson County Sale.

Slowly, but with the assurance of success which a fair sale a square deal give to such an undertaking, the Johnson County Fine Stock Association is building up a business of association sales at Olathe, Kans. The second of the series was held Friday and although some things went low everything in the barn was sold and neighbors as well as visitors were given to understand that if bargains were to be had they could get them by being on the ground. For the most part the Shorthorns sold fairly, considering condition and quality, but in the Hereford section a number of very creditable things were offered which did not nearly bring their value. Prices ranged from \$100 down to \$25, several selling at the higher figure. Perhaps the best bargain of the sale was the handsome young cow, Scottish Star, with young calf at foot by Lord Baniff 2d. She was consigned by H. E. Hayes of Olathe, Kans., and sold to A. L. Sherman of Lenexa, Kans. for \$95, probably \$75 under her value on the basis of the sale.

Contributors to the sale were J. L. Hoover, Gardner, Kans.; A. B. Kelsey, Gardner, Kans.; A. J. James, Lenexa, Kans.; J. W. Ferguson, Lenexa, Kans.; G. P. Kelleher, Springhill, Kans.; A. M. Cooper, Olathe, Kans.; J. F. Hastings, Edgerton, Kans.; J. L. Williams, Olathe, Kans.; G. B. Little, Olathe, Kans.; J. B. Dickson, Edgerton, Kans. H. E. Hayes, secretary of the association, managed the sale.

Among the buyers were: J. H. Powelson, Gardner, Kans.; Schell Case, Olathe, Kans.; A. S. Catlin, Olathe; F. X. Kelly, Gardner; M. C. Reed, Olathe; Scott & March, Belton, Mo.; Geo. W. Aairsworth, Olathe; W. W. Stine, Gardner; H. M. Hill, Lafontaine, Kans.; Nat Lee, Gardner; G. Goode, Olathe; Chas. McFarland, Olathe; Jim Egan, Olathe; A. J. Calvert, Stillwater, Kans.; F. McCarty, Edgerton; K. W. Stern, Gardner.

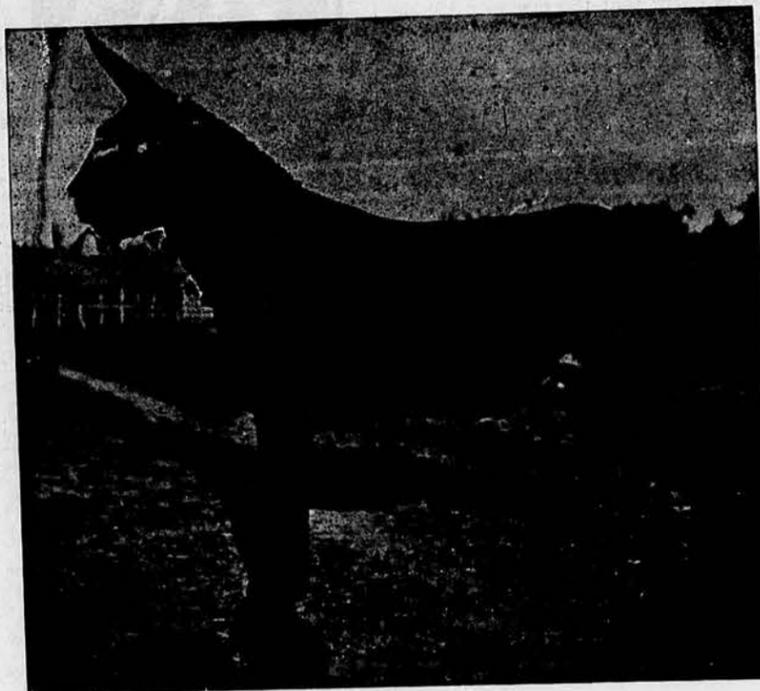
Shorthorn Sale at Hiawatha.

The first annual sale of the Brown County, Kansas, Breeders' Association will be held at Hiawatha, Kans., on April 19. This is one of the best opportunities. Shorthorn men will have a chance to buy the best from eleven of the leading herds of Shorthorn cattle in Kansas, Nebraska, and Missouri at one sale. The very best animals from each herd are going to be consigned to this sale. Mr. Everett Hayes is the manager and is also a breeder of fine Shorthorns and will consign six head to the sale which we will mention

later. There are in all 52 head to be sold, of which 21 are bulls and the rest females. They are all either straight Scotch or Scotch-topped and represent some of the very best blood in this country. The following prominent breeders will consign cattle to this sale: G. Y. Johnson, of Willis, Kans., consigns 4 bulls and 6 females; Everett Hayes, of Hiawatha, Kans., 2 bulls and 4 females; Jas. P. Lahr, of Hiawatha, Kans., 3 bulls and 3 females; Bert K. Wise, of Reserve, Kans., 1 bull; Geo. Manville, of Faucett, Mo., 10 females; W. W. Brown, of Weston, Mo., 1 male and 2 females; A. F. Robinson, of Morrill, Kans., 2 males; Ed. Shuler, of Falls City, Neb., 1 male and 3 females; John McLair, of Horton, Kans., 1 male, a Scotch herd bull. This is Baron Mysie 176261, a 5-year-old bull bred by R. T. Scott of Pawnee City, Neb. Baron Mysie is sired by Velveten Prince, out of Mysie 51st by Baron Wry, second dam Mysie 50th by Imp. Prince President. This is a straight Scotch bull and is without a doubt one of the leading bulls in this section of the country. Remember, this sale consists of the very choicest animals from these excellent herds and this being the first sale held by this association they are consigning some very attractive cattle and only those that will be of value to the buyer. This sale will be held under cover at Hiawatha, Kans., on April 19. Write at once to Everett Hayes, manager, Hiawatha, for a catalogue. Geo. P. Bellows, C. H. Marion and N. T. Moore will do the selling and bids can either be sent to them or to the manager. When writing mention this paper, and don't fail to attend this sale.

The Black and White Sale.

At Independence, Mo., on April 6, was held a sale of Poland-China swine by E. E. Axline of Oak Grove, Mo., and of O. I. C. swine by Dr. O. L. Kerr, of Independence, Mo. Both of these herds



KENTUCKY JACKS AND STALLIONS.

Twenty-five choice registered black jacks, 15 to 16 hands high, 2 to 6 years old, to select from at our barns at Marion, Kans. The largest and best bunch ever shipped from Kentucky; also saddle stallions and a few Jennets. J. F. Cook & Co., Marion, Kans.; Lexington, Ky.

are famous. No Poland-China breeder in the West would consider his herd perfect without some of the Axline kind in it, while Dr. Kerr with his O. I. C.'s pocketed most of the good prizes at the World's Fair that were given to that breed. Mr. Axline sold 30 head of Poland-Chinas, but his trade has been so good that he was obliged to sell some youngsters that he would much rather have kept longer. Excepting 5 head, his offering was all of summer and fall farrow. His average for the 30 head was \$54.40. The top of the sale was brought by the yearling sow, Lady Success, who went to Leon Calhoun, Potter, Kans., for \$400. Calhoun knows a good hog and if it suits him he buys it.

Dr. Kerr's offering was first-class in every respect and good judges pronounce it the best O. I. C. offering ever made in the West. His average on the 30 head was \$64.95. The top of the sale was bought by Kerr Salla, who went to G. G. Koenig, Lamars, Iowa, for \$310. A litter sister of Kerr Queen went to C. H. Brown, Tishomingo, I. T., for \$107.50. The sales were conducted by Col. Jas. W. Sparks, Marshall, Mo., who never did better work. It is pleasant to state that Dr. Keer has a fine lot of youngsters coming on for future delivery. Some of the representative sales are given herewith.

No.	Name	Price.
1.	R. F. Milton, Lees Summit, Mo.	\$100.00
2.	J. J. Herman, Independence, Mo.	87.00
3.	Leon Henninger, Potter, Kan.	100.00
4.	Leon Calhoun, Potter, Kans.	400.00
5.	I. Tyson, Mound City, Mo.	70.00
6.	Mo. Ag. College, Columbia, Mo.	70.00
10.	O. J. Rhodes, Lees Summit, Mo.	45.00
13.	Goodlow Bros., Blue Springs, Mo.	21.00
14.	T. P. Sheehy, Hume, Mo.	32.00
21.	Albert Hutton, Keystone, Mo.	21.00
25.	W. E. Baugh, Mt. Vernon, Mo.	20.00
27.	W. C. Swope, Independence, Mo.	81.00
28.	D. L. Waring, Chester, Neb.	42.00
KERR'S O. I. C.'S		
Sub.	for Lot 1—C. H. Brown, Tishomingo, I. T.	\$ 55.00
2.	T. B. Hall, Windsor, Mo.	51.00

1.	I. Tyson, Mound City, Mo.	58.00
6.	G. G. Koenig, Lamars, Ia.	101.00
7.	Frank Walker, Holmesville, Neb.	27.50
8.	Matthews Bros., Grant City, Mo.	60.00
9.	W. E. Hayes, Osawatomie, Kans.	25.00
12.	W. H. Cole, Pattonsburg, Mo.	51.00
13.	E. J. Munsell, Booneville, Mo.	50.00
16.	Dodge & McDill, Beloit, Kans.	32.00
18.	Wm. Young, Meriden, Kans.	32.50
20.	E. Barrett, Osawatomie, Kan.	32.50
25.	W. J. Lawrie, Cawker City, Kans.	35.00
26.	C. E. Adams, Grandview, Mo.	50.00
28.	Dave Barrett, Osawatomie, Kans.	70.00
30.	G. G. Koenig	310.00

The H. R. Little Shorthorn Sale.

The Rustler, the herd bull to sell in H. R. Little's sale, is half brother to Ruberta, the great show and breeding cow at Tebo Lawn, having the same dam. The sire of the Rustler is also half brother to Ruberta, having the same sire, the great St. Valentine. The Rustler has a good show record, himself having won as a calf, 1st at the great show of the northwest at Hamline, Minn.

First at Kentucky State fair, 2d at Indiana State fair, 2d at Illinois State fair, 2d at Wisconsin State fair, 2d at the great Royal, Kansas City, 4th at the great International at Chicago. He was also shown with his great sister, Ruberta, in the produce class always standing close to the head of the list.

While his breeding is first-class and his show record is good, it is as a breeder that he has achieved his chief glory. Some of the best young stock on Tebo Lawn farm being by him, including a steer, that Mr. Andrew Pringle says is as good as he ever saw of the age.

The splendid work he has done in the Little herd will be demonstrated,



GOMBAULT'S CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Soint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

KRESO DIP KILLS LICE ON ALL LIVE STOCK EASY & SAFE TO USE



BLUE CATTLE LOUSE
KRESO DIP KILLS THIS AND ALL OTHERS
RED CATTLE LICE, HORSE LICE, HOG LICE, SHEEP LICE & TICKS, POULTRY LICE, DOG LICE AND FLEAS

Write For Free Booklets For Sale By All Druggists

PARKE, DAVIS & CO.

HOME OFFICES AND LABORATORIES: DETROIT, MICH.
BRANCHES: New York, Chicago, St. Louis, Boston, Baltimore, New Orleans, Kansas City, Indianapolis, Minneapolis, Memphis, U.S.A.; Walkerville, Ont.; Montreal, Que.

FOR SALE

Four imported full blood Percheron mares, in foal and weighing 1,700 and 1,800 pounds each. These mares are handsome blacks and were recently bought from the Hartman Stock Farm, at Columbus, Ohio. Pedigrees furnished with each. Animals can be seen at my farm, one mile north of Wamego, Kans.

ALEX KANE

Square Deal Stock Farm

Wm. A. Calder, Prop., Bancroft, Kans. We have for sale at \$20 each, two Poland-China boars, sired by Calder's Chief by Garver's Choice, by Kansas Chief; dam Lady U. S. by U. S. Jones.

Berkshires

Of both sexes for sale. Herd headed by Imported Baron Compton 89195.
W. J. Grist, Osawkie, Kans

FOR SALE

At a bargain, one Davis No. 3 hand cream separator. New. N. J. Shepherd, Eldon, Mo.

PATENTS.

J. A. ROSEN, PATENT ATTORNEY
418 Kansas Avenue, Topeka, Kansas

such healthy condition, as those that arrived here yesterday. Every horse is well and many of them are ready to offer for sale at once. These horses came over in charge of our foreman, James B. McLaughlin remains in France where he will continue to buy all of the best horses raised in that country.

The H. R. Little Shorthorn Sale.

In Henry Little's sale April 26, will be bull and heifer calves that, if properly grown, will be winners in next fall's shows. If you are looking for something for the junior yearling class especially, remember this.

These calves are, of course, by The Rustler, who is one of the greatest herd bulls that will pass under an auctioneer's hammer this year, and then there are 24 good cows and heifers in calf to this great sire. All are of good breeding and the kind that Mr. Little expected to retain as a breeding herd until the sale of his farm and a dispersion of the herd was decided.

If you have not yet received a catalogue, send at once to Mr. Little for it mentioning THE KANSAS FARMER and be in attendance at the sale pavilion, Hope, Kansas, April 26, 1906.

The Big Missouri Shorthorn Sale.

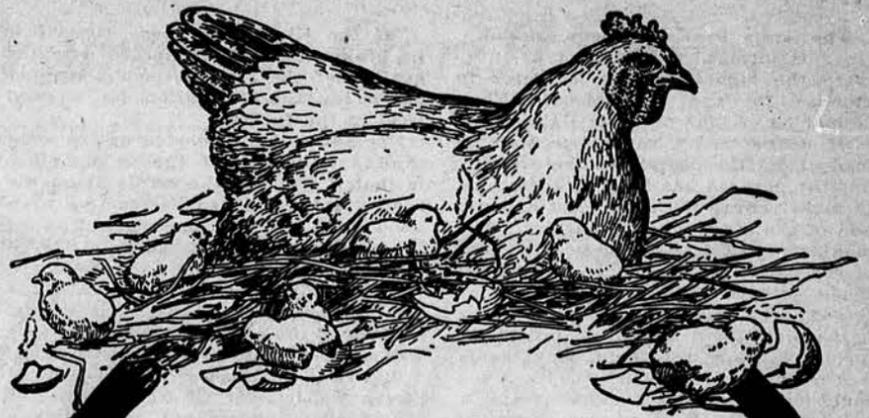
On Friday, April 20, at the new sale pavilion on the State Fair grounds at Sedalia, Mo., will be held a remarkable Shorthorn sale. It is not often that cattle from such noted herds are brought together in one sale. All the consignors are known far and wide for the quality of the Shorthorns they breed and most of them have a national reputation. These gentlemen are exhibitors in the prominent show-rings of

herds, and he intends to keep a class of cattle that is up to the standard. Mr. Wallace is one of the leading farmers and stockmen of Waterville and Washington County, Kansas.

Mr. Thomas's herd is headed by the great boars, Kansas Wonder and Nebraska Wonder, which are two of the greatest sires in the West. S. B. Steele, of Waterville, Kansas, has six Duroc under boars for sale. They are fine ones and just right for summer service. If you need one write him.

Owing to the fact that the date claimed for the Shawnee Breeders' Association sale of Shorthorns conflicts with the date already claimed by H. R. Little, Hope, Kans., for his sale and the added fact that some of the consignors sold so short at private sale that it became impossible to secure enough animals to make a representative sale, the directors have decided not to sell April 26, the date claimed.

The Johnson County Breeders Association held their first cattle sale at Olathe April 6, and while prices ruled rather low, all the offering was sold and the members of the association have the assurance of the breeders in attendance that they are producing good ones, and that they should have been better appreciated. The Johnson County Breeders, who have banded themselves together for the advancement of the stock interest of the County, are on the right track and it is certain that in the future they will reap a harvest from the good seed scattered in this, their first sale effort. The purchasers all got animals at a price that could not help but prove profit-



How to Raise Young Chicks

The difficulties encountered in raising young chicks are numerous. Disease and lice are said to destroy nearly 50% of the annual poultry crop. Errors in diet and unsanitary conditions also help to decrease the poultry profit. But you do not need to suffer these losses if you will give poultry half the care you give other stock. Besides

DR. HESS POULTRY PAN-A-CE-A

is guaranteed to prevent and cure gapes, cholera, roup, indigestion, etc., allaying fermentation and destroying the germs of disease. By its special tonic properties it increases the powers of digestion and assimilation and compels the system to appropriate the maximum amount of food to egg production, also making the young grow fast, healthy and strong. Besides increasing growth and egg production Dr. Hess Poultry Pan-a-ce-a has special curative properties peculiar to itself. Take no so-called poultry food as a substitute. Remember that Dr. Hess Poultry Pan-a-ce-a is the prescription of Dr. Hess (M. D., D. V. S.) and bears the endorsement of leading poultry associations in the United States and Canada, and is sold on a written guarantee. It costs but a penny a day for about 30 fowls. Feed Poultry Pan-a-ce-a as directed, sprinkle Instant Louse Killer on the roosts, nests and into the dust bath, and we guarantee you will have no loss from disease.

1 1/2 lbs. 25c, mail or express 40c. } Except in Canada
5 lbs. 60c. 12 lbs. \$1.25 } and extreme
25 lb. pack \$2.50. } West and South.

Send 2 cents for Dr. Hess 48-page Poultry Book free.

DR. HESS & CLARK, Ashland, Ohio.

INSTANT LOUSE KILLER KILLS LICE.



The first-prize Plymouth Rock cockerel, St. Joseph, Mo., 1906; score 93 1/2 points by Rhodes. One of the highest-scoring birds in the West. Owned by A. H. Miller, Bern, Kans.

the country, especially that of the American Royal where they get "inside the money." Sedalia is only about 3 hours from Kansas City on the Missouri Pacific. It is also on the main line of the M., K. & T. railroad. Get a catalogue and be there. It will be worth the time and trouble.

Col. T. E. Gordon.

The success of all public sales depends not only on the quality of the stock and a liberal amount of advertising but the ability of the auctioneer, as well. We thing desire to call attention to the card of Col. T. E. Gordon, of Waterville, Kansas, in this paper. Col. Gordon was recently elected president of the State Auctioneers Association. He is an able auctioneer, familiar with pedigrees and values of animals, and always enjoys the confidence of his audience. He is fast making a record as an auctioneer and can refer to the well-known breeders of Waterville as to his success and ability. You can make no mistake by employing him.

Poland-Chinas at the American Royal.

E. E. Axline, of Oak Grove, Mo., announces that the Berkshire, Duroc, Jersey and O. I. C. breeders have arranged a show of breeding stock in their several breed at the American Royal next fall and desires that all Poland-China breeders write their wishes to him. As the other breeds will show in the breeding rings it seems desirable that the Poland-Chinas be represented also.

Gossip About Stock.

Albert Schroll, of Greenleaf, Kansas, is one of the coming Poland-China breeders of the State. Mr. Schroll's brood sows are of the large type with good backs and legs. He will have a fine crop of pigs for sale this fall.

Chester Thomas, of Waterville, Kansas, one of the well-known Duroc breeders is having excellent luck with his spring farrow. He now has over a hundred pigs and will be on the market next fall with some good ones. Mr. Thomas's brood sows are wonders in size and excellence of general make-up.

Thomas A. Wallace, of Waterville, Kansas, is one of the new members of the Hereford fraternity, having purchased thirty-three head at the closing out sale of Soltz Bros., of Barnes, Kansas. Mr. Wallace has purchased a bull from one of the leading Nebraska

able investments and these customers will be further purchasers when the advantage of the well-bred stock is demonstrated to them.

June K. King, of Marshall, Mo., is one of the prominent breeders represented in the April 20 Shorthorn sale to be held at Sedalia, Mo. Of his offering, Mr. King writes: "The four head that I consign are good useful cattle. The two cows are nearing their calving. One is in extra good flesh and a grand good one in any company. She is a Moss Rose. The Barrington is not so good nor in high condition but is a regular breeder of large, growthy calves. One of them in the sale—the Wild Eyes calf—is as well bred as any Wild Eyes living and is quite a fine calf. It comes of a very profitable and long-lived family."

Thomas and Swank, of Waterville, Kansas, formerly well-known as breeders of Duroc are closing out their red hogs and will then breed Poland-China exclusively. They have purchased their Poland-China sows from the best breeders in the State and in their herd may be found sows from the stock farms of Dawley, Hammond, Frewitt, Wim, Mastin, and others. These gentlemen are well known to the buyers of pure-bred stock and no mistake will be made when you buy them. They will have some fine offerings this fall with good backs and legs and fancy heads and ears and they have no superiors.

Manwaring Bros, owners of Ridge View herd of Berkshires at Lawrence, Kansas, writes that their hogs are doing well and their sales are good. S. McCullough, of Ottawa, Kansas, just purchased from Ridge View the fine young boar, British Duke 86585. This young boar has made a fine record as a breeder and is siring some mighty good pigs. He is a grandson of Berryton Duke and will probably equal him as a breeder. The Manwarings have sold out almost everything but expect to be able to put a fine bunch of youngsters on the breeding market that were sired by this boar. Only one yearling boar for sale now, but there will be a lot of hummers ready soon.

Chas. Morrison, owner of the Phillips County herds of Red Polled cattle and Poland-China swine at Phillipsburg, thinks he lives in one of the best sections of the country. In a recent letter he says they have been having plenty

California

For a change why not make that visit to California early in the season? You'll enjoy it. Visit Grand Canyon enroute. Stop over and see the Petrified Forest. Ride through the country of fruits and flowers. Attractive and inexpensive variable route tours within the means of almost every one. About one-half the usual rate. Long limit and liberal stop-over privileges. I'll help you plan a trip. Tickets on sale April 25 to May 6, inclusive.

The Santa Fe is the line of fast trains, modern and comfortable chair cars and luxurious Pullmans, Harvey meals, rock-balasted track, block signals.



N. B.—Members of the Mystic Shrine and delegates to National Congress of Mothers, both to be held in Los Angeles between May 7 and 11, should take advantage of this offer. Descriptive folder free.

T. L. KING, Agent, Topeka, Kansas

FOR SALE THE UNCLE SAM OIL-GAS BURNER

Asphalt Residuum for good roads and streets; crude oil for fuel, lubricating, or painting; gas, fuel-oil and water white kerosene of high-grade. All anti-trust independent products by barrel or carload.

W. F. RIGHTMIRE, - 216 The Drive, - Topeka, Kansas

of rain and the ground is full of water. Feed is plentiful and the alfalfa and wheat are showing up in great shape. Mr. Morrison has sold during the past week, one fine Red Polled bull to J. C. Christensen, Randolph, Kans., also one to J. M. Walters, Lebanon, Neb., who also took home a fine boar to head his herd. Bred sows and gilts were also sold to F. A. Stark, Oxford, Neb., who took four head. L. J. Bower, Lenora, Kans., took one; L. W. Beem, Smith Center, Kans., one; T. F. Gardner, Republican City, Neb., one, and George Woodman, Republican City, Neb. The demand for Red Polleds was never better and Mr. Morrison has difficulty in raising enough to go around. He has a fine bunch of Poland-Chinas ready now. See his advertisement.

W. D. Calder, proprietor of the Square Deal herd of Poland-Chinas, Bancroft, Kansas, is one of our new advertisers. Mr. Calder is a young man of exceptional ability in the raising of stock, and while he is not as long in the business as some others, he has succeeded in building up a good business in Northern Kansas.

He has some good herd animals and among his brood sows we found Expansion by Expansion 26293. Black Beauty 73708 by Shawnee Chief, Calder's Pride 73707 by Black Chief, and many others of equally good breeding. His herd boar is an animal of excellent qualities. He is heavy boned, has a good head and ears, and a splendid back with well-sprung ribs, and is an animal of great breeding. He was sired by a son of Highland Chief 26354 and his dam is a granddaughter of Rival Perfection. With this good herd boar, Square Deal 36749, and the sows that he has Mr. Calder will have some fine pigs this fall. He now has two full boars old enough for service which he will sell right. See his ad in this issue.

The Santa Fe Good Roads Special.

(Continued from page 401.)

were the logs though it is better to mortise in the cross-pieces. They should be of pine or other light wood.

Of course many variations may be made from the description here given, but the purpose has been to show how to make a drag with the least expense and of the most effective pattern. The making of the drag is the hardest part of the whole problem of securing good roads without money. It will require the ordinary farmer perhaps two hours to complete the drag and have it ready for use with the ordinary tools at hand. A person who is handy with tools could make it in much less time and it will wear indefinitely when constructed according to the description given above.

With this drag better work can be done on the dirt roads than is possible with a \$250 grader. The grader itself requires the strength of at least one team to pull it on good roads when it is running empty. The grader will deposit a large mass of soft earth in the middle of the road just where it is not wanted and just where it will collect a large amount of moisture with each succeeding rain. The purpose of the split-log drag is to maintain the hardness of the surface under all conditions of weather.

In using the drag, start the team so that the wheel-track will be between the horses, and drive down the right-hand side of the road leading towards town. When you have reached the end of the section of road you desire to cover turn, and with one horse on each side of the wheel-track, come back over the left-hand side of the road. The dragging must not be done when the ground is too wet and will do comparatively little good if the ground is too dry. The proper time to drag is after each rain or spell of wet weather when the earth gets dry enough so that it will not stick to the drag. If it is desired to widen the road it is best to plow a very light furrow on the mark left by the right-hand end of the drag as it has passed to and fro and then, with the drag spread the loose earth over the surface of the road so that the passing teams may pack it hard. This can be continued indefinitely until the road has reached the desired width.

Many farmers think it is necessary to precede the use of the drag with the road-grader. This is not necessary at all and should not be done under ordinary circumstances as the drag will make the most perfect road without the assistance of any other tool or implement. Many farmers seem to think it necessary to construct their drags so as to move large quantities of earth toward the middle of the road. This is all wrong and just what the drag is not built for. Many farmers also think they should shoe the front faces of both the logs in the drag with iron or should at least shoe the entire surface of the front log. Again this is all wrong. The placing of shoes on both the logs or across the entire length of the front log defeats one of the purposes for which the drag is built, namely, the spreading of a thin layer of earth toward the middle of the road with each dragging and smoothing the surface.

A short experience will teach the operator how to handle a drag to the best advantage. He will learn that he should have a slow-walking, steady team, as a fast team will carry the drag along so rapidly that the collected earth in front of the drag does not have time to fall into and fill the ruts and holes. He will find that by changing his position on the platform he can make of the drag a cutting instrument or a smoothing instrument. He should use the drag at a time when the soil is wet enough to bake in the sun after it has been dragged. The method used by Mr. King is one which makes a good road of successive thin layers of earth, each of which is packed solid by the traffic and retains the solidity of the surface all the year around.

It is less labor to maintain a half mile of dirt road in good condition the year around than it is to water a team of horses for the same length of time. A trial will prove this.

NOTES.

There are many sod roads in Kansas and their proper handling presents a problem that has not heretofore been easily solved. Mr. King's recommendation is that, for the purpose of handling sod roads or those which have a strip of sod in the middle, a time should be selected when the ground is thoroughly soaked with water. A disk-harrow should be set at a sharp angle and run over this strip of wet sod to cut it into ribbons. Then with the use

of the King drag these ribbons may present system of road-making in building roads which they do not want and can not use, when by use of the King drag they could have good dirt roads at an average expense of \$5.00 per mile per year or less.

The split-log drag is not a good ditching machine. While it will give a good contour to the road itself it is generally desirable to have a ditch at either side to carry off the surplus water. This can be made easily and cheaply by building a ditcher in the shape of a letter A or an old-fashioned harrow, and placing a steel shoe on the front of the left-hand arm. The right-hand arm serves to guide the machine in the ditch and the left hand one does the cutting.

More mistakes are made by those who build King drags in placing the logs too close together than in any other way. The logs in the King drag should be not less than 30 inches apart and it would not be harmful to have them farther apart. They must never be closer.

Build a King drag now and talk about it afterwards. Get rid of the idea that you have built it for the purpose of moving large quantities of earth to the middle of the road. That is not the object, although it will be found that the middle of the road gets gradually higher with the constant use of the drag, and ultimately it will become necessary to reduce the crown by dragging dirt away from the middle instead of toward it—about once in three draggings.

Don't drag the road when it is too dry. This simply makes more dust and wears out your drag and your temper. It is better to drag often in the winter and spring and less frequently in the hot, dry months of the summer and fall. Mr. King states that he kept the road in front of his place like a racetrack during most of the year and only dragged it twelve times. Two of these draggings occurred in February and none in August.

Do not let the children ride on the drag. It is not a plaything nor is it a sled. It may be dangerous for the children to ride upon it and it would certainly interfere with its proper work.

If the dirt roads of the country are properly dragged, a demand will come in time for macadam or gravel roads between important towns.

Mr. D. Ward King, of Maitland, Mo., who has made the split-log drag famous, lays no claim to being its inventor nor does he have it patented. He states that the inventor of the split-log drag died some 300 years ago and the only merit Mr. King claims in connection with it is its introduction to the general public. To this he is certainly entitled and should receive the thanks of all as a public benefactor. The split-log drag is not for sale but is free to everybody. All that is desired is to see everybody use it.

If your work is of such a nature that you can not drag your road on proper occasions at all seasons of the year, it is better to chip in a few cents with your neighbors and employ some one who will make it his business to drag the road at the proper time. Such a person can be employed in most neighborhoods at from 25c to 35c an hour for time actually spent. This is the Kansas Club idea sanctioned by the Kansas Good Roads Association at its last annual meeting.

During the trip in the gas belt the party on the Good Roads train were permitted to see a number of interesting and unusual sights to be found nowhere else in Kansas outside of this wonderful region. At Coffeyville the party was permitted to visit a very large pottery and witness the operations of making jugs, milk crocks, etc., which are burned by natural gas. At Erie the party was conducted through an oil refinery and shown the wonderful processes through which the crude black petroleum passes in the process of the manufacture of naphtha, gasoline, kerosene, watch oil, machine oil, fuel oil, paving residue, tar, and coke. At Independence all of the operations necessary in the manufacture of window glass were seen and these were marvelous to most of us. At Cherryvale the train passed close by a plant of the great Uncle Sam Oil refinery though time did not permit us to visit it. At Iola the party was accorded the unusual privilege of an inspection of all of the departments of one of the greatest smelters in the United States. There are some 400 men employed here in the process of changing the coarse-grained, yellowish-looking rocks into the silvery zinc ingots.

Because of the lateness of the season, which kept the farmers at home, but more perhaps because of the heavy down pour of rain on Saturday, the crowd in attendance at the Topeka

meeting was not as large as had been expected. What it lacked in size, however, was made up in enthusiasm. This meeting was presided over by Secretary F. D. Coburn of the Kansas State Board of Agriculture.



ROOF PROTECTION

Any building that is worthy of a roof is worthy of a good one; one that will protect the contents from rain, wind or snow. Any roofing material that requires patching every little while is liable to cause you more damage than a new roof of



And besides, consider the annoyance. We don't claim that Mica-Noid will last forever, but years of test in all kinds of climates have proven it will outlast tin, shingles, or iron many times. Then there is another feature of interest about Mica-Noid. You put it on yourself thereby saving one-half the expense. Wouldn't Mica-Noid make a splendid investment for any of your roofs? To enable you to examine this roofing, we will send you a sample of each thickness, FREE. All we ask is your name.

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\$11.12 buys our new 1906 Keawood all steel, nonbreakable, everlasting windmill, which anyone can set up in a few hours. \$12.00 buys our latest new style, best and strongest all steel tower.

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meeting was not as large as had been expected. What it lacked in size, however, was made up in enthusiasm. This meeting was presided over by Secretary F. D. Coburn of the Kansas State Board of Agriculture.

Miscellany

Students' Opinions of the Y. M. C. A.

At the beginning of the building movement in the Agricultural College, requests were sent out to several leading students for a short statement of their opinion concerning the work of the Y. M. C. A. The following are some of the replies:

"The Y. M. C. A. means more to me than any other organization in college. Through its work I have learned to develop the spiritual side of my life, which changes the view of a life-work from one of selfishness to one of service."—J. C. Cunningham, President Athletic Association.

"The Y. M. C. A. is the most important student organization on the campus, touching as it does the moral and religious phases of student life. The progressive steps taken in the last few years have placed it far to the front in value as a college auxiliary. Its best recommendation is the really effective, far-reaching work it is doing."—A. N. H. Beeman, Editor-in-Chief of Student's Herald.

"The Y. M. C. A. has been one of the greatest factors in my development while in college. It has given me something to do in Christian work and kept me out of mischief in idle moments, besides throwing me in the company of the best young men in school. It is indispensable in our colleges."—W. B. Banning, President Webster Society.

"I consider the Y. M. C. A. to be one of the greatest factors in a college man's life. It stands for pure, clean, active manhood and a strenuous life. Its members are the leaders in all student enterprises, such as the college papers, literary societies, and athletics. Its new student work is of inestimable value. It furnishes a social and spiritual development that the churches are unable to give and merits the most hearty cooperation of students and alumni in every detail of its work."—N. L. Towne, '04, Captain '02-'03 Football Team.

"Among college organizations the Y. M. C. A. stands without a peer. The other organizations, even the best, though they develop many cardinal virtues, leave untouched that part of man's nature which he himself is prone to neglect—his innate religious proclivities. To me the Y. M. C. A., with its rapid growth, wide-spread influence, and magnificent outlook, presents strong attractions and unlimited opportunities for the development of all that is desirable, especially that princely quality, helpfulness to others. I am glad to be a member in so royal an organization."—Geo. Gasser, Editor of The Jayhawker.

"When I arrived in Manhattan last fall, a perfect stranger, I was agreeably surprised to meet with a company of young men who seemed anxious to make me feel at home and to give me all the help and information possible. They were the Y. M. C. A. boys, who were working, not for personal gain, but from a feeling of good-fellowship and true brotherly kindness. I have found their association and friendship most helpful."—H. A. Ireland, Winner College Stock-Judging Contest.

"From observations in the last four years I believe that the good of the Y. M. C. A. is beyond estimation. Its influences for that which is pure and manly are found in all organizations of the college. I believe that no better investment for the college can be made than for the support of the Y. M. C. A."—Nicholas Schmitz, Business Manager of Students' Herald.

"The Y. M. C. A. holds a recognized place in college work and is worthy of good support. I believe that the erection of a permanent building will be of great value to the college."—H. P. Hess, Captain of Baseball Team.

"For the college the Y. M. C. A. means a better and more industrious class of students, a higher standard of scholarship, less rowdiness, and cleaner athletics. For the student it means a help toward a cleaner and purer life and a guide for him who is trying to follow where the Master leads."—Earl Evans, Manager Basketball Team, Member Bluemont Quartet.

"The Y. M. C. A. has been to me a training school in the art of systematizing. Not only that—it has been the home-like organization in college. I know it has influence and that it has been effectually used. In my four years of school I can see its effects both on athletics and in the literary

societies."—J. J. Biddison, President Hamilton Society.

"There is probably no student institution in any college more influential among the student body than the college Y. M. C. A. An organization that has for its object the harmonic training of mind and body that they may work in sympathy with the spirit can hold no other place. The Y. M. C. A. takes a student as he enters and by the end of his course it has helped him into the broader view of morals, science, athletics, and enterprise."—Tom L. Pittman, Manager Cooperative Bookstore, Captain Company "A."

"What the Y. M. C. A. has meant to me: (1) The privilege of Christian fellowship and association. (2) A closer spiritual relation to God. (3) A fuller appreciation of the love of Jesus Christ for men, and the responsibility and necessity of living a Christian life. I feel that the development I received in the Y. M. C. A. will prove to be a valuable part of my education when I am confronted with the future problems of life."—Howard D. Matthews, President Alpha Beta Society in Winter Term.

"The College Y. M. C. A. has meant a great deal to me. The benefit derived from its Bible study classes, the training received upon its committees, the acquaintance with its membership fostered by its social gatherings and atmosphere of help and goodwill, the good received from its religious meetings and high standards of Christian living, have all been of incalculable value to me and will help me in future life."—T. W. Buell, One of the Inter-Society Orators.

"Although not a member of the Y. M. C. A., yet I consider the organization one of vast importance and one which deserves to be fostered in this institution, perhaps, more than in some others, for two reasons: (1) Because of the large number of young men who work their way through college and often need its assistance; (2) on account of the large number of young men here. The work of this organization not only has its influence within the college halls, but also among the many homes represented here."—Carl Elling, President Senior Class, Second Place Winner in the International Stock-Judging Contest at Chicago.

"The Y. M. C. A., as we know it today, is one of the greatest spiritual factors in student life. Its object is the work of implanting in the lives of the boys a noble, clean, Christian character, which alone determines the true man. To allow this great work to grow, it is necessary that its accommodations be enlarged. To do this, and not interfere with the college, a building separate from the college and near the college campus should be permitted them, that they may keep in constant touch with the students."—T. E. Dial, Cadet Major.

Farmer's Elevator Companies.

Over seventy delegates, representing nearly 100 farmers' elevators of Kansas, Nebraska, and Oklahoma, met at Hutchinson, April 3, for the annual meeting of the Farmers' Independent Grain Dealers of Kansas. This organization was formed a year ago, and is an association of farmers' independent organizations engaged in handling grain. It is in no sense a merger, no company holding any stock or interest in any other company. The meeting was called to order by C. W. Peckham, of Haven, the vice president, in the absence of President W. M. Kenton, of Chase. E. M. Black, of Preston, was secretary.

President Roosevelt was indorsed and the Kansas board of railroad commissioners condemned for alleged inactivity in behalf of shippers of the State. A strong anti-pass resolution was also adopted.

The by-laws of the organization were so changed that independent elevators of Nebraska and Oklahoma were admitted to membership in the Kansas organization and the officers have assurances that within sixty days the membership will be more than doubled, embracing practically all the independent elevators of the two States and the territory.

The farmers' elevators of Nebraska last year handled 17 million bushels of grain, the Kansas independent elevators handled 12 million bushels, and the Oklahoma independent elevators, approximately, 3½ million bushels. The elevators represented at the meeting have about 1 million dollars capital.

Arrangements are being made for the marketing of grain by a mutual company at Kansas City. Resolutions were adopted denouncing the Kansas City board of trade for suppressing information regarding markets, and for arbitrarily deducting 100 pounds from each carload of grain handled by its members; also favoring the consignment of grain to the National board of trade of Kansas City.

Women in Our Hospitals

Appalling Increases in the Number of Operations Performed Each Year—How Women May Avoid Them.



Miss Ruby Mushrush



Mrs. Alice Berryhill

Going through the hospitals in our large cities one is surprised to find such a large proportion of the patients lying on those snow-white beds women and girls, who are either awaiting or recovering from serious operations.

Why should this be the case? Simply because they have neglected themselves. Female troubles are certainly on the increase among the women of this country—they creep upon them unawares, but every one of those patients in the hospital beds had plenty of warning in that bearing-down feeling, pain at left or right of the abdomen, nervous exhaustion, pain in the small of the back, dizziness, flatulency, displacements of the organs or irregularities. All of these symptoms are indications of an unhealthy condition of the female organs, and if not heeded the penalty has to be paid by a dangerous operation. When these symptoms manifest themselves, do not drag along until you are obliged to go to the hospital and submit to an operation—but remember that Lydia E. Pinkham's Vegetable Compound has saved thousands of women from surgical operations.

When women are troubled with irregular, suppressed or painful periods, weakness, displacement or ulceration of the organs, that bearing-down feeling, inflammation, backache, bloating (or flatulency), general debility, indigestion, and nervous prostration, or are beset with such symptoms as dizziness, lassitude, excitability, irritability, nervousness, sleeplessness, melancholy, "all-gone" and "want-to-be-left-alone" feelings, they should remember there is one tried and true remedy.

Lydia E. Pinkham's Vegetable Compound Succeeds Where Others Fail.

The following letters cannot fail to bring hope to despairing women.

Miss Ruby Mushrush, of East Chicago, Ind., writes:

Dear Mrs. Pinkham:— "I have been a great sufferer with irregular periods and female trouble, and about three months ago the doctor, after using the X-Ray on me, said I had an abscess and would have to have an operation. My mother wanted me to try Lydia E. Pinkham's Vegetable Compound as a last resort, and it not only saved me from an operation but made me entirely well."

Mrs. Alice Berryhill, of 313 Boyce Street, Chattanooga, Tenn., writes:

Dear Mrs. Pinkham:— "Three years ago life looked dark to me. I had ulceration and inflammation of the female organs and was in a serious condition. My health was completely broken down and the doctor told me that if I was not operated upon I would die within six months. I told him I would have no operation but would try Lydia E. Pinkham's Vegetable Compound. He tried to influence me against it but I sent for the medicine that same day and began to use it faithfully. Within five days I felt relief but was not entirely cured until I used it for some time.

"Your medicine is certainly fine. I have induced several friends and neighbors to take it and I know more than a dozen who had female troubles and who to-day are as well and strong as I am from using your Vegetable Compound."

Lydia E. Pinkham's Vegetable Compound at once removes such troubles. Refuse to buy any other medicine, for you need the best.

Mrs. Pinkham, daughter-in-law of Lydia E. Pinkham, invites all sick women to write her for advice. Her advice and medicine have restored thousands to health. Address, Lynn, Mass.



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Portland Cement Concrete has become the recognized building material where strength, durability and sanitary conditions are demanded. Our new book

"Concrete Construction About the Home and on the Farm,"

has just been received from the printers. It contains photographs, descriptions, specifications and sectional drawings for many of the smaller structures that can be built without the aid of skilled labor by the suburbanite or farmer; also much general information and many valuable hints to small contractors.

A copy of this book will be sent free upon request

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CONDUCTED BY RUTH COWGILL.

Contentment.

"Brown and yellow and yellow and brown
Are choicest colors for my crown,"
The sunflower said; "I am content;
I wish no other ornament."

"Yellow and white," the daisy spake,
"Were made, I think, for my own sake;
I scarce would want to show my face,
If other tints should take their place."

"Blue as heaven draped on high,
Blue as bluest spot of sky,
It is the shade I love the best,"
The violet cried with hearty zest.

—J. E. Everett.

Our World.

Our world the truest is the world of
mind;
A loving world if all our thought are
kind;
A holy world if what we think is holy;
A world of truth if truth is sought
for solely.

I may, though, on this globe of soil,
assert
I live not in a sticky world of dirt;
But one of thought and choice, desire
and will
And hopes that throb and loves that
thrill.

—J. E. Everett.

Easter Thoughts.

Easter, like Christmas, is a Christian celebration. It reminds us that Christ rose from the grave, proving to humanity the victory over death, and that life is just begun here on earth. It should indeed be hailed with joy and thanksgiving, and be made a day of rejoicing. When Christ rose from the dead, he said by the act, "I am the resurrection and the life." But that is not all. He is speaking through nature, his handiwork, and saying, "I am the resurrection and the life." Life is springing up everywhere. What so lately was brown and dry in tree and shrub is now showing life and verdure. The life-giving sap is coursing along under the bark, and soon the whole earth will be full of life and beauty. The seeds that have lain in the ground all winter will soon send forth leaves and blossoms, thus proclaiming victory over death.

To all who have had to bid farewell to loved ones and see them lain beneath the sod, the Eastertide is saying, "I am the resurrection and the life." Your loved ones are not there; what is there contains only the elements of the earth, and back to earth it will go. Christ ascended. Think of them as with him above.

The custom of sending flowers on Easter day is a pretty one, especially if sent to the shut-in or the lately bereaved and lonely. The giving of flowers speaks more than words. They need not be expensive hot-house flowers—indeed, the ones cared for in the home and cared for with loving hands are prized more than those that cost money. Bulbs of hyacinths, daffodils, jonquils, lilies of the valley, and others, if planted six or eight weeks before Easter, will be in bloom and make beautiful Easter gifts at a very little expense. Lovers and sweethearts exchange flowers at Easter, but why do not the husband and wife? They need the cheer and reminder that love is still in the heart even more than the young lovers. Why let love be buried beneath the rubbish of care and the common things of life?

Children enjoy the bright-colored Easter eggs and the custom of hiding and hunting them is great fun. The children of Washington enjoy a treat that every child is not permitted to do—I refer to the Easter egg-rolling at the White House. Girls and boys gather at the grounds Monday morning after Easter and enjoy rolling their eggs down the hill. This affair is witnessed by many spectators, including Senators and statesmen and often by the President.

The giving of Easter gifts is becoming more and more a custom. The gifts take the form of Easter symbols, such as eggs filled with confectionary, rabbits, or lilies.

Our Topeka Continental Sunday.

Under the above heading the Topeka Capital of December 5, 1905, said in part:

"Topeka in late years is becoming so liberal, that it leans backward. . . . Restrictions even of the most remote and incidental character upon the inclinations and whims of the people are out of fashion, and the solid religious ideas that created in the country a series of generations of men and women whose opinions were convictions, who lived for something more than

pleasure, and excitement and money-madness, have lost their authority."

It then went on to speak of the mischievous effect on the fibre of a nation when its Sabbaths are desecrated by the opening of the Sunday theater, to which might be added the ball games and open saloons and gambling dens, to say nothing of the Sunday excursions made specially enticing and "cheap" by the various railroad companies.

What is done in Topeka is done in greater or less degree in many other towns in Kansas, and the Sabbath desecration is not confined even to Kansas, but is wide-spread over the United States. It is the knowledge of these lamentable facts that has led such well-known persons as Willbur F. Crafts, William Hubbell, Mary James, and others to plan a week from April 22 to April 29 inclusive, in which to give a prominent place to the various phases of the Sabbath question in the press, in the pulpit, in the Sabbath School, and other meetings held during that time. Can not every one who reads this article undertake to interest some minister and Sabbath school in putting forth some effort to influence the next Legislature to make the Sunday theater and ball games illegal?

Likewise can not every father and mother who reads this take pains to instill into the minds of their children that the Sabbath is a day holy unto the Lord? That Sunday excursions of all kinds, Sunday visiting, Sunday buying, unnecessary Sunday work, as well as neglect of the religious aspect of the Sabbath, are not conducive to the highest development or in keeping with the express commands of God, with their accompanying blessings as given in Isaiah 58:15, 14?

Free literature on this most important question can be obtained from the Woman's National Sabbath Alliance, 156 Fifth Avenue, New York.

ENGLISHWOMAN.

The Lord's Day Week.

The undersigned, in behalf of the societies we represent, appeal to all lovers of Christ in America to set apart April 22 to 29, inclusive, as Lord's Day Week, devoting as much of it as practicable, at home and in the regular church services, to thanksgiving, prayer, study, and service with reference to Sabbath defence.

Praise God, as ever, for the day of rest from toil, and also, in joyous communion with and love and service of our blessed Saviour, for a year that has brought some victories in the arduous warfare for the imperilled Sabbath. We note three among many.

(1) God has moved some of our governors, mayors, and district attorneys to make Sunday law supreme, especially over the saloon. Never before since the civil war have so many saloons been closed on Sundays, and never since then have so many pontical papers and business men approved of such closing.

(2) He has led some railway managers to refuse to run Sunday excursion trains.

(3) He has brought together the various societies that seek to exalt the Lord's Day in hearty cooperation.

Pray God to arouse His people to press on vigorously for greater victories and to awaken employers and employees to realize the folly and curse of Sunday toil, and the moral blight of Sunday sport.

Study God's Sabbath Law as written in the Bible, in nature, and in history, all of which teach that Christian life and growth are impossible unless God has fullest opportunity on His day, to possess, cleanse, and beautify our whole being—lest the Sunday paper, or social function shall rob us of the soul's best inheritance. Study, also, in criminology and history the effect of Sunday sports that weaken the character of men and nations. Study habits and surroundings as related to Sabbath keeping, and how to make the Sabbath more richly bless personal life and the life of the church and community. And let all appeal to Congress to forbid Sunday work in the Money Order and Registry departments of the post-offices and in the National Capital. Let us also urge, regularly or frequently, State and National Legislatures to secure to all employees, who work on Sunday on the plea of necessity or mercy, fifty-two weekly rest days in each year as is done in Switzerland. Let us secure for the Sabbath in this annual week of prayer, a prominent

ROYAL BAKING-POWDER

Absolutely Pure

A GRAPE CREAM OF TARTAR BAKING POWDER

It makes the most delicious
and healthful hot breads,
biscuit and cake

FREE FROM ALUM, LIME OR PHOSPHATIC ACID

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Alum baking powders are unhealthful. Do not use them for raising food under any circumstances. So detrimental are alum baking powders considered, that in most foreign countries their sale is prohibited. In many States in this country the law compels alum powders to be branded to show that they contain this dangerous acid, while in the District of Columbia, Congress has prohibited the sale of all food that contains alum.

Alum baking powders are sold to consumers at from 10 cents a pound to 25 ounces for 25 cents, or 25 cents a pound, and when not branded may generally be distinguished by their price.

place in the press, and in the pulpit, the prayer-meeting, the Sabbath School and in the W. C. T. U., and the other reform meetings of that week and also during all other weeks of the year. Let us federate reform forces in each town so as to educate all the people as to the value of the Sabbath, by putting Sabbath literature into every house and by encouraging and assisting executive officers to enforce obedience to Sunday laws.

Rev. J. B. Davison, secretary Wisconsin Sunday Rest Day Association; Rev. S. T. Mutchler, M. D., secretary Pennsylvania Sabbath Association; Rev. M. D. Kneeland, D. D., secretary New England Sabbath Protective League; Rev. W. F. Crafts, Ph. D., superintendent International Bureau of Reforms; Rev. J. G. Shearer, A. B., secretary Lord's Day Alliance of Canada; Rev. Alex. Jackson, Ph. D., secretary the Cleveland Sunday Union; Rev. Edward Thomas, D. D., L. L. D., manager Sunday League of America; Rev. Frederick J. Stanley, D. D., secretary American Sabbath Union; Rev. Wm. S. Hubbell, D. D., secretary New York Sabbath Committee; Mrs. Mary D. James, honorary president of the National Woman's Sabbath Alliance; Mrs. Varilla F. Cox, superintendent Sabbath Observance Department of the National Woman's Christian Temperance Union.

Proper Food and Feeding.

The amount of advice we have had concerning what to eat and what not to eat, would fill a book. If we eat bolted flour we may expect dyspepsia; if we eat meat look out for lithemia; in pork trichiniasis may be in hiding, and in richest milk the feverish bacilli is doubtless sporting.

And there is much in what we eat, much that concerns our health and strength, but there is much in the way we eat it. It is well to look out for germs, but the most virulent can not stand a bath in good, healthy gastric juice. It is necessary that germs come, one way or another, but let it be woe unto them when they strike the gastric membrane.

Children nowadays are trained to do most everything that is useless and expensive, let us train them to chew, to eat and drink slowly.

A glass of milk swallowed at a gulp is to revert to the way of the ostrich, and to invite indigestion and feed bac-

teria, but to sip it slowly and leisurely is to make the warm, rich blood and the strong, throbbing heart.

Slow eaters are small eaters, because hunger is appeased physiologically through the nervous system. Lots of people never eat, properly speaking, they simply fill up. The delicate nerves of the stomach, which would tell us of hunger appeased, are overwhelmed and stunned by the deluge of drink and the rain of half-masticated food. So they lie silent, and the nerves of ordinary sensation give the signal when we begin to crowd our diaphragm up about the collar bone, and we stop, not because we have enough, but because we are loaded and another mouthful might explode us.

It has been shown experimentally that it is very hard to infect a healthy animal by way of the alimentary tract, though it be fed upon the most virulent of the pathogenic germs.

It is next to impossible to avoid drinking at some time or other the typhoid bacilli, but we can do much towards improving the condition of the digestive organs.

How many of us take a glass of water in one stream, and yet even a horse takes time to drink.

Proper eating and drinking will go far towards rendering harmless many of the bacteria that threaten our life on every side.

There is something in what we eat and drink, but there is a great deal in the way we eat and drink it.—Health.

The Foot-Path to Peace.

To be glad of life because it gives you the chance to love and to work and play and to look up at the stars. To be satisfied with your possessions, but not contented with yourself until you have made the best of them. To despise nothing in the world except falsehood and meanness, and to fear nothing except cowardice. To be governed by your admirations rather than by your disgusts; to covet nothing that is your neighbor's except his kindness of heart and gentleness of manners. To think seldom of your enemies, often of your friends, and every day of Christ; and to spend as much time as you can, with body and with spirit, in God's out-of-doors. These are little guide-posts on the foot-path to peace.—Henry Van Dyke.

The Young Folks

Plant the Trees, Children.

BY REV. DR. C. S. PERCIVAL.

[This song is printed by request that school children may learn it for Arbor day.]

Air: Ring the Bell, Watchman.
Round the green play-ground the dear children stand,
Joy in their faces and shovel in hand,
Waiting a word to be borne on the breeze—
Ready for the welcome mandate,
"Plant, plant the trees."

CHORUS.

Plant the trees, children, plant, yes plant,
Plant for a joy that the future will grant.
Good Kansas sends forth her word on the breeze—
Joyfully obey the summons: "Plant, plant, the trees."

When you are old you may bask in the shade
Which by the growth of this planting is made.
Your children's children, so Heaven decrees,
Will rejoice you heard the summons,
"Plant, plant the trees."

CHORUS.

Plant trees of knowledge where ignorance reigns;
Plant trees of virtue on sin's arid plains;
Make of yourselves "trees of Righteousness"—these
Plantings fill the world with beauty:
"Plant, plant the trees."

CHORUS.

When having passed to the happier land,
Fast by the "Tree of Life" joyful you stand,
Gladly you'll learn how the Saviour decrees
Earthly planting blooms in glory:
"Plant, plant the trees."

Fleetfoot; The Autobiography of a Pony.

CHAPTER III.—HOMEWARD BOUND.

It must have been quite late in the afternoon when Jake (his nap completed) was prompted to rise. He got up slowly and shook himself, then gazed listlessly at the herd of cows approaching from the distance, their bells tinkling clearly in the still air. Finally his glance lit on me; at first he looked a little surprised but the next moment seemed to remember the situation perfectly. Not far away was a spring from which issued cool, sparkling water; going to this my friend quenched his thirst, mutely suggesting that I should do the same.

Owing to the smallness of my stature the spring was not a handy place for me to drink, and I had almost to stand on my head in order to reach it. While in this uncomfortable position I was startled by the hurrying clatter of many hoofs, and almost at the cost of my life I placed my feet on solid earth again. Just then a loud squeal came from somewhere not far from me and I was surprised to see Big Jake balancing himself on his front hoofs while his hind legs sawed the air in a most energetic manner. Realizing, as I did, what an effort those acrobatic exercises must be on my companion, I could not help feeling that something unusual had called them forth.

My doubts and fears were soon settled, however, for the sounds of the hoof-beats ended almost as soon as Jake's squeals began, and the sight of a troup of snorting horses a short distance off, anxious yet fearful to approach nearer, told me that it had been big Jake's sole intention to keep his former associates at bay. I instinctively understood that it was more for my safety than for any other reason that Jake had declared war against his former friends, and I in a vague way was thankful for his interference.

After more loud squeals accompanied by vigorous kicks the group of horses were forced to depart whence they came, and as they disappeared from view, Jake gave me a self-satisfied look from under his long hair, and then calmly proceeded to crop the tender grass.

No other interruption coming our way, my vallant friend started on a slow canter across the pasture and I trotted closely behind.

Presently we came to a high wire-fence in the middle of which was a wooden gate, the fence separating the pasture from the road. The latter was still wet from the recent rains and unsightly ruts were made by the passage of heavy vehicles, but on either side the grass grew fresh and green and flowers of many hues smiled and nodded in the evening breeze.

We halted at the broad well-built gate at a loss to know what next to do. I, at least, was puzzled and had I been alone would never have even considered getting out on the road, but Big

Jake seemed equal to the solving of all problems, for just as soon as he assured himself that the lock was firmly fastened, a new plan at once came into his wise old head.

He turned round slowly, then backed with his whole strength against the gate near the hinges, and gradually the heavy piece of timber lifted and parted, allowing us to pass from the pasture onto the highway. Jake, pleased with his skillful management, started off briskly seeming to well know where he was bound for, and I almost kept up with him, although I was by this time both hungry and tired.

It seemed to me quite a long time before we turned into a wide lane bordered on either side by tall drooping trees. At the end of this lane was a large, grassy yard in which stood a brown house, big and comfortable looking, with many porches and windows; but instead of going straight on as I had expected him to do, Big Jake turned his course to one side and we were now on a narrow pathway. My friend evidently felt himself very much at home, and though my heart beat unnecessarily fast, I gained confidence as I watched Jake's easy-going behavior.

Having already slackened his pace to a slow walk he now came to a standstill, and, as he rubbed his chin on the topmost rail of the fence, he looked with much interest at a team of white horses which advanced slowly through a plowed field some distance away. As they came nearer, I noticed that they were decked out in new harness adorned with numerous buckles which shone brightly in the departing rays of the sun.

The white horses were drawing behind them a machine that said "click, clack, click, clack," as it moved; but most particularly did I observe the driver who wore a wide, flappy straw hat and sat on a round box and carried a long, wicked-looking whip in one of his hands.

"Gee up Clare, Clare! Samson!" he admonished, then sang a short song about "When we go marching home!"

In the meantime Jake had made a discovery. Right over the fence the inquisitive nose went (unmindful of the rails which fell in a shower about us) and when it again came to the surface the heavy jaws were crunching delightedly and from between his lips dropped the tell-tale grains of yellow corn that he had stolen from the well-filled sacks which leaned against the fence.

The first mouthful disposed of before fortifying himself with another supply, Jake gave a glad whinny of recognition to the two white horses who immediately responded in a similar way.

"Gee up Clare. Get up Samson—Clare! Samson! whoa!"

The driver threw himself from his seat within a few feet of where we stood, and I jumped backward with such force as to send a barb on the wire-fence its full length into my flesh. The effect was like that of a bumble-bee sting. This mishap of mine passed unnoticed, for the driver was very busy unhitching his team, while Big Jake was cramming himself with the contents of the sack, which had by this time decreased to a marked extent.

In due season he was discovered with head ear-deep in mischief, but it seemed out of the question to bear malice to good-humored Jake, and the driver instead of punishing him pinched his neck playfully, asking where he learned to steal "seed-corn." Then the stranger's eye alighted on me for the first time. After a surprised stare he muttered under his breath, "Well I'll be doggoned."

CHAPTER IV.—BARNYARD DIFFICULTIES.

Following Jake's guidance I found myself in a lot strewn with corn-cobs. Some large buildings were scattered about and nearly all had wide doors and windows.

I began to grow frightened and drew near my protector as I beheld the growing population of the lot, which had at first seemed empty.

The man who had been planting corn came in with his team through the opposite gate, and leading the tired, thirsty animals to a long trough began to water them from a blue pump. At the pleasant, splashing sound a drove of hogs, large and small and of varied colors, came rushing out of a near-by shed uttering joyful squeals as they approached, and were given their share in troughs set low on the ground. Then a tall, proud turkey walked side by side with a baby calf no larger than myself. Hardly had they reached the well when the gate was thrown open and a dozen or more



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fat horses with jangling harness marched to the scene of action. Loud voices commanded them to stop, others urged them to go on, and then before my astonished eyes came more horses and more workmen and added sounds of disturbance.

Cows with tinkling bells filed calm and unsuspecting through another gate, and moved with majestic ease to the trough which was now surrounded by more live stock than could be accommodated by the perspiring man behind the pump-handle. The horses, growing excited, kicked the cows, and the lowing kine hooked wildly in self-defense. At the same time the hogs struggled under the active hoofs, roaring loudly for their lives.

The man who was pumping gave up with a final stroke of despair, and called out in a voice that had needs be loud to be heard above the rising din, "Fellows! one of you run that calf out or it will be reduced to veal in less than five minutes. And say! while you're at it, fire that wild-eyed colt too. It must be an imp of evil, for things were never in such a shape, and a rain coming up any minute."

Having thus relieved himself of his indignation he again started to operate the pump, but stopped in a moment to watch one of the other men, who, having ejected the wondering little calf, attempted to lay hands on me, and was rewarded for his interference by a swift kick on one of his knees which sent him limping across the lot saying things that even to my unpracticed ear did not sound very elegant.

The cows had effected an inglorious retreat, and several men in working garb gathered about the well, and were taking turns at pumping, and those who were not for the moment engaged made sundry remarks about objects in general and me in particular.

"And the little cuss wouldn't go out for you, Joe?" inquired a mischievous lad, who sat sideways on a long, brown horse.

"He can go to the north pole for all I care," returned the one addressed as Joe, as he put his foot up on a board in the fence and examined the afflicted knee.

"We'll chip in and get you a wooden leg, partner," chimed the youngster from his exalted perch, but further thoughtless expressions were prevented by a warning glance from one older and more sympathetic who hastily changed the subject.

"That's the pony's colt, and I suppose when the poor little fellow was starved and lost he began following Big Jake. Any port in a storm they say. That's a bad place there; an old well with straw and boards over it. A regular trap! It's a great wonder it wasn't one of the Southern thoroughbreds instead of the pony that went down. This morning after you fellows started to work, Culver there, and I went over to fix a fence and from the looks of the place we knew

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something had happened. We did our best but it was too late, for poor 'Queenie' was beyond help. We looked everywhere for the colt but not being able to find it decided that it must have gone down also. It would have been a blessing for the poor little beggar if it had; death by slow starvation is not a very pleasant fate to look forward to."

"It would have been a blessing for me anyway if the muddy waters had swallowed the brat" broke in Joe, who was beginning to recover from his injuries, which did not appear to be as bad as he at first thought.

"I dread to tell the kid," remarked another of the men as he prepared to lead the horses away, "the loss of 'Queenie' will break his heart, and the worst of it is the whole affair happened through carelessness; that old well should have been attended to long ago."

The youth who had teased Joe in regard to the kick I administered slid from his horse, and I was surprised to note the solemn look on his face.

"Poor Lyall," he said, "all this comes from his having a dad who is half lawyer and half farmer."

"That's the trouble and nothing else," returned an angry voice as its owner tried in vain to piece together harness that had been broken in the recent fray. "A man with a large farm has no right to keep a law office in the city. Everything on this place seems possessed (here he gave an impatient jerk at the lines which caused the horse nearest him to glance around with inquiring brown eyes), and a lot of us fellows hardly knowing what to do next and no one to go ahead."

At length the horses were stabled, and as the confusion dwindled down to a few "baas" and grunts, a shining buggy drawn by a handsome, spirited team came into the barn-yard. A tall, broad-shouldered man sprang lightly from the seat and was followed by a slim boy of seven or thereabouts who held in one hand a bright tin pail. The little lad greeted the workmen with shouts of welcome, and started at once to assist his father in unhitching the team.

I soon learned from the conversation of the men that the fair-bearded newcomer was Mr. Dearcot, the owner of the farm, and spoken of as "the boss" when not present.

Whatever might be his ignorance of agricultural matters, it was evident that a strong liking existed between him and his hired help. It seemed as if with his coming all discontent and irritation vanished from the men's faces as they cheerfully came forward to meet him, some offering to help with the horses, others asking advice concerning the morrow's work. He was so gentle of speech and kindly of manner that it was small wonder his helpers were encouraged by his presence.

"I know you fellows must be tired enough dragging through that sticky mud all day," he said sympathetically. "I just thought by the condition the roads are in that a person could hardly walk through the west field to-day much less farm."

The men smiled indulgently and one remarked: "We were the only ones who tried to plant corn to-day. I'm afraid the ground is too water-soaked to allow our work to count for much, but if it doesn't rain to-night I think we will make great progress the remainder of the week."

"Yes, but there is every likelihood of a heavy shower before morning; even now it is thundering," replied Mr. Dearcot as he drew off a pair of flimsy kid gloves and surveyed the oncoming clouds with a critical eye.

Every moment gaining courage I advanced until I was within a few inches of Mr. Dearcot's pretty team of golden brown horses, and they, not being used to such a midget as myself, drew long, frightened breaths and curved their shapely necks. Then for the first time I was seen by the newcomer. The boy bounded forward with a happy laugh, crying, "It's my pony's colt. Where is Queenie? Course she wouldn't stay away in that old pasture; she wanted to come home."

Poor Lyall did not know what had happened, but the man whose name was Joe put his arm around the lad's shoulder and told him how "Queenie" would never come home any more; how she had gone down in the deep, old well because the wind had blown the surrounding fence away. As kindly as the matter was explained, Lyall, child-like, refused to be comforted.

"It's a mean shame," he sobbed, his slender figure shaking with wrath and grief. "Oh, why did we turn my pony out to die?"

With a motion which betokened his disgust with the world and all that it now contained, he hurled his tin buck-

et from him in my direction, and as it lit very near me it parted from its lid and out of the shining interior rolled three rosy apples. Being almost starved I hurriedly ate the mellow fruit, and that was the beginning of my great liking for apples.

When Lyall's lamentations grew less, his father gently reminded him that though Queenie was lost, still there was the little colt which looked so much like her and in the natural order of things would in time take her place perfectly. But this logic, appealing as it might be to older and less interested minds, seemed only to further distress young Lyall, who again overflowed in sorrowful speculations.

"I have no pony now," he wept, "nor don't want one anymore. The little colt belongs to Marcella, but Queenie was my own, my own."

This far and no farther could poor Lyall go.

"Oh, child, child! do you not see that it is all of no use now and you will only make yourself sick by worrying?" exclaimed Mr. Dearcot, who, able lawyer though he was, stood quite helpless in the face of this domestic woe.

Someone suggested that it might be a good plan to finish the chores and put the "pony's colt" in a comfortable place before the coming of the storm which from the troubled appearance of the sky was now almost a surety.

The Little Ones

Easter Morning.

BY E. H. T.
Waken, little people,
Waken, children dear!
Listen, from the steeple
Bells are pealing clear:
"We ring
For the birthday of the spring;
We bring
The happy Easter day."

Bells of silver lilies
Softly stir to-day;
Though their chime so still is,
Yet they seem to say,
"We ring
Only perfume-music as we swing;
We spring
On the happy Easter day."

A May-Fly.

MRS. A. D. GRAY.

Ruth and Helen came in tired and warm from another trip to the big pond in the meadow. "We wanted to see if Mr. Whirligig was there again to-day, or any of his cousins. But there wasn't a one."

"Seems like they might have come out," said Helen.

"There wasn't a thing but a frog and a big old dragon-fly, and another real funny one, that we did not know," said Ruth.

"Tell me how he looked, I may know him."

"Well, he was long, and lots slimmer than Mr. Dragon-fly. His wings were glistening and thin like lace, and he had three long, long tails out behind

and he fluttered up and down over the water, as easy."

"Why that's a very good description," I said.

"Do you know him, mother?"
"Yes, indeed. I'm sure I do. That was a first cousin to the dragon-fly, and one of the strangest little insects we know about."

"I wish my mother was 'quainted with more bugs and things, like you are," said Helen with a sigh.

"The name of this insect is the May-fly; it is a very dainty, pretty little thing. It is much smaller and more slender than a dragon-fly and it does not catch and eat smaller insects like its cousin does. Perhaps for the reason that it has no mouth."

"Oh my!" said Ruth. "I should think that would be right unpleasant," said Helen, thoughtfully, her eyes on the toes of her small slippers.

It lives always in moist places. Its body is very slim, and its wings are of unequal length. It has two fore legs, almost as long as its body. When it flies these are held straight out in front of it. There are three long, stiff hairs on the tail, which extend twice as long as the body. They are very curious little things."

"That's it; Ruth, don't you 'member the tail?" said Helen.

"Yes, that's it. I was sure mother would know."

"These hairs are quite stiff, like the finest glass threads, and are spread out much like a fan. Because they usually come in May, we call them May-flies. They are called another name too, which I have forgotten, but I know it means 'Child of an Hour,' and this is the strangest part. The name was given them because they live but a day, and often but half that long. It takes two whole years for the egg, larva, and pupa—do you remember what I told you those two words meant—to grow to the perfect insect with wings. After it has been born with wings, its life is almost over. It can not eat, for it has no mouth. It is not hungry, so it does not need to hunt for food. And so its short, bright life is spent in darting about in the air.

"It rises up, spins around, and falls. It does this again and again until it flutters down among the water-grass, dead. A great number of these insects come out at the same time. They drop their eggs in the water, dance away their few short hours of life, and are gone."

"Don't you think it is kind of a sad story—some sad?" asked Ruth.

"No, dear," I said, "I don't think it is. The May-fly comes, lives its little life and dies. It does what was expected of it, and so it isn't sad."

Now every queer little insect that you and Helen find, and can describe to me, I will tell you about. This will make you watch more closely and notice more carefully.

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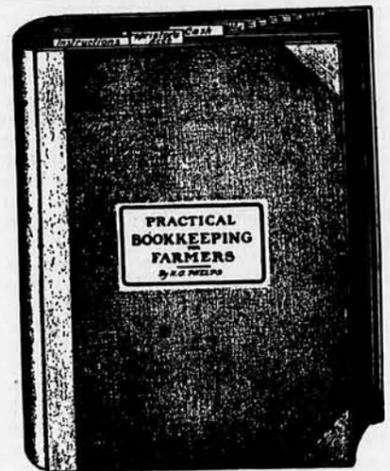
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 Domestic Science Club, Osage, Osage County (1888).
 Ladies' Crescent Club, Tully, Rawlins County, (1902).
 Ladies' Social Society No. 1, Minneapolis, Ottawa County (1888).
 Chautauo Club, Highland Park, Shawnee County (1902).
 Cuitus Club, Phillipsburg, Phillips County (1902).
 P. Literateur Club, Ford, Ford County (1902).
 Sabean 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 (1902).
 Fortnight Club, Grant Township, Reno County, (1902).
 Progressive Society, Rosalia, Butler County (1902).
 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).
 The West Side Study Club, Delphos, (1902).
 Prentiss Reading Club, Cawker City, Mitchell County (1902).
 Cosmos Club, Russel, Kans.
 The Sunflower Club, Perry, Jefferson County (1902).
 Chaldean Club, Sterling, Rice County (1904).
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 The Mutual Helpers, Madison, Kans. (1906).
 West Side Study Club, Delphos (1906).
 (All communications for the Club Department should be directed to Miss Ruth Cowgill, Editor Club Department.)

Art Program.

JEAN FRANCOIS MILLET.

I. Millet—his early life and training.
 II. Preparation for his life work.
 III. "The Sower."
 IV. "The Gleaner."
 I. The early life of this great artist was spent in a little village of France. He received his training principally from a kind father and mother and a religious and loving grandmother. He cared nothing for school, but like children of his artistic nature, preferred the field for his school and nature for his books. His was the simple life of the peasant and a pen picture of it may be both pleasing and instructive.
 II. At about eighteen he left the field with his father's permission to prepare himself for his chosen work. This paper should treat of his life from about this time until he begins to paint for salons and for compensation. Many were his discouragements and disappointments, but never did he swerve from his purpose and success crowned his labors at last, although his true merit was not discovered and acknowledged till near his life's end.
 II. "The Sower" may not be called a pretty picture, but it is true to life and nature. This was one of his prominent characteristics. He would be true when the French people would insist upon his making beautiful peasant girls and handsome men. He would say "your pretty peasant girls are not fit to take up fagots, to glean under the August sun, or draw water from the well."
 IV. In the study of Breton you remember this picture was mentioned in connection with his "gleaners." It will be helpful to make a study of the two pictures again. It will help one to know the real worth of a picture to give much study and thought on these great masterpieces—and the more they are studied, the more one sees of their beauty and worth. A description of these pictures as they seem to one will be very helpful, especially to the writer.

The Club President.

Helen Winslow says in speaking of what is expected of the president of a club:
 "The president is looked upon as guide, philosopher, and friend—yes, more. She is expected to have a definite policy—as different as possible from her predecessor's in too many instances—to be ready to represent the club in public ways at a moment's notice, always well dressed and gracious, to arrange a line of study for her club, to keep in touch with every member, and to do several other things into the bargain. If there are snags in the club's parliamentary path, she is expected to remove them. And after she has done her best there will usually be someone who is able to find where she has fallen short of or exceeded her authority. She should then be careful not to commit her club to any action, no matter how righteous it appears to her individual mind, without the endorsement of the members.

She will see that her voice is never swayed by excitement, that her temper is always cool and collected, and that she is not governed by personal likes and dislikes. If she must call a member to order, she will do it in a thoroughly impersonal manner and with no display of irritability. If this spirit is lacking, and the president allows her voice to be a trifle sharp, sympathy will be against her and with the offending member every time, for democracy reigns on the floor of a woman's club as much as it does in a ward caucus."

INTERNATIONAL SUNDAY-SCHOOL LESSON.

(Copyright 1906, by David W. Clark.)
 Matt. 28: 20; Eccl. 5: 1-7; Psa. 51: 6.
 April 8, 1906.

Our Pledge and How to Keep It.

The expression in definite terms of a definite purpose is of first importance. The advantage of it can hardly be over-estimated. In business it takes the form of a charter or contract in which the intention is defined, or the parties of the first and second part agree and consent to the terms. In government it takes such shape, for example, as the Declaration of Independence. In the religious life it is a creed, covenant, or pledge. In its best form it is not so much an expression of metaphysical opinions about doctrines as an affirmation of a desire to be something and to do something. The immanence of Jesus is the greatest aid in measuring up to the expressed ideal (Matt. 28: 20). One stands or falls to himself. He knows whether or not he is keeping faith with his expressed ideal (Psa. 51: 6). Too much talk about one's ideal is to be deprecated. Be not rash with thy mouth (Eccl. 5: 2). One is to be, not say. Let other people do the saying.

State Temperance Union Convention.

EDITOR KANSAS FARMER:—The Kansas State Temperance Union will hold its annual convention in Topeka May 9, 10, 11, 1906. Nothing has been spared to make this convention the most notable in the history of prohibition in Kansas. The many attractions would be sufficient for a good Chautauqua Assembly. They will but reflect the character and the vast amount of work that is being done throughout the State.

There is scarcely a victory recorded in the State during the past year that the Union has not been directly connected with either conducting the fight or giving valuable assistance. In some places the fight has been long and bitter; in others a stirring up of the sleepy sentinels was all that was necessary. By careful and wise movements, the Union has largely assisted in bringing some of the best men of all parties before the voters of the State.

Every community in the State should be represented at the convention. If there is cleaning up to be done send some one and get acquainted with the force that is at work; if not, send some one and be identified with the force that will carry the warfare into the less fortunate districts of the State. Every temperance society and Church and Sunday school and Young People's Society is entitled to three delegates.

Dr. Louis Albert Banks and Rev. Father James M. Cleary, who are among the many attractions of the convention, are giants in the temperance cause. You should meet them.

An open rate of a fare and one-third from all points in Kansas and from Kansas City and St. Joseph, Mo., to Topeka and return has been granted by all railroads; excursion tickets to be sold on May 7-10 inclusive, good to return leaving Topeka until and including May 14, 1906. ROBERT MORRIS, Sec'y.

The season for seed planting is almost here and progressive farmers generally have either secured their seed or are casting about to find the best place to buy it. For some time we have been carrying an advertisement of seed-corn for W. W. Vansant & Sons, of Farragut, Ia. These gentlemen are seed-raisers. They have made a study of seed-corn breeding for several years and every grain of corn they offer for sale is raised under their personal supervision on their own farms. After it is gathered it is handled in the best possible way to make it produce the best results as seed. Being interested in building up a large business on their seed-corn, the members of this firm are very careful about cultivation, handling, and selection of their seed. In addition to this they have the very best-known varieties. It is a good plan to write them if you are in need of seed-corn. Address W. W. Vansant & Sons, box 54, Farragut, Ia.

Very Low Rates Tuesdays.

Every Tuesday, balance of the year, the Chicago Great Western Railway will sell homeseekers' tickets to Minnesota, North Dakota, and Canadian Northwest at about half rate; to other territory first and third Tuesdays. Write G. W. Lincoln, G. P. A., 7 West 9th St., Kansas City, Mo. State number in party and when going.



ARE YOU SAFE

FROM DAMAGE BY LIGHTNING?

How do you feel when a heavy cloud comes up and the lightning is flashing around you?

Do you get where you can see the barn and after each stroke wonder where it struck and almost hold your breath lest the next one strikes the barn or perhaps the house?

How many times have you got up in the night to see a neighbor's house or barn in flames and feel that you are lucky that it is not your buildings? You probably never lost more than a stack of hay or a cow. But are you safe now? How do you know the next storm will not do the damage?

If you have our Lightning Rods on your building you are in no danger. We guarantee to keep the lightning out of your buildings.

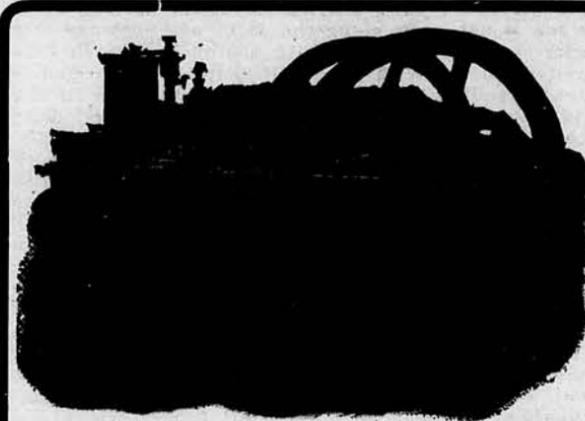
Our booklet, "The Laws and Nature of Lightning and How to Control It" is full of valuable information, and we will send it to you free for the asking.

When buying rods look for our Trade-Mark (D and S) on the end of the spool, and make the Agent show you his Agent's Certificate. This will insure you fair treatment; will show that he is our authorized Agent, and will protect you from the fellow selling an imitation. You will find nothing else as good as the genuine Dodd and Struthers Rod.

Yours truly,

DODD & STRUTHERS

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ADVANCE

Miscellany

Cultivating Corn.

PRESS BULLETIN NO. 119, OKLAHOMA EXPERIMENT STATION.

In considering this operation in corn raising, it should be borne in mind that the object of cultivation is to keep the soil in the most desirable physical condition by controlling as far as possible the amount of moisture and air in it and to destroy the weeds that hinder the growth of the corn in various ways. The yields of this crop depend much upon the skillfulness and thoroughness with which this operation is performed.

The best method to follow in the cultivation of a corn crop will depend upon the character of the soil; the way in which the seed bed has been prepared; the weather conditions during the season; the number and kinds of weeds the soil is infested with and the stage of their development at the time the corn is cultivated; the age of the corn plant when any particular method is to be used; and the conditions that follow any cultivation. The fundamental truth is, in order to obtain the best results in cultivating corn, the method must be varied to meet the conditions named above, so there is no best way that applies to all fields at any time. While this is a simple fact, many do not seem to realize it, as persons can frequently be found who prescribe deep cultivation for all cases, while others claim shallow culture the only method permissible.

KEEP SURFACE ALWAYS MELLOW.

In cultivating corn, there is one point that all should agree upon, and that is that the surface of the ground should be kept mellow and loose at all times in order to prevent loss of moisture by evaporation and to keep the weeds from getting a start. This should be followed from the time the seed is planted until the grain is ripe. Just what operations are necessary to accomplish this and what else is necessary at different times and under varying conditions, is where individual judgment is called for.

CULTIVATE EARLY.

Many make their first mistake, and it is a very serious one, by neglecting cultivation. Frequently the soil is not stirred until the corn is large enough to cultivate with the old-fashioned large shovel cultivator. This usually results in the corn receiving a severe check, due to the surface being baked and hard while the corn is small and tender, and, further, the weeds generally get a start that something in the nature of a plow is required to subdue them. Often this is only partially accomplished and many are left to damage the corn during the entire season. The harrow is one of the best implements to use for these early cultivations and it should be started whenever rain has fallen to pack the soil or whenever weeds have started. Quite often this first cultivation is called for before the corn is up, and, following this, the harrow may be used two or three times. Part of the teeth may or may not be removed. A hinged harrow is manufactured that works very well on listed corn where the rows are reasonably straight and uniform in width. Cultivating in this manner, much can be accomplished in a day at small expense.

After the harrowing stage is past the method of cultivation should vary as the conditions demand. A soil is in its best condition for the growth of corn when it is open or loose enough to allow a fairly free circulation of air and moisture and penetration of the roots. This condition exists in most soils, particularly where the seed bed was properly prepared by good deep plowing or listing. When this is the case all that is desirable in cultivating is to keep two or three inches of the surface of the corn ground stirred to prevent the growth of weeds or the crusting of the surface that allows a loss of moisture by evaporation. How frequently the soil must be stirred to maintain the above condition will depend upon the number and kinds of rains and the foulness of the soil with weed seed.

SOME CASES.

There are cases where deeper cultivation than that mentioned above will be desirable and necessary. A heavy close soil may be too compact, due either to poor preparation of the seed bed or the running together of the soil by heavy dashing rains. When in such a condition, a good deep stirring, six to seven inches, with the large shovel

cultivator will greatly benefit the future growth of the corn. Again, in a season of excessive rainfall, deep cultivation may be applied in order better to aerate the soil and dry it out. Further, weeds may have become so large, due to neglect or weather conditions that prevented checking them at the proper time, that good deep cultivation is necessary in order to dig them out and cover them up. Certain fields that are infested with deep, strong-rooted perennial weeds will require the same treatment.

DAMAGE BY BREAKING CORN ROOTS.

The corn is often damaged by the roots being broken in deep cultivation. This is not the case to a serious extent early in the season when the corn is small, but the check to the crop may be quite marked if cultivated deep late in the season when the corn has reached a height of two to three feet or more, particularly if the previous cultivation has been shallow or neglected. If dry weather happens to follow such a treatment, the damage to the crop is much increased. When not followed by some form of cultivation that will level down the ridges left by the large shovel cultivator, the ground will dry out quite deeply and in the furrows between the ridges, this drying readily reaches the roots of the corn. To obviate this as much as possible, when the old-fashioned large shovels are used, the work should be followed as soon as possible with something to level down the surface. Deep cultivation is hard, slow work and under certain conditions may damage the crop. Unless there is something to be gained by it, as mentioned in some of the cases above, it should not be followed.

As handled by the average farmer, usually the corn field will require the use of the deep cultivator as well as the surface cultivator, but he makes a mistake when he plows his ground every time the surface needs stirring or tries to make one or two very deep cultivations instead of several shallow ones extending over the season. The mistake of too much deep plowing was partially caused by the kind of cultivators usually available a few years ago. They were suitable for nothing but deep stirring of the ground. Now the up-to-date cultivator is equipped with small shovels and more of them, three to five on a side instead of two, as formerly. This enables stirring all of the surface without going the depth of a plow, as was the case with the old big shovels. With the small shovels, the ground is left level, the work required in pulling the cultivator is much less, and more ground can be gone over in a day, making more cultivation possible. Each cultivator should be purchased with the small shovel gangs and the large shovel gangs; as has been stated, either may be needed under certain conditions.

The mistake of cultivating corn deep when the conditions do not require it or make it advisable causes considerable loss in the crop, but not carrying the cultivation on long enough during the season, causes fully as much damage.

WHEN THE CORN IS LARGE.

When the plants are too large to allow the use of a two or three-horse cultivator, the one-horse implement should be used. This keeps the surface mellow and free from weeds and the corn has as favorable a show as possible during the most critical period of its growth and that is at silking and tasseling time and during the growth of the ear. On the other hand, where the cultivations are not continued by the use of the one-horse cultivator, usually the ground is hard and covered with weeds just when the most favorable conditions are required and the corn suffers severely.

Variety Test.

EDITOR KANSAS FARMER:—Some eighty different varieties of corn will be planted at the Kansas Experiment Station as a variety test. These varieties include a large number of "farmers" corns, seed of which has been sent to the College by farmers in different parts of the State. Other samples have been secured from outside the State, from Iowa, Illinois and Nebraska. These include most of the well-bred or "pure-bred" varieties of corn grown in the States named. The purpose of this experiment is to determine which are the hardest and best-producing varieties of corn for planting in Kansas.

The Agriculture Department is also carrying on some co-operative experiments in testing different varieties of corn with farmers located as follows: Burden, Moran, LaHarpe, Baileyville, Linn, Norton, Dresden, Hill City, Cas-



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I Will Show You How To Cure Yours FREE.

I was helpless and bed-ridden for years from a double rupture. No truss could hold. Doctors said I would die if not operated on. I fooled them all and cured myself by a simple discovery. I will send the cure free by mail if you write for it. It cured me and has since cured thousands. It will cure you. Write to-day. Capt. W. A. Collings, Box 109 Watertown, N. Y.

tleton, and Harper. It is well known that the varieties which do best in one locality may not be so well suited to other localities, differing in soil or climatic conditions. By this co-operative test we hope to learn which varieties are best adapted to certain sections of the State.

BREEDING CORN.

We are breeding eight different varieties of corn by the individual ear-test method. These varieties are planted in separate fields and kernels from the best ears of each variety are planted in separate rows. The corn is given similar cultivation. The yield from each row is secured and the corn is kept separate. In this way we learn which are the best-producing ears, and by selecting seed-ears from the rows which give the largest yields we are able to secure better yielding strains of corn, and at the same time improve the quality and type of the corn. This work has only been carried on two or three years with the varieties mentioned. It is also our plan to select corn from these best-producing varieties for sale and distribution among the farmers of the State.

DATE OF PLANTING EXPERIMENT.

It is proposed to plant corn at intervals of a week or ten days, beginning probably by April 10 or 15 and continuing until the middle of June. Two varieties of corn will be used in this experiment, one of late-maturing and the other of early-maturing variety.

METHODS OF PREPARING SEED-BED.

This experiment has been carried on for three years, and will be continued this season. The trial includes the following: As an early treatment one plot is disked twice early in the spring; another is disked and harrowed, two other plots are listed early; at planting time the ridges are split in planting one of these plots, while on the other the corn is planted in the old furrows. A fifth plot is plowed early, while a sixth is left as a check, receiving no treatment until planting time. All of the corn is planted with the lister.

METHODS OF PLANTING.

A test will be made of planting corn with the lister as compared with planting with the surface planter. This experiment was also made in 1903-'04-'05. A new method of planting, introduced last season, which will also be continued this season, is the use of the disc furrow-openers on the surface planter, as compared with surface planting and with lister planting.

CULTIVATION EXPERIMENTS.

The cultivation experiments with corn will include deep cultivation throughout the season; deep cultivation early, and shallow cultivation late; shallow cultivation early and deep cultivation late; and shallow cultivation throughout the season. Experiments will also be made in the use of the disc-cultivator, the acme-cultivator, and weeder, as compared with the six-shovel cultivator. The experiment will be duplicated in two different fields. This experiment has been carried on during the three previous years, and the purpose is to test deep versus shallow cultivation, of whether it is best to cultivate deep or shallow early in the year or late in the season, as well as the other points.

ROTATION EXPERIMENTS.

The rotation experiments with corn were begun in 1903. Forty-eight plots are used in this experiment, being divided into two series of twenty-four plots each. During one season one series of these plots is planted to certain crops named below, which are followed with corn the succeeding season. The rotation crops follow the corn next year, and by having the two series of plots corn is made to follow each of the crops each year. In this way we hope to secure data which will indicate which are the best crops to follow with corn. The crops used in rotation are: Wheat, wheat followed by cow-peas as a catch crop, oats, barley, emmer, flax, millet, cane (sown broadcast), Kafir-corn, corn, corn with cow-peas sown when corn is "laid by," corn with rye sown when corn is "laid by," soy beans and potatoes. Although corn has fol-

lowed these crops only two seasons since the trial begun, yet marked differences in the yield of corn from the different plots have been observed, and the accumulated data of several years should give valuable results.

A. M. TENNEYCK

What Is Barnyard Manure Worth Per Ton?

It has always been a difficult thing for the farmer to determine just what barn-yard manure is worth per ton as compared with commercial fertilizers. Of course manure varies greatly according to the way it has been handled. It is safe to say that its highest value is when freshly made. It can be hauled to the land in that state, before fermentation and evaporation have robbed it of its nitrogen, and it will become incorporated with the soil at its highest value.

Prof. Harry Snyder, of the Minnesota Agricultural College, is one of the best thinkers and writers on this subject in the land. He adduces the following statement in Farm Stock and Home, based on actual facts, to show the worth of barn-yard manure worth \$2 to \$3 per ton. He states that its chemical analysis shows it to be worth \$2 to \$3 per ton. If applied to a worn-out soil at the rate of eight tons per acre, the increase in corn the first year will be twenty to twenty-five bushels per acre. This would be worth \$7. The next year the land will produce six bushels more of wheat, worth say \$4.50. If seeded to clover it would yield at least a ton more hay, worth \$5. Following the clover with wheat again, a gain of eight bushels per acre, worth \$6, will follow. Then will come twelve to fifteen bushels more of oats, worth \$1. He sums up the increase of value as follows:

"The increase in the five crops, due to the dressing of eight tons of farm manure and the production of clover, is alone worth \$25.00, making the value of the manure \$3.00 per ton distributed over five years, equivalent to sixty cents per ton as the annual crop-producing value of the manure. These are not excessive increases in yield; in many cases even larger returns are secured from the application of manure and the production of clover on worn-out land. Thus it will be seen that it is a conservative estimate to consider the manure alone worth at least \$3.00 per ton because of the increased yield secured from its application, and the additional yield is secured with little additional expense in working the soil."

Those of our readers who follow the cow census returns have noted how often comes this comment:

"Manure thrown out and hauled when convenient; liquids wasted."

The farmer who does that is following an old custom and doing no reading and thinking. Reading and thinking would tell him that there is never a better time to load that manure than every day in the stable; that when once loaded it can never be taken to the field more cheaply; that it will never go there in a shape to lose less of its value; that the cost of labor is less in winter than in the spring, when he is hurried with other work; that the barn-yard is thus kept free of a mass of filth; that the manure will be dissolved by the snow and rain, kept from fermenting and heating and become incorporated with the soil at its highest fertilizing value; that the liquids (if he has a tight gutter) will be saved, and can only be saved in this way.

What a fearful flood of waste of fertility and loss of money comes to the host of farmers who will not read and think.—Hoard's Dairyman.

Corn in High Altitudes.

Much has been said by our Eastern friends for a number of years about the impossibility of the arid sections and particularly about corn growing in the higher altitudes. They say it takes warm nights to make corn grow, and as everybody who knows anything about the higher altitudes realizes, the nights there are always cooler than in other sections nearer sea level. We must then admit, if warm nights are an absolute necessity for the growing

of corn, that Western Nebraska and Kansas and Eastern Colorado will not grow corn.

Theory is one thing. Practical demonstrations are quite another thing. When you come to soil culture in the growing of crops, theory says corn cannot be successfully grown above an altitude of 3,000 feet. Practical demonstrations say that forty bushels of good corn per acre have been grown at an altitude of 6,800 feet and this in the face of the fact that in that great corn State, Illinois, where land is worth from \$100 to \$250 per acre and where the nights in midsummer are frequently so hot that sleep is impossible for either man or mosquitoes, the highest average yield has never been in any one year more than forty-one bushels.

While there are plenty of instances along the western border of Kansas and in Eastern Colorado where corn has yielded from thirty-five to forty-five bushels per acre within the past four years, yet the limit of possibility in corn growing in these high altitudes has by no means been reached. There are many branches of science not yet comprehended. In short, but very little thorough experimentation has ever been done in connection with this branch of farming in the West. No one has yet attempted to raise corn in high altitudes on summer tilled lands and only the more common methods of fitting the soil followed by a careful culture of the crop have as yet been resorted to. Only recently have we become convinced that seed corn direct from lower altitudes or from sections where the climatic conditions are different cannot produce as good crops as the same seed after it has become acclimated.

WHERE HUMIDITY STEPS IN.

Look at your agricultural papers from Iowa and Illinois and note the great stress put upon the breeding and selection of seed corn and the wonderful results mentioned that have already been obtained thereby.

Have these scientific principles been taken advantage of with the same degree of care as that given to cultivation? By no means. Have our Eastern friends recognized the fact that the atmosphere of these higher and more arid sections is very much more dry than in Iowa and Illinois and that because of this low humidity the evaporation from the leaf of the plant is as great, while the temperature is several degrees lower than in the above States? In other words, do they know that during midday, when the temperature may be practically the same in both sections, the evaporation from the leaf of the Western plant will be much the greater?

When we realize that the greater the evaporation from the leaf the greater the growth of the plant then we must see that the disadvantages of the cooler night are very largely overcome by decreased humidity of atmosphere. Permit me to suggest in this connection that there are already strong indications that the quality of corn and other cereals grown in the higher altitudes is as a rule very much better when fully matured than of those grown in lower altitudes.

I most earnestly urge the friends of the Campbell system to begin this year and give corn growing a thorough and fair test in the higher altitudes. First of all, carefully summer-till a piece of ground of the size you desire to plant to corn. Be ready the next season with as good seed as may be obtained near by, using the earlier dent varieties. Then proceed from the first crop and select the earliest and best ears for seed for the next crop and so continue until you have fully proven the merits of summer culture, seed selection, acclimation, and our drier climate.

While you can not plant your corn as early in the higher altitudes of Colorado, Kansas or Nebraska as in the Central States, you can usually begin the cultivation earlier and thereby get your soil in better condition. If you have been careful to carry some moisture through the winter in the soil this early cultivation and careful fitting will make certain a quicker germination and a rapid early growth. One of the early important steps in corn growing is to double disc the surface as soon as conditions will permit. Then follow with the after tillage that will retain the moisture and admit of a free circulation. The latter assists very materially in warming the soil and in increasing the available plant elements.

While good results may be had by carefully fitting the soil this spring, far better results may be obtained by summer tilling one season prior to cropping. In short, the latter plan, with acclimated seeds and with the soil

properly cultivated, practically guarantees a good crop.—H. W. Campbell in the Scientific Farmer.

Here and There on the Farm.

Moist weather.
Very few oats planted.
A fine spring for seeding tame grass.
Some men haul the manure which is full of grass-seeds to thin places on the pastures or meadows with good success. In this way they kill two birds with one stone.

Take off your hat to the old sow, but don't give her too much corn at farrowing time. Don't be afraid to slop her, but commence a month before she farrows.

Many farmers are now looking for seed-corn, but most of us would be better off with some about one-third bad. Don't get the corn too thick.

Poultry pays. Select one kind and have good ones.

Do you know that cheap hen-houses are as good as any. Build 8x10 feet, 7 1/2 foot front, 4 1/2 foot back, 10 foot board roof, 2x4 around top and bottom. Have door and window. Strip the cracks and line with tar paper. "Too small," did you say? Build as many as you like. There is no law against it.

Hasten the parcels post. "Ask and ye shall receive." While we wait, let us fix the roads.

Natural stone should be used wherever possible in preference to wood and tin.

CHAS. WINANS.

Jefferson County.

One Way to Make a Living.

The chief industry of Bethlehem of Judea is that of the mother-of-pearl workers. The shells are brought from the Red Sea, and in the hands of native artisans are polished and carved, the larger into elaborate designs; the smaller are cut up for rosaries and crosses. The work is all done by hand, and the methods are amazingly primitive to a spectator from the home of steam and electric power. But the results are extraordinary. The largest shell we saw was carved in scenes from the birth of Christ, the Agony in the Garden and the Crucifixion, and had the general effect of delicate frostwork. Under the magnifying glass every detail was seen to be perfect in outline and in finish. It was executed to order for a wealthy American, and was to cost \$160. About 150 persons make a living by this industry, which is 500 years old. In the shops the workmen sit upon the floor, their benches in front of them; the air is full of whitish dust, and the light, admitted by the single window and the open door, so dim that the exquisite tracery of the wrought shells is a mystery even before the visitor notes how few, simple and crude are the instruments employed.—Lippincott's.

Pertinent.

A Jew who had been using a push cart to convey his merchandise through the district where he was accustomed to sell his wares finally became sufficiently prosperous to warrant his buying an old horse and wagon.

Having been too much absorbed in the prosecution of his business to pay much attention to other matters, he was profoundly ignorant of the terms used by the average driver in persuading his horse to move.

Therefore, when his rig was hitched up for the first time, and he was seated in his wagon with the reins in his hand, he patiently waited a while, expecting the horse to understand his particular part of the business. But the horse, being satisfied with the situation, did not move. Desirous of proceeding on his way, the Jew, after a period of silence, addressed the horse thus:

"Vell, commence."

Indian Creek Grange, northern Shawnee County, will hold an open session on Tuesday evening, April 17, at Indian Creek schoolhouse. The program includes a debate on the question, "Resolved that United States Senators should be elected by direct vote of the people." The affirmative will be upheld by A. E. Dickenson and W. L. Reed; the negative by A. L. Brooke and J. M. Pollom. The new piano just purchased by the grange will be dedicated at this meeting. "What can be done to prevent the ravages of injurious insects," will be discussed by J. F. Ceell. This will be followed by music by Glen Pollom and a recitation by Mrs. Reed. This program deserves and will doubtless draw a full house.

Saying and doing are two things.—Henry.



OLDS ENGINES

There is no gas engine as simple as an Olds—compare it with others and this statement is proved. The repairs cost practically nothing. Every adjustment is very simple to make. Exact duplicate of any part can be furnished at once, perfectly machined and ready to put on. This is important in case of accident.

The Most Economical Engine

For running cream separator sawing wood, pumping, feed grinding, churning, and all farm work. Our reference—The User—The Man with an Olds. The reason why is interestingly told in our catalog mailed on request. Tell us your requirements and we will help you figure out what you need. Send for our catalogue showing Type A (2-3 h. p.), Type G (8-50 h. p.), Types K and N (12-17 1/2 h. p. used with our Gas Producer it will reduce fuel cost 75 per cent.)

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For 4c in stamps to pay cost of mailing we will also send you Rosa Bonheur's "Horse Fair," the most celebrated animal picture in the world, size 16 x 20 beautifully colored, suitable for framing.

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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 American Boy for April will certainly please the boys, with its 101 pictures illustrating stories and leading articles of absorbing interest to the young. Boys who love animals will follow with eager delight "Shaggycoat," the biography of a beaver, by Clarence Hawks, the blind naturalist, "Shad Fishermen Casting Their Big Nets," and "Bird Migrations," by Professor Thoms. Games and sports are represented by a baseball story, it being number six of "Stories Out of the Editor's Life." Under the heading of athletics comes "My Tour of the Antipodes," part 1 of the story of Arthur Duffey's sprinting contests in Australia as told by himself. Of short stories there are "A Brave Korean," "Wolves at the Door," "The Biggest Fool at Last," and "The Truth About the Cowboy." Other titles are "Working Your Way," "Some Boys' Mistakes," "William R. Harper," "Among the Boys," "About Marbles," "Harry Castlemon," "The True History of Captain Kidd," "Uncle Sam's Weather Map," "Mexican Boy Cargadores," "Sliding to Bases," "Boyhood of Great Americans," "Young Prince Joachim," "The Boys' Garden," "The Care of the Teeth," "Stamps, Coins, and Curios," "The Boy Photographer," "Experimental Lessons in Electricity," "The Wizard of Menlo," "How to Make a Sand Wheel," "Chemistry for Boys," and nearly fifty puzzles, tricks, problems, and contests that will keep the boys busy through the month. This number of The American Boy will interest every member of the family. Subscription price \$1.00 a year. The Sprague Publishing Co., Detroit, Mich.

Some Hen Figures.

Anyone with a liking for statistics may get some glorious facts and figures out of Uncle Sam's annual report on farming operations. It gives a first-class idea of just what we are doing in the way of feeding ourselves—and in the rest of the world. No one has a just conception of the immensity of American farm products until he reads such a report. Take the poultry industry, annual production about 43,000,000 crates, or 1,472,043,730 dozens, or 17,664,524,760 individual and separate eggs, worth approximately \$130,000,000. These figures are amazing, yet in spite of this enormous production, it is still a fact that eggs are constantly advancing in price. The hen man needs to wake up to this fact if he aims at the highest possibilities in his business; for until this increasing demand is met and passed, prices are bound to rule higher. This being true, it is manifestly wise to take any and every course that will help production. No better thing can possibly be done to increase laying than giving a healthy tonic in regular daily doses. All hens, and young chicks as well, need just this help in order to produce the most, or make satisfactory growth. Nothing better for the purpose can be found than Dr. Hess' Poultry Pan-a-ce-a. Thousands of successful poultrymen from all parts of the country testify to the wonderful value of this tonic. Dr. Hess (M. D., D. V. S.), has for years studied every possible condition which may exist in poultry culture, and has given the world his Poultry Pan-a-ce-a as a result. For those who do not know about this tonic let me say, it does not force egg-production by exciting or stimulating the fowl unnaturally. Instead, it makes digestion in the hen an easy and natural process,

so that every grain or spoonful of mash eaten either makes egg or flesh as Nature intended, and in the largest possible amount.

Those who use Dr. Hess Poultry Pan-a-ce-a tell us that it does positively cure and prevent disease. No flock can be sickly where it is used, because it makes the red blood which Nature requires for health, and also the necessary nitrates to carry off poisonous matter from the hen's system. By the use of this wonderful tonic, chicks are matured much earlier than would otherwise be the case; and pullets come into laying when eggs are highest and continue profitable the entire season. The cost of Poultry Pan-a-ce-a is a mere trifle compared with the great result it brings about. One cent's worth will feed 30 hens a day. Dr. Hess and Clark of Ashland, Ohio, who prepare it, back Poultry Pan-a-ce-a with a written guarantee, so there is no risk in trying it. It is abundantly proved that if you use it as directed and occasionally sprinkle hens, roosts, and nests with Instant Louse Killer, your flock will be free from disease and uniformly profitable.

A New Labor Saver.

The Coffeyville Implement Co., Coffeyville, Kans., has placed every farmer, gardener, and florist under obligations by placing on the market a small hand disk cultivator. In these days, when efficient help is so hard to secure, any new labor-saving device will be welcomed. This little implement is equipped with three disks on each side that can be set at any angle and so adjusted as to throw the dirt to or from the plants. Both sides of the row are cultivated at once. This machine is a good weed-killer, and thoroughly cultivates the soil. It is cheap and ought to be in the hands of every man who has a garden and every woman who raises flowers. Write for a descriptive circular. You will buy one of these implements.

New Process Manufacturing Company.

At Lincoln, Kans., is located the New Process Manufacturing Co., which has some remarkable bargains to offer to our readers. You will note these bargains in their advertisement on page 413. Think of it! A complete set of chinaware for only \$1.80 and up. Twenty-six pieces of good plated table cutlery for only \$2.50. There are others. Write them for a catalogue and see for yourself. This company is reliable and will do what they promise. It only costs a postal card to get their catalogue.

A Home For Half the Money

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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.

Horticulture

"Disastrous Grape-Vine Diseases and a Remedy."

The American Steel and Wire Co. has just issued a little booklet under the above title. For the benefit that may yet be derived this spring and for information of effective treatment to be applied in the fall, we reproduce a considerable portion of the booklet. Those who desire a free copy of the booklet should address the above company at Chicago, mentioning THE KANSAS FARMER. Following are excerpts:

Chlorosis is a disease itself or the evidence of disease. The distinctive signs of chlorosis in grape-vines and other plants consist in the stoppage of growth, twigs remaining thin, the leaves turning yellow, and the plant becoming barren.

Gris in 1849 showed that chlorosis is due to lack of iron. In 1869 Sachs called attention to the necessity for iron in healthy plant growth.

The disease has been traced to too rapid growth, poorly aerated soil, excess of lime in the soil. There remains obscure causes for the disease.

Sulfate of iron is in most cases a sure cure for the disease, and the consumption of this material in Europe has reached enormous quantities.

Rassiguer discovered a simple and practical method of combating the disease, which may be best given in his own words:

"The treatment with sulfate of iron, as an antidote to chlorosis, which I invented in 1891 and tried on my own property, has furnished such results that the method has spread and experience has taught its value to both scientists and practical wine-growers.

"For the benefit of those who are still unacquainted with the details of the matter, I will briefly review the conditions to be followed as to the time, method of operating, and quantity of dressing to apply; and recount the influence of a single annual washing on chlorosis, anthracnose, and 'short node' on vines, fruit-trees, and roses.

"To produce the full effect, washing should be performed in autumn, the vines most afflicted with chlorosis being treated first, as soon as the first leaves begin to fall; in fact, I think that such as are very much stunted should be treated before any of the leaves come off. Both are washed immediately after each stock has been pruned.

"All the wounds made in pruning should, without exception, be drenched with the iron solution and, in order to ensure the curing of the disease, the drenching should extend over the whole surface of the trimmed shoots (not excepting the buds, these being sufficiently protected by their downy envelope), the branches, and even the stem, as will be explained below.

"There is no need to be afraid of a more or less deep coloration of the trimmed shoots, and if any of these—insufficiently ripened, and therefore liable to perish—should succumb to the washing process, their place will shortly afterwards be found taken by vigorous buds—beside or below the dead shoots—which will bear fruit the next year. All vines, well or diseased, may be washed with advantage, as the treatment strengthens growth.

"If postponed until the cold weather sets in, the washing will have little effect, and spring washing is less efficacious against chlorosis than autumn washing.

"An active laborer with a wooden pail and a brush or, better still, a woolen rag tied up in the shape of a brush, can wash after three pruners. The solution should be a saturated one, i. e. containing 40 to 45 per cent of sulfate of iron and may be prepared in a very simple manner by placing 80 to 90 lbs. of sulfate of iron in a wicker basket or jute bag slung on a stick and suspending in a vessel large enough to hold 200 gallons of water without overflowing when the basket is immersed. After leaving over night the sulfate will be dissolved and the liquor ready for use the next day.

"Generally the results of the treatment are remarkably beneficial, and in many places a complete cure is effected the first year. However, some soils are less favorable to viticulture and require the treatment to be repeated. Chlorosis has also been cured in fruit and rose trees by washing the pruned surfaces with the same solution.

"Moreover, when the dressing is applied over the entire surface of the stock, it is capable of destroying the germs of oidium, anthracnose, mildew,

and insects lodged in the interstices of the bark.

"Three years' consecutive treatment of my own vines cured the stocks suffering from short node, i. e. those where the nodes on the stocky branches were only a few centimetres apart. These formerly unproductive stocks now yield a large crop, and the internodes are of ordinary length.

"First year's grafts may be treated with a 20 to 30 per cent solution, the full dose being repeated the third or fourth year.

"Thus all the foregoing maladies are curable by a single annual operation.

"I recommend the pruner to cut through the middle of the bud just above the one destined to bear fruit, so as to leave intact the protecting septum existing at this point, and which, when cauterized at the surface by the action of the sulfate of iron, preserves the adjacent internode from the effects of frost, insects, or wet, which might otherwise penetrate the pith; this internode remaining healthy, the fruit bud will be rendered more vigorous."

ANTHRACNOSE OR BIRD'S EYE ROT OF THE GRAPE.

This fungus disease and its cure is so well described by Prof. O. M. Morris in Bulletin No. 64 (Jan., 1905), of the Oklahoma Agricultural Experiment Station, that we quote the article entire:

"This disease is scattered over a large portion of the territory and is doing a great deal of damage. It is one of the worst of plant diseases, as it attacks the fruit and all green portions of the plant and is very difficult to handle. Most of the methods of treatment prove unsatisfactory. The first appearance of this trouble should be vigorously met and all possible care taken to prevent its spread.

"This disease may appear at any time during the growing season. It commonly appears on the shoots soon after growth starts in the spring. Its presence on the shoots is first indicated by the darkening and sinking of the bark in small oval or oblong spots extending lengthwise of the shoots. If the disease is abundant the shoots soon have a speckled appearance. These spots usually enlarge, the greater portion remaining black with a more or less distinct line of purple around the edge. After a time the center turns gray and forms a scab; this is the fruiting portion of the disease. Limbs badly affected are severely checked in growth or killed. The leaves are attacked and on the stem and vines show the same marks as on the shoots, but on the blade of the leaf the spots turn brown. The stems of the clusters are also attacked, and where the spots girdle a stem the fruit below the girdle does not ripen but remains green and withers.

"The disease usually appears on the berries when they are about half grown. The diseased portion is brown with the characteristic red or purple margin and round in outline. The discolored part is sunken and later turns to a lighter or gray color, which is caused by the fruiting portion of the fungus rupturing the skin and forming a scab. Some varieties are more susceptible to the disease than others. Among those most susceptible to its attacks are Goethe, Agawam, Vergennes, and Diamond.

Treatment should begin early, before the buds open in the spring. The following solution is very good to apply as a wash before the growth starts in the spring:

Sulfate of iron, 70 pounds; sulfuric acid, 1 pint; warm water, 16 gallons.

The acid should be poured over the sulfate of iron crystals and then the water added. This, if well applied, will kill all of the spores that have lodged in the vines over winter. When this solution is used the vines turn black, and any part of the vine that has not turned black within a day or two after the first application should be washed again. Bordeaux mixture is of value in holding the disease in check on the growing vines."

Growing of the Grape.

E. F. STEPHENS, CRETE, NEBR.

The grape is the oldest of domesticated fruits. Doubtless, wine was made from it even before it was brought into cultivation. We read that its product was in use in Noah's time. The fruit is so easily grown that we feel sure the grape would find a place on every home if people really knew how easily and surely it can be grown. Doubtless, many people feel that its cultivation requires more than ordinary skill. Many neglect winter protection.

PLANTING.

Our habit is to plow the ground in

narrow lands, bringing the dead furrows eight feet apart, except every fifth row which should be ten feet apart. This will allow driving through with a team for the purpose of covering the vineyard in winter and also for hauling out the fruit-crop.

We subsoil these dead furrows to the utmost depth possible, using four to six horses. We then follow with disc and harrow. This helps to conserve moisture and allows the vines to root deeply. If the soil is not very fertile, we fertilize heavily with fine, old manure. We also use whatever amount of ashes we can secure to increase the amount of potash available.

Having prepared the ground so thoroughly with team-work, we are not required to dig large holes for the roots by hand. We aim, however, to plant them four inches deeper than they grew in the nursery.

If it is convenient to go to the slaughter house and secure wagon loads of bones we use those, since bones by their slow decomposition furnish one of the best and most lasting fertilizers for the vineyard.

In planting use strong, two-year-old vines. Cut these back to three or four buds. Allow two or three canes to grow the first season.

CULTIVATION.

Cultivation should be weekly from planting time until August 1, after which allow the vines to ripen. Early in November all vines should be cut back nearly to the ground, leaving enough buds to grow three or four vigorous canes the next season. Over each plant place a fork full of straw; cover this with two or three spadefuls of earth to keep the straw from blowing away.

If the work the first season has been properly done, we should have vigorous, well-established vines that will the second season make a growth of five to ten feet. Cultivate the second season similarly to the first.

TRELLIS.

Use strong, heavy posts at the end of the rows. We are using posts cut from Osage hedges planted thirty years ago. It is important that the end posts should be very heavy and should be strongly braced, otherwise, during some violent storm, the posts may break and drop the load of fruit to the ground. The remaining posts may be lighter. We prefer to use posts eight feet in height set thirty inches in the ground. It is admissible to use No. 12 wire which is lighter than fence-wire. Continue to trim the vineyard early in November of each year. The vines will remain dormant later in the spring if the covering is removed and vines tied to the trellis about the first of April.

SELECTION OF VARIETIES.

Our market is in Central and Western Nebraska. In this district the trade prefers blue grapes. Buyers are also pleased with large bunches. For such markets the Moore's Early has been found profitable and satisfactory. This variety is not as productive as the Worden or Concord and will not yield as many pounds or baskets to the acre. It, however, ripens comparatively early in the season and has usually brought us the best price per basket.

We follow this variety with the Worden, a seedling of the Concord. The Worden is of excellent quality, but has the fault of sometimes ripening unevenly, and in shipping a considerable distance the berries often fall from the stem. Its quality is better than the Concord. The Concord is the most productive of all varieties so far tested and is satisfactory in color and quality.

Those who desire a white grape will be pleased with the Empire State and Niagara. Those who desire a white wine-grape may plant the Elvira.

Those who desire a red grape of very superior quality may plant the Brighton. Care should be taken to pollinize this variety by planting along side some other blooming at the same time.

At our last State Fair the Woodruff Red attracted attention as a very promising variety. Campbell's Early and Green Mountain are desirable early varieties worthy of trial.

MARKETING.

Most grapes are marketed in the so-called eight-pound basket, holding, when well packed, seven pounds. The best results are secured by developing (1) the local market and (2) distributing the crop to other towns, not otherwise over supplied, within reach. Grapes should be handled with extreme care; baskets should be packed full, lids pressed on and securely wired. We find in our trade that the Nebraska market does not care to pay a high price for such heavy varieties as

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

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World's Premium Seed Corn, HOWARD COUNTY WHITE Awarded first and third premium at State Corn Show in St. Louis 1904, and gold medal at World's Fair in 1904. Has won all premiums wherever shown for the past six years. Hand nubbed and graded, making all grains uniform in size. For particulars address, E. T. LONG, Fayette, Missouri.

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

The Best Fruit Paper is The Fruit-Grower, published monthly at St. Joseph, Mo. The regular subscription price is a dollar a year but if you will write for free sample copy and mention this paper, you will receive a proposition whereby you may secure it one year WITHOUT COST. Every one who has a few fruit trees or a garden, should read

THE FRUIT-GROWER ST. JOSEPH, MISSOURI Every issue is handsomely illustrated and from \$2 to \$4 pages a month are filled with interesting matter pertaining to fruit-growing and gardening. The first four issues of 1906 will be handsome special numbers devoted to the following subjects:—January, The Horticultural Societies; February, Spraying; March, Gardening; April, Small Fruits. Any one of these numbers will be worth a dollar to you. We publish the "Brother Jonathan Series" of fruit books. Send your name and BRO. JONATHAN learn how to secure these books free. Fruit-Grower Co. 169 S. 7th, St. Joseph, Mo.

Brighton, Delaware, and Empire State The market does not seem disposed to pay for extra quality. The average merchant who can purchase Concord for sixteen to twenty cents per basket will not handle Brighton or Delaware and other choice varieties at twenty-five cents per basket. Profits are determined by quantity combined with simple fair quality. The demand for this fruit is very rapidly extending. The market is growing faster than the production.

The cost of establishing a vineyard, including vines, planting, cultivation, posts, wire, and protection is \$80 per acre. The annual yield of our vineyards is \$100 to \$136 per acre. A vineyard located where it could have a local market sufficient to absorb its product should secure larger returns.

"The Fruit-Grower's Wife and Babies and the Automobile."

PAPER BY GEORGE WEST MAFFET BEFORE THE DOUGLAS COUNTY HORTICULTURAL SOCIETY, MARCH 17, 1906.

Of all the modern improvements forcing themselves upon the country dweller most persistently, the automobile takes precedence in that it is a constant menace to the wives and babies traveling with horses upon the public highways. This thing of railroad trains leaving their tracks and racing indiscriminately here, there, and everywhere over the earth utterly oblivious to the rights of others is not to be tolerated beyond reasonable limits.

The highest court in the land has ruled that the automobile has come to stay and that the horse must learn to become accustomed to it. There is a law that antedates this and goes back to the time when primitive man fought for privacy with a shin-bone at his cave entrance; and that is "self-preservation is the first law of nature." Then there is the modern law which holds that one man may not damage another without making good the damage.

The real danger comes from the fact that the horse has not time to make up his mind concerning the approaching auto; the thing is on him like a flash and there is nothing to do but wheel around and run or dash sideways across the gutter and through the hedge or wire-fence. If the autoist would impress this upon his own mind and take the time and care to reassure a timid horse, a few lessons would suffice and soon all the horses would become educated and motor travel be made more pleasant. How the hearts of the horse owners of Lawrence do warm toward Mr. Rutter for his care with the pioneer auto; when needful he would slow down to a scarcely perceptible motion and in a very short time the horses would take no notice of the machine.

The officers of the law in the East have adopted two methods of controlling speed—a station on the boulevard snaps a stop-watch at a second station down the road—if the passing auto exceeds the speed limit, a distant officer is signalled and he heads off and arrests the approaching speeders. The second method is more crude but just as effective—the officer shoots a bullet through the rubber tire; it has been discovered that a bullet can overtake an automobile—about the only thing that can. This latter method rather appeals to the farmer and is no more dangerous to the autoists than is the machine to the driver of any horse. Another method that can be tried

upon the utterly reckless is for each driver of a farm wagon in infested districts to carry upon the seat beside him a short club about thirty inches long and hurl it end foremost into the spinning wheels. If successfully thrown, the auto man who was in such a hurry will find ample time to talk of the weather, and can discuss matters of moment with the driver of the farm team and can make arrangements to get his machine back to town.

But a method, entirely within the law and in the long run effective, is to sue in the courts for the full value of every horse made unsafe by the owner's machine; sue for every injury done to vehicles; sue for any harm which befalls the wife and babies and ask a good round sum in addition for exemplary damages—a jury will give it to you. In this way the motorists will soon find it convenient to be decent and reasonable. For the reckless adopt reckless measures or try a writ of injunction to forever bar them from running a machine.

An automobile running six miles an hour is comparatively harmless. Fifteen miles an hour should be considered high speed. Twenty miles an hour is too high for any motor of whatever nature, except when running on steel rails. An automobile running at fifty miles an hour upon a country road should set the telephones ringing for twenty miles and should be met with a shower of rifle bullets wherever it goes.

After all, until public opinion and needed legislation shall either reduce the speed or drive the automobile from the public highways entirely, the logic of the occasion is for the machine owners to do all that can be done to reassure the timid horses, stop promptly when shown the uplifted hand, signal by horn at road intersections, stop and help in case of accident and offer sympathy and regrets—and more important than all keep an eye far in the distance for the farmer's wife and babies, and dismount and go forward to their assistance if it is needed.

[THE KANSAS FARMER realizes that the provocation is great, but it can not print this paper without reminding the reader that Mr. Maffet is a law-abiding citizen not given to undue use of rifle, shotgun, or club, and not likely to advise his friends to seek to cure any evil by unlawful means. Let every farmer and fruit-grower see to it that the next legislature is pledged to enact an efficient law for the regulation of automobilists.—Editor.]

The 'Phone and the Farmer.

The following extract, from a new booklet issued by the Electric Appliance Company of Chicago, clearly sets forth the many advantages of the 'phone on the farm. It strongly contrasts the old way and the new way of farming, and shows the immense progress made in agricultural lines the past few years.

"Twenty years ago it was considered nothing uncommon to rise hurriedly in the middle of a perhaps cold, stormy night and sally forth for medical assistance, or render some neighbor in distress a needed service.

To-day it is possible for the farmer to answer all demands of a neighborly or social character, transact business at a saving of time and trouble, extend and enlarge his acquaintance, enter into the spirit and activity of town life, and direct his affairs on an absolute surety of success by having a reliable 'phone in the home.

Not a day passes but some trip will be saved; not a day passes but some business transaction will be completed that will be worth the yearly cost of maintaining a good 'phone.

The rural mail service has produced some very radical changes in the social and business life of farmers in general, but the farm 'phone will eventually produce even greater changes by bringing more closely together the progressive people of town and country, whose interests must always be identical—the welfare of the one depending upon the progress and advancement of the other.

Without a 'phone on the farm every errand, little or big, demands the personal attention of some member of the farmer's family, with perhaps a team to carry him, at a loss of time and help, of both. This, too, when work is pressing and every moment means dollars.

On a farm where decided action and quick judgment are needed every hour of the day, the Eaco Farm Telephone is as much of a necessity as any other labor-saving implement on the place. In these days of competition in sales, in being first on the market, the farmer who has not a good, reliable 'phone is, to all intents and purposes, just as well isolated and apart from the actual business of a community as ever Robinson Crusoe was on the desert island."

We can heartily recommend this little book to all who are interested in building a telephone line of any description as it gives a great deal of valuable information about line building, cost of building, etc. A mention of this paper will secure the book free post-paid.

When writing our advertisers please mention this paper.

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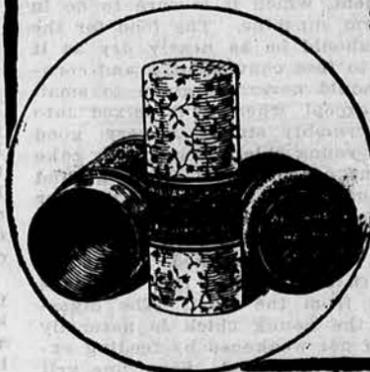
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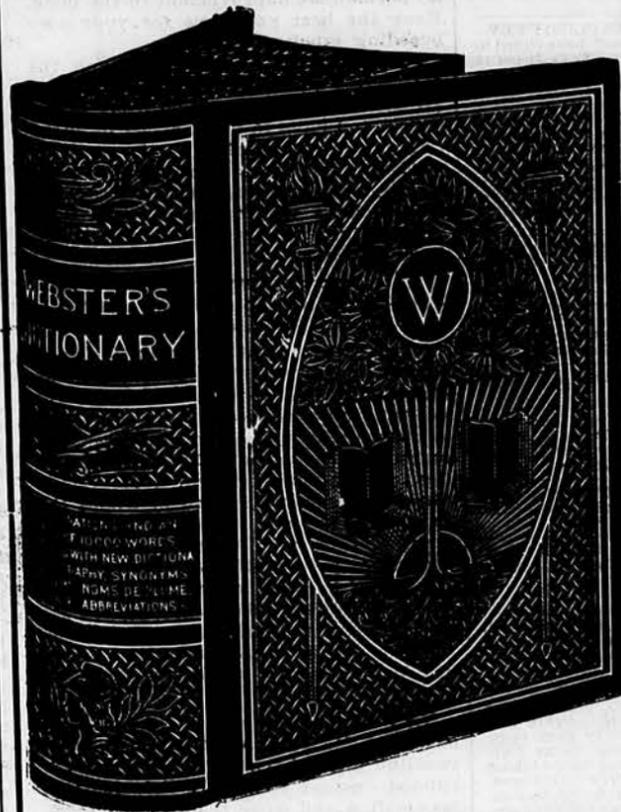
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WHITE FACE BLACK SPANISH—I have for sale some fine males, young or old for fancy breeders from \$2 to \$3 each, and utility birds for \$1 each. Eggs, \$1.25 per sitting. Mrs. Hattie Tyler, Fairview, Kans.

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EGGS FOR HATCHING from large high-scoring M. B. turkeys, \$2 per 9; S. C. and R. C. Brown and S. C. White Leghorns, S. Spangled Hamburgs, S. C. Black Minorcas. Prize-winners in every pen. Eggs, \$1 per 15. Virra Bailey, Kinsley, Kans.

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

LIGHT BRAHMA EGGS from prize-winning birds, \$1.25 for 15; \$2 for 30; \$2.50 for 45; \$5 for 100. Carefully selected. N. Van Buskirk, Blue Mound, Kansas.

EGGS FOR HATCHING from my flock of pure-bred B. P. Rocks. Pulletts scoring 86; flocks headed by males scoring from 90% to 92%. \$1.25 per 15—\$5 per 100. Incubator orders a specialty. Eggs carefully packed. Address Mrs. Chas. Atneworth, Eureka, Kansas, Route 1.

BLACK LANGSHAN EGGS at \$1 to \$1.50 per 15 from Hettich strain of World's Fair winners. Mrs. E. Forward, Bayneville, Kans.

ROSE-COMB BROWN LEGHORN EGGS—For sale; also a few cockerels. Bertha Gresham, Bucklin, Kansas.

IN ALL THEIR BRILLIANCY—Rhode Island Reds, Rose-Comb and Single-Comb. Write for circular describing origin, prices of eggs, etc.; it is free. H. A. Sibley, Lawrence, Kansas.

EGGS FOR HATCHING—From one of the best laying strains of S. C. Leghorns in the West, at \$1 per 15 eggs, both brown and white. Special prices on larger lots. L. H. Hastings, Quincy, Kansas.

BARRED AND WHITE ROCKS—Seventeen years breeder of exhibition birds scoring 94% to 95%. Eggs, \$2 per 15; \$5 per 45. Chris. Bearman, Ottawa, Kansas.

PARTRIDGE COCHINS—Toulouse Geese, pure-bred; farm raised. Eggs \$1 per 13 and 7. Mrs. O. A. Rhoads, R. 6, Columbus, Kans.

CHOICE WHITE WYANDOTTES—Farm range. Eggs 75 cents per 15. Henry Harrington, Clearwater, Kans.

TWENTY-SIX PURE Black Langshan eggs for \$1. Mary McCaul, Elk City, Kans.

BLACK LANGSHANS—Bred by W. F. Cox, Clifton, Kansas. Eggs for sale at \$2 per 15.

STAY WHITE—S. C. W. Leghorns and Buff Rocks. Winners at State Fairs. Eggs, \$1 per sitting. J. W. Cook, Route 3, Hutchinson, Kans.

RHODE ISLAND RED EGGS for sale at \$1.25 per 15 eggs, or \$2 per 30 eggs. Mrs. G. F. Kellerman, "Vinewood Farm," Mound City, Kans.

BARRED PLYMOUTH ROCKS—Exclusively. Eggs, \$1 for 15; \$1.50 for 30; \$4 per 100. T. B. Wilson, Route 7, Osage City, Kans.

FOR SALE—Throughbred Gold-laced Wyandottes. Eggs, \$1 per sitting. H. A. Montgomery, 310 Parallel St., Atchison, Kans.

GOLDEN WYANDOTTES EXCLUSIVELY—My flock of vigorous farm-raised hens culled by Standard to 60. No stock for sale. Eggs, \$1 per 15; \$5 per 100. Mrs. S. Goldsmith, R. F. D. 3, Abilene, Kans.

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

WHITE WYANDOTTES EXCLUSIVELY—Eggs, 15 for 75c; 100 \$3.50. H. F. Brueggemann, Route 2, Herington, Kans.

BLACK LANGSHAN EGGS—From main flock, 15 for \$1.00; 100 for \$5.00; from pen, \$2.00 for 15. Mrs. Geo. W. King, Route 1, Solomon, Kansas.

WHITE PLYMOUTH ROCK exclusively—bred direct from a pen of U. R. Fisher's birds. Eggs for hatching from pen No. 1 \$2 per 15. Satisfaction guaranteed. J. A. Kaufman, Abilene, Kansas.

BARRED ROCK EGGS, \$3 per 100. Mrs. R. A. Galbraith, White City, Kansas.

WHITE PLYMOUTH ROCK EGGS from high-scoring show birds, \$1.50 per 15; \$2.50 per 30. Incubator eggs, \$5.00 per 100. M. B. Turkey eggs, \$3.00 per 11. J. C. Bostwick, Route 2, Hoyt, Kansas.

GREAT BIGS, C. BUFF ORPINGTONS are the winter layers. Eggs \$1.50 per 15; \$2.50 per 30. Mrs. J. R. Cotton, Stark, Kans. 225 Main Street.

VANNATTA'S SINGLE COMB WHITE LEGHORNS—Great layers. Won \$100 Cash at World's Fair. Eggs for hatching. Catalogue free. E. E. Vannatta, Vandalla, Mo.

ONE DOLLAR buys 15 eggs of either Rose Comb R. I. Reds or Barred Rocks from prize-winning stock at the college show. Mrs. A. J. Nicholson, Manhattan, Kans.

FOR SALE—All kinds of fancy pigeons, also Toulouse geese eggs at \$1 per sitting. Pekin and Rouen duck eggs, 18 for \$1. Muscovy duck eggs, 10 for \$1. Turkeys, Peacocks, Barred Rocks, Buff Cochins, Houdans, S. S. Hamburgs, Rhode Island Reds, Orpingtons, White, Buff and brown Leghorns, White, Buff and Silver-Laced Wyandottes, Games, Golden Sea-bright Bantams, Pearl and White guineas, hunting dogs. Poultry eggs 15 for \$1. Write D. L. Bruen, Platte Center, Neb.

WHITE PLYMOUTH ROCKS—12 years breeder of choicest birds. Eggs \$1.50 per 15. Member American White, P. R. Club. J. E. Shinkle, Lakin Kans.

BARRED ROCK EGGS—Pen No. 1, \$1.50 per 15; pen No. 2, \$1 for 15. Mrs. W. A. Shreier, Argonia, Ka

The Poultry Yard

Beware of Wet Foods for Chicks.

It is a mistake to suppose because a chick is small, that it needs to be fed mainly on soft feed. No other one thing causes so many deaths among chicks as wet corn-meal left where they can run into it with their dirty feet, and then leave a large part of it to ferment, which it is sure to do in the warm sunshine. The food for the chicks should be as nearly dry as it can be to feed conveniently, and corn-meal should never be given to small chicks except when it is mixed into a dry crumbly state. A very good feed for young chicks is a Johnny cake made out of corn-meal, bran, ground oats, equal parts, a little leaf meal or dried blood and all mixed with skim-milk. But dry grains such as pinhead oatmeal, millet, cracked wheat or Kafr-corn and cracked rice can be fed to them from the start. The digestion of the young chick is naturally strong if not weakened by feeding exclusively on soft food. Some fine grit and charcoal should be placed where they can get it at will. In fact, some successful poultry-raisers claim that the first thing a young chick should have is grit. An excellent mixture for chicks from one day to six weeks old is four parts cracked oats, one of cracked wheat, two of rolled oats, one-half part of millet, one-half part broken rice, and two parts fine beef scraps. After six weeks old cracked corn can be added to their ration as well as Kafr-corn and whole wheat.

Poultry Pesters.

If one of the boys on the farm takes kindly to the care of poultry, encourage his ambitions by getting him some thoroughbred poultry, or, if you can not afford enough money to start him with poultry, give him enough money to buy a setting of thoroughbred eggs. Many a successful man owes his start in life to the ownership and management of something he "took a notion to" in his boyhood days.

Some people make a hobby of their chickens. Well, there is no higher mission of humanity than to induce men and women to ride some hobby that will make them forget the cares of business for a while each day. Let the hobby be chickens, ducks, turkeys, pigeons, or anything that will take them out into the fresh air and sunshine, away from the enervating atmosphere of four walls and a roof.

One of the real stumbling blocks in the way of successful poultry-raising is the failure to observe the practical method of improvement by selection. Where the best pullets are carried off to market as soon as good prices are offered, and the inferior specimens retained for breeding, it is to be expected that the stock will deteriorate, and new blood is then an actual necessity every year. In this way there can be no permanent improvement in the flock. Keep the best you have for your own breeding stock.

If your chicks disappear, watch the cat, watch your neighbor's cat, watch all cats, and keep them off your premises if you have to plant a few of them. Cats do lots of mischief in the poultry-yard that is blamed on rats. Rats are bad enough, but a cat with an appetite for chickens will do more damage in a week than rats will in a month. Beware of the cat.

Training for the Show-Room and Notes About Exhibition Poultry.

No one feature of an exhibition fowl counts for so much as does the comb and other head points. What might be an otherwise very attractive head is frequently marred by an ill-shaped or crooked comb, or badly formed wattles or ear-lobes. These defects may often be improved. Here is where the experience counts. The working and manipulating of a crooked comb into a straight presentable one, the smoothing out of the wattles, or the flattening down of the ear-lobes becomes as easy to a well-trained manipulator as it does for the surgeon to work into shape any badly formed portion of the face of a child.

This may be done without being accused of faking. A little glycerin or vaseline taken between the fingers and rubbed against the badly-shaped comb may soften and work it into good form. If this is continued for a number of times a defective member may be straightened out and wattles may be improved in the same way. Never be tempted to make use of the knife or scissors to trim or cut in a way that may be apparent to an amateur when

he sees it. There are some slight surgical operations that may be performed in this way that are legitimate, but when it comes to cutting for the improvement of formation, it is seldom, if ever, a successful piece of work for the judge will soon detect it.

Fowls that have feathers on their shanks and feet may be very much improved for the exhibition hall by removing, at least sixty days prior to the exhibition, all the broken, badly-formed or colored feathers, provided they have grown long enough in the shanks and feet to have become hardened, so that the removing of them will not cause a blood flow from the shanks or toes. Old, hard, broken feathers may be removed sixty days prior to the exhibition with almost a certainty that new fresh feathers will have grown in by the time the date of the exhibition is at hand. For the heavy feathering of the large Cochins a little longer time is needed. For others the time mentioned is quite sufficient.

Nothing is better to add luster to the plumage than sunflower seed. We have known Cochins, Brahamas and Langshans to be completely fitted for the exhibition hall with whole corn and sunflower seed. This combination seems to produce long, heavy, fluffy plumage with a fine luster, and plenty of flesh and weight.

Get Rid of Vermin.

Now is the time to be looking after the vermin that through cold weather has more than likely been given the chance to get an excellent start. Even were dust-baths provided the hens through the winter, unless the dust is heated by the sun or in some other way, most hens will avoid it as they do cold water, not caring how full of vermin they get, as placed against the discomfort of that dust-bath. There may be poultry-plants free of vermin, but, if so, it has come about by the utmost diligence and frequent lookout as well as allowing no vermin-infested birds about the premises or new fowls until the newcomers have been thoroughly gone over with vermin-killers.

Sometimes it does seem a mystery where the vermin so suddenly spring from, even brooder chicks showing them. They travel, I am sure, like bed-bugs, on the hunt of desirable rations. The mites will kill the young chicks if they have become so plentiful as to leave the roosts on the hen's bodies, or to infest nest-boxes. Usually they prefer to stay on the roosts, but I have seen them black on hatching hens, therefore, the hen must have brought them. They are dark when in search of food, and red when filled. After feeding they hide away until again hungry, in the crevices of the nest-boxes.

On most farms the great per cent of mortality among young chicks is due to vermin, and this is why one must begin looking out for them in early spring, cutting off the enormous progeny they will bring forth as the warm weather comes on. Nest-boxes and coops, brooders and all fixtures from last year to be used for the new chicks must be thoroughly scalded and disinfected before this year's chicks go into them. The roosts and all parts of the poultry-houses should be scalded, whitewashed, and sprayed with kerosene or carbolic acid. The fowls must be dusted with vermin-killing powder if we want to save the chicks.

So often, when mites are plentiful on the hen or about the chicken-coops, you can not find them on the chicks and wonder why the little fellows droop and die so quickly. And yet, could you look at night and see the bloodsuckers cover the chicks, disappearing at daylight, you would know why the chicks died.

The large lice are the most formidable enemies of the small chicks. It is claimed that but one of these will kill a chick. I know that from two to four will do so, as they have a fashion of crawling under the throat and draining the blood from the large artery located there. If the weather be rainy, the vermin will increase because the fowls can not get to good dust.

In getting ready to set the hen, after seeing that not only the nest-box, but the floor and walls back of her are clean, I sprinkle either ashes, lime, tobacco-dust, or vermin-powder under the straw of the nest, and whether I find those large lice in the fluff above or below the vent or not, I take it for granted that somewhere they may be hiding from me ready to begin work when my back is turned on them, and give the hen an extra good dusting with the powder also. Once or twice I repeat this performance afterward, but not after she has been sitting twelve or fourteen days. If I find the large lice after this about her I wait until the

POULTRY BREEDERS' DIRECTORY.

BLACK LANGSHANS—Hens scoring 88 and upward—headed by 2d and 4th prize cockerels from Kansas City 1903 show. Eggs \$2 for 15; \$2.50 for thirty; special price by hundred. Can fill orders at once. Mrs. C. S. Cross, Fair Acres Farm, Emporia, Kansas.

BARRED ROCKS—40 cockerels, \$2 will buy a good one \$50 pullets, \$1 each, bred by a pure Bradley cock. I have an orchard flock of 50 pullets mated with large, standard males, eggs \$1 per 15; \$5 per 100. A. C. Rait, R. R. 4, Junction City, Kans.

BUFF PLYMOUTH ROCK eggs for sitting, \$1.50 for 15. Jay S. Buck, Oskaloosa, Kansas.

BARRED AND WHITE ROCK EGGS for hatching from choice birds; farm raised. White Rock eggs, 15 for \$1; 30 for \$1.50; 45 for \$2.50. Barred Rock eggs, 15 for 75 cents; 30 for \$1.45; 45 for \$2.10. D. S. Thompson, Welda, Kansas.

WHITE WYANDOTTE EGGS for sale; \$1.50 per 15. Only breed of birds kept. Mrs. John W. Smith, Lawrence, Kansas.

WHITE HOLLAND TURKEY EGGS—\$1.50 per 9. T. J. Sweeney, Route 2, Maple Hill, Kansas.

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

GEM POULTRY YARDS—C. W. Peckham, Haven, Kans. Pure-bred Buff Plymouth Rock eggs, 15 for \$2; 30, \$3.50. M. Bronze turkey eggs, 11 for \$3.

CHOICE B. P. ROCK cockerels and pullets. Collye pups; send for circular. W. B. Williams, Stella, Neb.

EGGS FOR SALE—S. C. W. Leghorns, W. Wyandottes, \$1 per 15. W. H. turkeys, \$1.50 per 9. Embden geese, 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, 317 Osage street, Leavenworth, Kans.

STANDARD-BRED SINGLE-COMB BUFF LEGHORNS—Headed by first prize pen Chicago show 1903 and took six first prizes and first pen at Newton 1904. Eggs \$2 for 15. S. Perkins, 801 East First street, Newton, Kansas.

S. C. W. LEGHORNS AND BUFF ROCKS—Winners at State Fairs. Eggs, \$1 per sitting. J. W. Cook, Route 3, Hutchinson, Kansas.

WHITE WYANDOTTES—Choice cockerels, pullets or hens for sale cheap. S. W. Arts, Larned, Kansas.

BLACK LANGSHAN EGGS—From birds scoring 83% to 95%. \$1.50 and \$2 for 15 eggs. Wm. C. Knapp, Pleasant Hill, Mo.

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

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

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

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

Buff Leghorns S. C. Eggs, 30 for \$1.25, 100 for \$5. John A. Reed, Route 3, Wakefield, Ka.

HIGH CLASS POULTRY Silver Wyandotte, White Wyandotte and White Plymouth Rock Eggs for hatching, \$1 for 15. R. F. Meek, Hutchinson, Kans.

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

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

BUFF ROCK EGGS

Here they are. Good ones. Fifteen for \$1; 45 for \$2.50; 100 for \$5. Orders filled in rotation as received. Eggs ready now. H. M. Stephens, Mauden, Republic County, Kans.

Rose Comb Brown Leghorns EXCLUSIVELY

Farm raised. Eggs, per sitting of 15, \$1. Incubator users write for special prices in 100 lots. P. H. MAHON, Route 3, Clyde, Cloud Co., Kans

ROSE COMB BROWN LEGHORNS AT READING, KAN.

Pure stock. 15 eggs \$1.00; 50, \$2.75; 75, \$4.00; 100, \$5.00. Main flock farm range. Have pen to furnish eggs no relation to stock or eggs sold last year. These are for my last year's customers. MRS. IDA STANDIFERD, "Up-To-Date" Farm.

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Exclusively. (Short's strain.) Farm stock eggs from pen scoring 198, \$2 per 15; \$1 per 15 as they run. Incubator eggs a specialty.

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Indian Runner ducks. Our Wyandottes have been line bred for 20 years and never fall in any company. Our yards are headed by Silver Prince, the 1st cock at the Kansas State Show, and three of his cockerels. Stock for sale. Eggs, \$2 per sitting. Incubator eggs, \$5 per hundred. Duck eggs, \$1.50 per sitting.

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BUFF LANGSHANS

\$4.00 per 13 eggs. White \$2 per 15. Black \$2-\$1 per 15 and \$5 per 100; Buff Leghorns; Orpingtons and Cochins, S. & D. C. B. Leghorns, White P. Rocks, S. L. and White Wyandottes, L. Brahmans, \$1.50 to \$2.00 per 15. Toulouse Geese's eggs 30c each. M. B. Turkeys, \$1.50 to \$2 per 9. Guinea eggs, \$1.50 per 17. Stock strictly the best. Mention Kansas Farmer when writing. J. A. Lovette, Mullinville, Kans.



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Scoring 95 Scored by Rhodes Eggs from selected pen, \$1.50 per 15. Eggs for incubators, \$5 per 100. Mrs. Ida Meier, Route 2, Lincoln, Kansas.



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At the State Poultry Show, Topeka, Kansas, January, 1906, won first and second prizes on cock, cockerel, hens, pen; fourth on hen and pullet. Cockerels all sold. Eggs for hatching, \$1.00 to \$2.00 per 15. Egg circular free. NO STOCK FOR SALE. A. D. WILLEMS, Iman, Kans.

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

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Bronze turkeys. Show Champions, Topeka and St. Joseph, winning ten 1st, three 2nd, two 3d prizes; only 7 birds entered. Barred Rocks, 1st, 3d hen, Topeka, 93 1/2, 92 1/2, 6th cock 90 1/2; 4th pen St. Joseph, 2d hen 92 1/2, 3d cock 81, own 2d cockerel, 93 1/2. Eggs, \$3 per 15; \$5 per 30. M. B. Turkey eggs \$1 each. Cockerels for sale. Pullet breeders specialty. Mrs. W. B. Popham, R. F. D., Chillicothe, Mo.

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

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

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White Plymouth Rocks EXCLUSIVELY.

Good for Eggs, Good to Eat and Good to look at W. P. Rocks hold the record for egg-laying over every other variety of fowl; eight pullets averaging 220 eggs each in one year. I have bred them exclusively for twelve years and have them scoring 94 to 96 1/2, 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.

chicks are all out, then give the hen an extra good greasing with lard. As the season advances one must get more and more careful in keeping the hens rid of vermin.

Of the large kind of vermin there are more than one kind. Some are blood-suckers, some are simply after the oil in the roots of the feathers, while others riot in any filth that may cling to the fowl, but any of them, if allowed access to the little chicks, will turn to sucking blood just as the mites and large head-lice do. If these last are allowed to accumulate in the fluff of the hen to great numbers, they will eventually cause sores and a watery discharge about and from the lower intestines. And anyway, who wants eggs to eat from such infected hens? It is nothing but pure laziness to allow hens to get so full of parasites, and if allowed to go on a nest of eggs in such misery, they will break many of the eggs because of the uneasiness the vermin causes them, and smash half the chicks that come out for the same reason.—Ida M. Shepler, in Twentieth Century Farmer.

Making a Stand Against Lice.

My losses a dozen years ago from lice and mites were rather heavy, but the past few years I have not been troubled much, as I do not let the vermin get a foothold. In the first place I keep everything clean and use plenty of fresh air, I dust the fowls regularly with lice powder and use plenty of whitewash and paint the roosts with disinfecting liquid. On the young chicks I use a preparation of my own for head-lice. A little lard about the size of a pea rubbed well on the back of the head of chicks will kill lice. From my point of view it is the operator's fault if he has lice and mites in such numbers as to make poultry-raising a failure. All plants have more or less of these vermin, but they can be kept down if the operator wants to and will make a stand against them.—D. Lincoln Orr, in Farmer's Review, Orange County, N. Y.

Good Shell Material.

A great many people forget that the modern hen produces several times as many eggs as the ancient hen that was the progenitor of the one we now have. That hen laid thirty or forty eggs a year and had no trouble to find the lime in the natural food. But it is a very different matter when a domestic fowl must produce good shell material out of her food for two hundred eggs during the year. The modern hen probably eats no more lime in her food; therefore, the farmer that does not provide important supplies of lime will have trouble with his flock. The eggs will have thin shells and there will be many soft-shelled eggs which will be a temptation to the poultry to begin egg-eating. It is easy enough to furnish the material if one does not forget. The professional poultryman never forgets; but the farmer does because poultry with him is merely a side issue.

Keep an old gander if you would protect young chicks from their enemies in the shape of dogs, cats, crows, and magpies. The gentleman will be found of great use, shifting all objectionable characters with commendable promptness. Not only will intruders be smartly looked after, but the gander will make as much noise as possible while performing his duty, thus giving the poultry-keeper and game-rearer warning when all is not right.—Exchange.

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Dairy Interests

The Profitable Dairy Cow.

PROF. C. S. PLUMB, OHIO STATE UNIVERSITY.

Some years ago a young man named John Winslow graduated at an agricultural college. He was born and reared on a New England hill farm. There his father won a living for the family, in the main, from the keep of a herd of cows, the milk of which was sold to a nearby creamery. It was slow work, for the profits were not large, but they made a living.

The young man had a love for the country and the farm home. He had received a district school education, and gradually the idea had crystallized in his mind that he needed more education. His attention was directed to the agricultural college. An investigation convinced him that this was the type of institution that would enable him to become a broader, brainier, and more capable farmer. Ambition, health, work brought him through college. The four years passed by rapidly, and once again he was back on the farm.

But this was a different young man returning to the farm from the 'callow youth who had gone out from Rockdale four years before. His intellectual forces had strengthened and his capacity for grasping and solving problems had rapidly grown. His father soon realized that the young man of 22 was no longer a boy. He was a man whose judgment he could rely upon.

On various occasions during his college life, when visiting home, John had looked over the herd, and the thought gradually grew upon his mind that the cattle in the stable were not what they should be. In his Junior year he had taken a course of instruction, which involved a term of work studying breeds of live stock, another term was partly devoted to the principles of breeding, and the subject of feeds and feeding occupied several hours a week the third term. All through this year of study, he had been given practical work in judging live stock. His father owned a dairy herd, and the instructor in animal husbandry in the college had been teaching him important lessons, which in his opinion had a direct application to the conditions at home.

PRACTICAL TRUTHS TAUGHT.

What were some of the real practical truths that he had been taught leading up to success? He had learned by repeated illustrations, that like produced superior offspring; that no great breeding that was a part of the creed of every great breeder; that poor animals mated produced poor animals; that sires from superior ancestry produced superior offspring; that no great breeder had ever risen to heights of eminence and built up a great herd, excepting by weeding out the inferior and breeding to superior; that pedigree was worth nothing unless backed by constitution and individual merit; that no man could be regarded as an intelligent breeder who did not breed on the basis of a knowledge of some of these things.

The laboratory or practical work in judging in those college days commended itself to John in no uncertain manner. There was a large room in one corner of the cattle-barn. Tanbark covered the floor. Here the instructor brought his class of young men. A cow was brought in. The students were instructed in the various points which go to make up the animal form, and their relative importance to each other. They were told what the ideal, mature cow of this kind should resemble. Then they were requested to take blank score-cards and judge and score the cow before them, and see how she would compare with the ideal described. That was not easy the first day, but more practice smoothed the way. Finally several cows were brought into the room and were ranged up side by side, and the class was directed to judge and place them in their relative order of merit. That is just what the judge did at the county fair, only he was obliged to give a written explanation on a specially prepared sheet of paper, as to why he placed those cows in the positions he did. Then finally the instructor placed them as he thought they should be, which was followed by a discussion of the placings of both students and teacher. That sort of thing was interesting, and John saw a connecting link here between this college work and the home herd.

There was a most important phase to this study of stock. As the lessons continued, it was pointed out that there

were different types of cattle that had gradually developed into high degrees of perfection, each in its class. This was beautifully illustrated on one occasion when this subject was first discussed. Three cows were led into the room, each quite distinct in type. One was spare of flesh, in fact her ribs showed somewhat, but she had a big body, rather short, clean-cut handsome legs, a thin fairly long neck and a gracefully turned rather short head. Back between her thin, muscular thighs below a broad, level rump, was suspended an immense udder, shaped like a half moon, while extending along the belly away from the udder were two big milk veins, twisted like a snake, remarkable in their development. The instructor told the class that such an udder should extend well forward along under the belly and up high behind the thighs, be level below and thick with four medium-sized teats one at each corner of the udder, and when milked out it should shrink up and feel mellow and pliable in the hand. This was a cow of the true dairy type, just a grade, but she was rarely beautiful John thought. And when she was milked out before the class, all that striking fullness disappeared and a shriveled, wrinkled udder one-half the original size was in its place. He had never seen such a cow as that at Rockdale. Alongside of her stood a broad-backed, deep-bodied cow, full and thick in bosom and hind quarter, short of leg and strong of neck. She was smooth and rather fleshy, and her udder was not important, but she would cut some great steaks. Then he was taught that this was a cow of the beef type, given to converting food into meat as the dairy cow did hers into milk. Then there was a third cow, neither lean nor fat, sort of half way between the other two, with a fairly large udder, that they were informed was a "dual purpose cow." As this young man from that mountain farm compared these cows, and as he later on came to be more and more acquainted with the details of difference, he began to feel that the herd at home was far, far from its profitable possibilities.

There were other lessons taught at this agricultural college that bore much on future problems to be solved. The college instructor in dairying required the students to test the cows of the college herd occasionally. They were obliged to take samples of the milk of each cow of the herd at each milking for a number of days in succession, and find out how much fat there was in the milk, so as to compare values. Here John learned that two cows might be giving exactly the same amount of milk though that of one contained twice as much butter-fat as the other. As creameries paid for milk on the basis of its butter-fat content, he soon saw that quality as well as quantity was an important consideration with milk-production. Thus as he attended his daily duties about the college, he came to see that success on that dairy-farm was dependent on several things, each important in itself.

These were some of the things taught this young man during the four years prior to his home-coming, and their value was never underestimated by him. Not long after his return his father gave him a half interest in the farm, and he settled down in a partnership full of anticipation of the future.

THE ROCKDALE HERD.

There was in his herd at Rockdale 16 native cows. They were just common, plain, everyday scrubs. John's father fancied some of them mightily, but he was not fortified by facts in this position. One day the junior member of the firm came home with a spring balance. He proposed to begin weighing the daily milk-yield of each cow. He knew it would not take much extra time, and they would learn something of what the cows were doing. The senior member smiled, but thought it a harmless pastime.

John said, "Father, we don't know enough about what our cows are doing. Do you know that records show that the average dairy cow in this State produces only 150 pounds of butter a year? There have been some mighty interesting investigations made by some of our experiment stations, which prove that we dairymen have some truths to learn that we should have learned long ago. Now, for example, the Illinois Experiment Station years ago, published a bulletin giving records of individual cows on eight farms in that State. It showed that there were 144 cows in these eight herds of a year's test. One herd made a net loss of \$4.54 on each cow, some made a small profit, and one got good

FACTS COMMON SENSE

THE BIG TRUTH STICK

SMASHES WORTHLESS SEPARATORS

EASY OR HARD WHICH FOR YOU

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

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

Very respectfully,

BLUE VALLEY CREAMERY CO.,
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Peerless Cream Separators

Reasons Why the PEERLESS is the Best



- 1st—Twice the capacity of any other bowl. That is to say two times smaller than any other bowl of equal capacity.
- 2d—Compound feature, two bowls in one, hollow bowl, and disk bowl, combining all the features of the tubular and disk machines.
- 3rd—Enclosed frame. Free from dust. Injury resulting from machine impossible.
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- 8th—At normal temperature the skimmed milk will always show less than 5-100 of 1 per cent of butter-fat and generally less than 1-100 of 1 per cent butter fat. PEERLESS CREAM SEPARATORS are guaranteed to anybody—everybody, anywhere—everywhere.

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Not in buying a cream separator. You can't afford to get a machine that needs constant repairs, or one that turns hard, or one that wastes cream, or one that breaks up the butter fat and produces poor cream, or one that is hard to wash—one that makes work for the good wife. You can't afford it. You need not do it. Get an



Omega Cream Separator

on trial and find out for yourself whether or not the claims we make for it are true. It produces better cream, it causes less bother, it saves more work, it is easier on you, in every way than any other cream separator made. Try it and see. That's all we ask.

A Trial Costs You Nothing.

And after you try it on your own farm you know for sure how easily it runs, how close it skims, how easily it is cleaned. Send your name today for trial offer and catalog.

This Book Free to You.

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

The Omega Separator Co.,
23 Concord Street,
Lansing, Mich.

results. Just think, six of these eight herds had cows that did not pay for the food they consumed. They found all sorts of records among these cows, but the one that had the best showing gave 8,949 pounds of milk and made 472 pounds of butter, while the poorest cow produced only 1,482 pounds of milk, which yielded but 68 pounds of butter. The average production of butter of seven of the herds was only 202 pounds a year, and I don't see how there is any money of importance in it for us if we can't beat that sort of record. So I propose to find out what our cows are doing."

It wasn't long before the whole family had begun to study the daily milk-sheet. The days crept by, and the milk record grew more and more interesting. Finally John proposed buying a Babcock fat-testing machine, and testing the milk of the individual cows for butter-fat content. They had tested the herd milk at the creamery, but this was not enough. This innovation came in more easily. The fascinating and suggestive work of the scales was emphasized by the Babcock. The months rolled by, and all the time John was investigating and thinking. Bill Brown, their nearest neighbor, didn't take any stock in such foolishness, and he knew the Winslow family would land in the poorhouse yet. He was just waiting for that joyful day, when he might say, "I told you so."

You remember that John learned something of dairy and beef type when in college. After he graduated, Prof. Haecker, of the Minnesota Experiment Station, wrote a bulletin which contained a record of his researches on dairy-cattle, in which he showed that cows of the dairy type had a special value over the other sort. This bulletin laid on the dining-room table, and the old gentleman picked it up and began to glance over its contents. There were some pictures in it, and these caught his eye. They represented cows of different types. Then he began to look over the contents of the bulletin. Finally he said, "John just look here. You know you have talked to me about this form business with cows, but it never struck me as amounting to much. But this man Haecker seems to have a pretty good bit of evidence here, that there is some meat in the cocoanut. He has been feeding some cows out there at the Minnesota Station, and he kept a record of every bit of food they ate and of all the milk each cow made and of the butter-fat in her milk. My, but that was a big job though. Now, he has divided up his herd into those with dairy type and those of general-purpose type, and this is what he shows they have done. He had 20 yearly records for each class. The dairy-type cows produced an average of 7,876 pounds of milk and 430 pounds of butter. The general-purpose type produced an average of 6,035 pounds of milk and 295 pounds of butter. In this book here, he says, that by valuing the skim-milk at 15 cents per hundred and

allowing one-eighth the milk for cream, there is an excess of \$2.42 in favor of the dairy-type cow for skim-milk, and allowing 16 cents for butter, the 135 pounds gain of the butter of this type gives a further gain of \$21.65. Adding this to the \$2.42 gives a total of \$24.07 in favor of dairy over general-purpose type. He also found that the fatter the cows were, or the less belly they had, the less money there was in them. Guess we'd better look into that, John."
(To be continued.)

The Feed and the Quality of Milk.

I find in a recent number of the Rock Island Enterprise a statement as follows:

"It seems that a number of dairy farmers here are laboring under the impression that the class and quantity of feed has a great deal to do with the percentage of butter-fat in the milk. Dr. G. A. Foote, M. Mortensen, K. U. Westurterps, and others who have made a scientific study of the matter say this is a mistake; that you can only get a certain percentage of butter-fat no matter what you feed, and the only way to increase the amount of butter-fat is to increase the quantity of milk."

Please tell me through your paper whether this is correct.

E. J. KNOWLLOY.

Rock Island, Texas.

Butter-fat can only be fed into cows by increasing the yield of milk. The per cent of fat can not be increased materially by the class or quantity of feed. If this were not true, Holsteins could be made to give Jersey milk by feeding them oil meal, bran, and alfalfa, and Jersey milk could be reduced to from 5 to 3 per cent by feeding prairie hay, sorghum, and silage. This is entirely out of reason and scientific experiment.

The per cent of fat in the milk of any cow depends on her individuality. If it comes natural to her to give a large quantity of 3 per cent milk on full feed, she will only give a smaller quantity of 3 per cent milk on less or poorer feed. No two cows in any herd give exactly the same per cent of fat in their milk, although they may receive the same amount of the same kind of feed.

C. W. MELICK.

Kansas Experiment Station.

Septic Tank for Liquid Manure.

Before next winter this farm may be feeding 10 or 12 milch cows, and I shall endeavor to use all the stable manure and possibly, by building a cement floor and cistern, save and use all liquid manure. The best way of building a cow-barn and cistern and for utilizing this liquid manure. I have yet to learn, so am open for instruction. There is no barn-yard here yet. The pasture is close up to the barn. The rains drain away down the hillside the best of the stock-droppings.

FRANK S. GRISWOLD.

Johnson County.

Your letter regarding the utilization of liquid manure, which has been referred to me, can best be answered by referring to the use of a septic tank. This tank is so constructed below the surface of the ground that all of the liquid may drain into it from the bottom. It is made of cement similar to a cistern and will retain the liquid until forced to an over-flow spout by the inflowing matter. It is made with two or three separate divisions, with an over-flow in each so as to retain each day's inflow for at least 48 hours. By this means most of the organic matter is decomposed by the aid of bacteria of various kinds, and rendered soluble and ready for use by plant life. The organic matter is thus turned into the most profitable fertilizer known, besides being useful for irrigation. The liquid thus passed off, if the tank is working satisfactory, ought to be almost clear.

A septic tank should purify sewage 40 or 50 per cent, that is, it should decompose organic material to that extent. The chief benefit of the septic tank, however, is that the liquid passing through it is much more easily utilized for it contains no solid material to clog the irrigating pipes.

C. W. MELICK.

A correspondent expresses some uneasiness lest, when every farmer goes into dairying instead of raising corn and wheat, the price of dairy products shall decrease so much as to leave no profits in dairying. That condition does not yet appear on the horizon. Dairying has the advantage of affording quick returns and, where good cows are used, liberal profits. It is an exacting business, however, and can not well be entrusted to the exclusive care of hired help. Milking must be done twice every day. Profits depend upon careful and competent milking and judicious feeding. Until an efficient milking-machine

IMPORTANCE OF BUYING CREAM SEPARATORS THROUGH LOCAL AGENTS

This heading voices a most important consideration in the purchase of a Cream Separator, and points a most serious objection to the purchase of such a machine by the "mail order" method, even if good separators were sold in that way.

While the Creap Separator is a simple machine when once understood, it is nevertheless of the greatest possible importance that it be set up and started just right, and that the user have the brief personal use instruction necessary in its handling and operation. If not it may mean several years of difference in the life of the machine and a good many dollars of difference in the results from its use.

Then, no matter how carefully used, things do happen even to the best of separators. It makes a lot of difference if you have a competent man near at hand to tell you just what is wrong and how to fix it. It makes even more difference to be able to get necessary repair parts right and quickly instead of having to send off to some distant concern for them which only sells machines somebody else makes and whose employees would not know a separator if they saw it and the parts for which are more likely to be wrong than right when you do finally get them.

All this is the business of the local agent of DE LAVAL machines. It is just what he is expected to do for users. Of course he makes a small commission out of it, but the user can mighty well afford to pay that commission and it would be a big mistake to try to save it even in the purchase of a good separator. It is still more so in the purchase of the kind which is sold in the "mail order" way.

The buyer of a Cream Separator should never lose sight of the big DAILY difference in dollars-and-cents results between the good machine and the poor one. A DE LAVAL catalogue to be had for the asking helps to make plain these differences.

THE DE LAVAL SEPARATOR CO.

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U.S. Cream Separator

Osceola, Ia., Jan. 15, 1906.

After trying different makes of cream separators I decided to buy a U. S. as it is the easiest to clean, built most solid, and I believe will last me as long as I live. Have had my separator over two years, and it has made me \$20.00 more a year per cow than I made before. I figure that my calves raised on U. S. Separator skim milk pay for keeping my cows.

The cream is clear profit. I make over \$40.00 a cow clear a year. I don't feed any grain, so I consider I am doing well. If I didn't have over 12 cows I believe I could get good interest on my investment if I had paid \$500.00 for a U. S. Separator. I keep books, so there is no guess-work about it.

T. G. Armstrong."

What the U. S. has done for Mr. Armstrong it will do for you. Write NOW for a copy of our big handsome 1906 U. S. Separator catalog which tells how and why. Address—

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U.S. Separator skim milk makes stock pay



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The Cleveland has the fewest parts of any separator made in the world. The fewer parts in a separator the less wear—the less repair.

Easy to Clean Because—

The fewest parts and the Cleveland skimming device made of aluminum. We were the first

to apply this wonderful metal to this use. It is non-corrosive, non-poisonous, has no coating to wear off and milk will not stick to it.

The Selling Plan:

30 days approval test in your own home under your own conditions. You don't need to take our word. Try a Cleveland, the guaranteed perfect skimmer. It won't cost you a cent to be sure. You try one in your own home without putting up one cent in advance. The new free catalog tells you how. Write for it.

The Cleveland Cream Separator Co. Dept. A, 24 Michigan Ave., N. W., Cleveland, O.

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Upon the advice of several specialists I am going to New Mexico for my health. On this account I must dispose of all my Kansas property, including the famous Walnut Grove farm, the most complete and profitable stock farm in Kansas. This includes 120 acres of the best land in Kansas, two miles from Emporia. Over 200 good O. L. C. hogs. All our Banded Plymouth Rocks, 36 Colliers, 44 head of cows, 8 head of horses, the best farm house in the State. Also one small farm house, 2 large barns, 2 large cattle-sheds, one 300-foot hen house, one 250-foot broiler house, 20 brooder houses, capacity of plant, 4000. The best hog house in the West, double-deck cement floors; many small hog houses. This is not an experiment, but a successful stock farm. Price, \$20,000 cash.

H. D. NUTTING, Emporia, Kans.

shall be introduced, there will doubtless continue a disposition to abandon dairying, however profitable, and to engage in some less exacting kind of farming as soon as the farmer feels able to sacrifice the ready income afforded by the dairy. On this account, as well on account of the constantly increasing demand of the markets for dairy products, there is little probability that dairying will soon be overdone.

Weekly Weather Bulletin.

Following is the weekly weather bulletin for the Kansas Weather Service, for the week ending April 9, 1906, prepared by T. B. Jennings, station director:

NOTE.—Beginning with the present issue, the first for the season of 1906, this publication will be known as the WEEKLY WEATHER BULLETIN of the Kansas Section of the Climatological Service of the Weather Bureau. It succeeds the Weekly Crop Bulletin series heretofore published in this form. The crop feature is omitted, but the weather data are given in greater detail.

CLIMATOLOGICAL DATA FOR THE WEEK WESTERN DIVISION.

Table with columns: Stations, Temperature (Max, Min), Precipitation (Inches). Rows include Colby, Coolidge, Farnsworth, Norton.

MIDDLE DIVISION.

Table with columns: Stations, Temperature (Max, Min), Precipitation (Inches). Rows include Clay Center, Eldorado, Ellsworth, Republic.

EASTERN DIVISION.

Table with columns: Stations, Temperature (Max, Min), Precipitation (Inches). Rows include Fort Scott, Independence, Manhattan, Yates Center.

GENERAL CONDITIONS.

The weather the past week was an agreeable change from that prevailing during the preceding month. Under the influence of an area of low barometer the temperature over Kansas was raised considerably and the highest temperature for the season was experienced in the

cloudy. The highest was 83° on the 2d and the lowest 33° on the same date. Barton.—Rain fell on the 2d, 3d, 4th, 5th, and 7th. The first of the week was clear, the middle part cloudy and the last part was partly cloudy. It was very cool on the 4th but warmed up some towards the close of the week.

Clay.—The first and last of the week were warm and the middle part was cool and rainy. There was rain on the 2d, 3d, 4th, 5th, and 7th.

Cloud.—Showers fell on the 3d, 4th, 5th and 7th. The highest temperature was 76° on the 6th and the lowest 35° on the 4th. The 1st, 5th, and 6th had considerable sunshine but the other days were cloudy and damp.

Cowley.—Rain fell on the 3d, 4th, and 7th. The highest temperature was 75° on the 2d and the lowest 37° on the 6th. The middle of the week was cool, damp, and unfitted for outdoor work.

Ellis.—Much sunshine during the week. 1st, 2d, 6th, and 7th warm days, 3d and 4th cold and rainy; good shower on 7th; hurricane, wind, and storm of dust afternoon of 7th.

Ellsworth.—Rain fell on the 3d, 4th, 5th and 7th, and on these days the weather was very disagreeable.

Harper.—Rain fell on the 4th and 7th. Harvey.—The weather has been cloudy most of the time and very damp and rainy; over an inch of rain has fallen.

Jewell.—Rain and cool, damp weather prevailed on the 3d, 4th and 5th; the other days were clear and warm. The highest temperature was 77° on the 6th and the lowest 33° on the 3d, 4th and 5th.

Kingman.—The first of the week was clear, the middle part cloudy and damp and the last part was partly cloudy. Rain fell on the 3d, 4th, 5th and 7th. The highest temperature was 74° on the 2d and the lowest was 30° on the 4th and 5th.

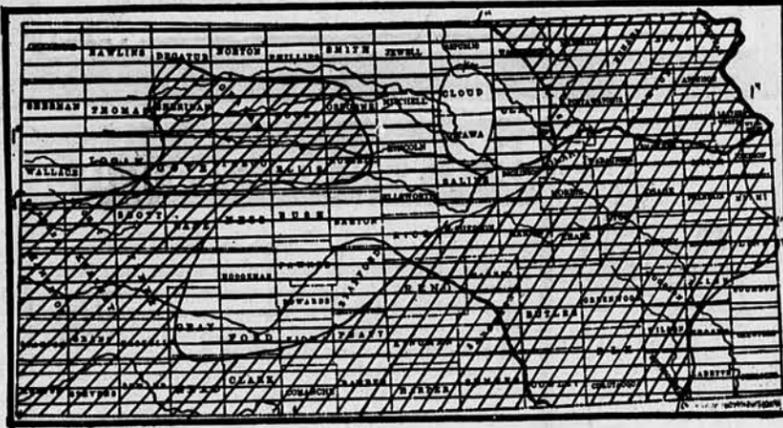
Osborne.—Rainy disagreeable weather prevailed on the 3d, 4th and 7th. The forepart of the week was clear and pleasant.

Pawnee.—The first of the week was fine and clear, but the middle and latter parts were mostly cloudy with showers on the 3d, 4th and 5th. The thermometer rose to 76° on the 2d, but the minimum temperatures were in the thirties all week.

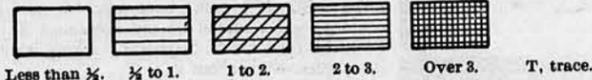
Pratt.—Rainy, damp weather prevailed on the 3d, 4th and 5th. Maximum temperatures the first and last of the week were in the seventies, but the minimum temperatures ranged in the thirties the middle of the week. The moisture for the week was excessive.

Reno.—Showers fell on the 3d, 4th, and 5th and a trace of rain on the 2d. There was no sunshine on the 3d and 4th but the first and last days of the week were clear and pleasant. The lowest temperature was 35° on the 4th and 5th. On the 4th the maximum did not rise above 43°, but on the 6th occurred the highest temperature of the week, 73°.

RAINFALL FOR WEEK ENDING APRIL 7, 1906.



SCALE IN INCHES:



western counties. This was followed by falling temperature, cloudy weather and rain, causing Wednesday to be the coldest day of the week. With the passage of the area of high barometer and the maximum temperature much warmer. Friday the weather became much warmer and the maximum temperature in the middle and eastern counties for the week generally occurred that day. Under the influence of an area of low barometer, central in Colorado on Saturday morning, showers were general in this State Saturday and the following night. The minimum temperatures for the week were below freezing in the extreme northern and western counties.

CONDITIONS IN DETAIL.

EASTERN DIVISION.

Allen.—The week was warm, the 2d and 5th being the warmest days while the first was the coolest. The 1st and 2d were clear; the 3d, 4th and 7th cloudy and rainy and the 5th partly cloudy but rainy.

Bourbon.—We had much sunshine and two rainy days; good growing weather.

Brown.—A fine week; the lowest temperature, 23° occurred on the 1st and the highest, 72°, on the 2d and 6th.

Chase.—The weather has been rather damp with three rainy days. The day temperatures were warm on the 2d, 3d and 6th.

Coffey.—The 1st and 6th were clear, the other days cloudy and rainy, yet the weather has been good for vegetation.

Crawford.—This has been a warm, pleasant week with a fair amount of sunshine.

Greenwood.—This has proved the first good growing week of the season, being warm and damp with a fair amount of sunshine.

Johnson.—The week has been cloudy with four rainy days.

Linn.—With three clear days, four cloudy days, and three rainy days, the weather has been good for vegetation.

Lyon.—Though the temperature reached 70° on three days yet the week has been cold and wet, the minimum temperature falling below 40° on four days.

Montgomery.—The weather conditions were normal; the rain on the 4th and 5th delayed work but was needed to soften the ground. The week closed with cloudy weather and more rain.

Riley.—With rain on six days, frost on one and the minimum temperature below 40° daily, the week has not been good for the growth of vegetation.

Wilson.—The past week has been warm and springlike with much sunshine. Rain on two nights and one day was very beneficial.

Woodson.—The past week was a better growing week than we had had yet this spring. Three days with good rains and a fair amount of sunshine have been beneficial.

Wyandotte.—While the week has been warm, it has also been wet, rain falling every day but one. Six days were cloudy and the other one partly cloudy.

MIDDLE DIVISION.

Butler.—The 1st, 2d, and 6th were clear; the 5th partly cloudy and the remaining days

Republic.—Only one clear day this week, the rest of the week was cloudy and showery. Frost was observed on the morning of the 6th. There has been plenty of moisture to soften the ground.

Republic.—Showery weather occurred on the 3d, 4th, 5th, and 7th. The 1st, 5th, and 6th were clear and warm, the third and fourth were very cloudy with low maximum temperatures.

Russell.—The highest temperature was 74° on the 3d and 7th and the lowest was 33° on the 4th; the days during the middle of the week were unseasonably cool. Rain fell on the 4th, 5th, and 7th.

Salina.—Good showers fell on the 3d, 4th, 5th, and 7th and moistened the ground thoroughly. The 1st, 2d, 6th, and 7th were warm days, the warmest being the 6th.

Smith.—The weather has been favorable for the growth of vegetation. Plenty of rain has fallen and there were four days with considerable sunshine. Rain occurred on the 3d and 7th.

Sumner.—The rainfall for the week was excessive and the ground is now thoroughly soaked. Rain fell on the 3d, 4th, and 7th. The highest temperature was 76° on the 2d and the lowest 33° on the 6th.

Washington.—The 2d, 3d, and 6th were warm and pleasant, the 4th and 5th were cloudy and disagreeable with low day temperatures.

WESTERN DIVISION.

Decatur.—With the exception of the 4th the days have been warm, but the nights have been cool; the temperature falling to 23° twice during the week, until the nights of the 6th and 7th which were warm. We have had much sunshine this week and three cloudy days with rain.

Ford.—Fine rains, an abundance of sunshine and five warm days out of the seven characterized the week. The fourth was a cold day.

Gove.—A fine rain this week with some high temperatures, quite beneficial to all interests. The fourth was a cold day however.

Gray.—With the exception of the 4th, which was a cold day, the weather this week has been quite springlike. Three clear days and three rainy days with one thunderstorm have occurred this week.

Hamilton.—The 1st, 6th, and 7th were quite warm days; the night of the 2d, 4th, and 5th were cool, those of the 4th and 5th being cold. Four clear days and three cloudy days have occurred, the cloudy days being also rainy days; but the weather has been beneficial.

Lane.—The first part of the week was very warm followed by a good rain on the 3d and 4th and cold weather on the 4th and 5th, the minimum falling to 23° on the morning of the 5th. The temperature rose rapidly after the morning of the 5th.

Norton.—Considerable moisture has fallen during the past week which has been absorbed by the soil. The wind has not been high and was generally from a southerly point. Some high temperatures occurred, though the 4th was a cold day.

Scott.—Considerable temperature variations have occurred the past week. On the 1st the thermometer ranged from 35° to 80°, and on the 4th it ranged from 31° to 35°; high tem-

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TOPEKA, KANSAS

JUST ISSUED

Farm Grasses of the United States

By W. J. SPILLMAN

Agrostologist, U. S. Department of Agriculture

An intensely practical discussion of the farm grasses of the United States of America is presented in this volume. It is essentially a resume of the experience of American farmers with grasses, and it is safe to say that no other work has covered the ground so thoroughly. No attempt has been made to give a connected account of all the grasses known in this country, but the aim has been rather to give just the information which a farmer wants about all those grasses that have an actual standing on American farms. The whole subject is considered entirely from the standpoint of the farmer. One of the most valuable features of the book is the maps showing, at a glance, the distribution of every important grass in the United States; and the reasons for the peculiarities in this distribution are fully brought out. The principal chapters treat on the grass crop as a whole and the relation of grass culture to agricultural prosperity, meadows and pastures, the seed and its impurities; the bluegrasses; millets; southern grasses; redtop and orchard grass; brome grasses; grasses for special conditions; haymaking machinery and implements; insects and fungi injurious to grasses, etc., etc. The methods followed on some pre-eminently successful farms are described in detail, and their application to grass lands throughout the country is discussed. The discussion of each grass is proportional to its importance on American farms. This book represents the judgment of a farmer of long experience and wide observations regarding the plan in agriculture of every grass of any importance in American farming. In its preparation its use as a text book in schools as well as a manual of reference for the actual farmer has constantly been kept in mind. The book is most conveniently arranged and splendidly indexed, so that the reader may find any subject at a glance. Illustrated, 5x7 inches. 248 pages. Cloth. Price, postpaid, \$1.00.

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peratures prevailed the first and last days of the week. There were four clear days and three cloudy days. Rain fell on the 3d, 4th, and 7th, with hail on the 3d and sleet on the 4th.

Stevens.—Much cloudy weather and considerable rain occurred the past week. The first and last days of the week were quite warm, the 4th and 5th cool; the minimum temperature, 29°, occurring on the 5th.

GIFFORD'S SHORTHORNS 22D ANNUAL SALE FROM ELMWOOD FARM WILL BE HELD AT Manhattan, Kans., on April 25, 1906, in the Sale Pavilion

20 extra good red Scotch-topped bulls from 12 to 20 months old, all in fine condition, sired by Red Gauntlet 3d 147509, a Cruickshank bull of exceptional quality. Twenty of the best young cows and heifers ever offered from the herd, all bred to Scotch bulls Senator Bruce 226244 and Cordelia's Knight 161501 (the best son of Red Knight). Cordelia's Knight will be included in the sale, is sound and all right, and a great breeder. This will be the place to get a choice bull or a few good cows to start with. Come to the sale and bring your friends. For a catalogue address

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This offering will consist of several cows sired by the great sire, Anxiety Monarch 63204, whose get has been very prominent at the leading shows of the West the last six years. Some of these cows will have calves at foot and bred again. Also blood of the great Ancient Britton and Vincent 2d 42942, both World's Fair winners in 1893. Some choice young bulls sired by Beau Donald 28th, the great sweepstakes winner and sire.

THE CATTLE WILL BE CONSIGNED BY THE WELL-KNOWN BREEDERS P. M. MORSE, Beaver City, Neb.; W. R. WONDERLY, Inavale, Neb.; R. N. LEWIS, Blades, Neb.; HATFIELD & SON, McCook, Neb.; W. N. ROGERS, McCook, Neb.; BRITAIN & SON, McCook, Neb. and others

Auctioneers: T. C. CALLAHAN and others; For Catalogue address, W. N. Rogers, Manager

KANSAS FARMER.

Established in 1868.

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

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"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.

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FOR SALE—Some good young Shorthorn bulls just a year old by the 2800 pound Marshall Abbotts-burn 3rd 185305. Cheap, breeding and individual merit considered. D. Ballantyne & Son, Herington, Kans.

HOLSTEIN—Bull calves 6 and 10 months old—good ones. H. B. Cowles, Topeka, Kans.

REGISTERED Aberdeen-Angus cattle for sale. Fifteen bulls from 10 to 20 months old; 15 heifers from 1 to 2 years old; 15 heifers from 2 to 3 years old; 25 cows some with calves at side. I am making farmers prices on all or a part of the above cattle as I do not have room for them this summer. Heather Eclipsen 38761 in service. A. L. Wynkoop Bendena, Kans.

FOR Red Polled bulls or heifers write to Otto Young, Utica, Kans.

FOR SALE—Holstein-Friesian bull calves. Address Hughes & Jones, Route 2, Topeka, Kans.

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

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

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

CATTLE.

FOR SALE—One roan and two red yearling registered Shorthorn Bates bulls. Splendid individuals. C. G. Cochran & Sons, Plainville, Kansas.

RED POLLED BULLS—Five bulls 9 to 12 months old, for sale cheap. Nice ones, registered. H. L. Pellett, Eudora, Kansas.

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

PURE SCOTCH BULLS—A Butterfly, a Love-lady and my herd bull. Cows and heifers. Prices right. Geo. W. Wright, Windom, Kans.

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

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

CHOICE registered Shorthorn bulls and heifers, cheap. M. C. Hemenway, Hope, Kans.

FOR SALE—The pure Cruickshank 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 22 to 28-quart cows, and all winners. Sayda Polo Jersey Farm, Parsons, Kansas.

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FOR SALE OR TRADE—For other stock, 2 well-bred jacks, all ready for service. We have too many and must sell them. Hughes & Carey, Route 3, Hartford, Kans.

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LEAVENWORTH COUNTY Jack Farm, 10 head of jacks and jennets for sale. Corson Brothers, Potter, Kans.

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Stray List

Week Ending March 30.

Elk County—J. L. Logsdon, Clerk. STEER—Taken up by John Chamberlin, in Paintershook Sp. (P. O. Longton), Nov. 10, 1905, one red muley steer, 2 years old, silt and crop off under part left ear; valued at \$23.

POULTRY.

THOROUGHBRED BLACK LANGSHAN EGGS FOR SALE—75 cents per sitting. Two or more sitting at 62 1/2 cents per sitting. Address Morris Bond, Rossville, Kans.

BARRED ROCK EGGS—Heavy winter laying strains. Pen No. 1, \$1.50 per 15. Pen No. 2, \$1 per 15; \$5 per 100. Mrs. W. H. Schreier, Argonia, Kans.

BUFF ROCKS—From fine stock. Eggs \$1.50 per sitting. A few good cockerels, \$1.50 each. M. Madden, Mound City, Kans.

SILVER WYANDOTTES EXCLUSIVELY—Eggs from State Show winners, 15 for \$2. Farm range Silvers, 100 eggs, \$4. Mrs. J. W. Gause, Emporia, Kans.

BARRED PLYMOUTH ROCK EGGS—From large, beautiful, pure-bred chickens, only \$1 per 15; \$5 per 100. Mattie Shearer, Frankfort, Kans.

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Neosho Poultry Yards Rose Comb R. I. Reds; score 90 to 94 1/2 points. Eggs from yard No. 1, \$2 per 15; others, \$1.50. Single sittings, \$5 per 100. J. W. Swartz, Americus, Kans.

W. P. ROCKS EXCLUSIVELY. Eggs for hatching 15 for 75 cents; 50 for \$2. MRS. ALICE PERKINS, Munden, Kansas

Barred Plymouth Rocks

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

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MISCELLANEOUS.

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WANTED—At once sound young men for firemen and brakemen on railroads; high wages; promotion; experience unnecessary; instructions by mail at your home; hundreds of good positions now open. Write National Railway Training Association, 620 Paxton Block, Omaha, Neb.

EARN FROM \$37.50 to as high as \$155.50 per month. Wanted—100 young men and sound men of good habits to become brakemen and firemen. Big demand in Wyoming, Nebraska, Kansas, Colorado, and Missouri. Instructions sent by mail; stamp for reply. Northern Railway Correspondence School, Room 202 Skyes Block, Minneapolis, Minn.

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FOR SALE—20 good strong spring and yearling Berkshire boars that are just what the farmers want. Prices right. Address E. W. Melville, Eudora, Kansas.

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.

FOR SALE—Spring of 1906 seed sweet potatoes six kinds. Price on application; also a fine lot of eating sweet potatoes. I. P. Myers, Hayesville, Kans.

FOR ONE DOLLAR I will send you 300 strawberry plants, 5 kinds, or 100 raspberry, 3 kinds, or 100 blackberry, or 25 grapes, 3 kinds, or 25 currants or 25 gooseberries or 200 asparagus; none better at any price. A. J. Nicholson, Manhattan, Kans.

HELP WANTED.

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

LEGAL.

Publication Notice.

In the District Court of Shawnee County, Kansas. A. M. Cowles, Plaintiff, vs. Flora S. Wright, et al., Defendants. The State of Kansas to Flora S. Wright, E. Payton Wright, and W. W. King. Greeting: You are each hereby notified that A. M. Cowles on Mar. 31, 1906, filed her petition in the court above named against yourselves, as defendants, and that you must answer said petition by the 17th day of May, 1906, or the same will be taken as true, and judgment will be rendered in said action barring each of you from any interest in, and quieting the title of the plaintiff to, the real estate described in her petition, to-wit: Lots 4, 5, and 6 on McVicar Avenue in Ensminger's Subdivision of Lots 2 and 5, of Block 8 in College Hill Addition to the City of Topeka, in Shawnee County, Kansas, according to the recorded plat of said Addition and Subdivision. A. M. COWLES.

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This book is written from the standpoint of the practical fruit grower; it is up to date in every particular, and covers the entire practice of fruit culture. It gives in plain, practical language, descriptions of such varieties as are most in demand in our markets, and the methods practiced by the most successful cultivators of many sections of the country. Separate chapters are devoted to the apple, pear, peach, apricot and nectarine, plum, cherry, quince, mulberry, grape, blackberry, raspberry, cranberry, strawberry, blueberry, huckleberry, subtropical fruits, propagation of fruit trees and plants, fruit growing under glass, insect pests and fungous diseases. The chapter on the apple is particularly comprehensive and complete, forming a monograph in itself. The chapter on forcing peaches, grapes, strawberries, and other fruits, describes the most successful methods of the present day, and is the most recent practical treatise on this important industry. Illustrated. 5 1/2 inches. 265 pages. Cloth. Price, postpaid, \$1.00.

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Dr. Miles' Anti-Pain Pills are a most remarkable remedy for the relief of periodic pains, backache, nervous or sick headache, or any of the distressing aches and pains that cause women so much suffering.

As pain is weakening, and leaves the system in an exhausted condition, it is wrong to suffer a moment longer than necessary, and you should take the Anti-Pain Pills on first indication of an attack.

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Dr. Miles' Anti-Pain Pills are sold by your druggist, who will guarantee that the first package will benefit. If it fails he will return your money. 25 doses, 25 cents. Never sold in bulk. Miles Medical Co., Elkhart, Ind

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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 animal, 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."

Wooden Tongue.—I had a yearling calf die with an inflamed tongue and lower jaw. It could not eat or drink. Blood oozed from the mouth; the blood resembled blood from an animal affected with blackleg. Please tell me what the disease is and whether or not it is contagious. Also give a remedy. Haven, Kansas. G. M.

Answer.—Your calf had what is called "wooden tongue," or actinomyces of the tongue. If other animals are affected, give them half a drachm each of iodide of potassium in a quart of water daily for ten days, then withhold for a few days and begin again. The disease may be transmitted to other animals.

Lump on Mare's Jaw.—I have had the teeth of the mare I wrote about some time ago examined, and they are all right. The swelling is on the side of the cheek above the teeth and there are little round lumps between her jaws, and a very small opening on the side of jaw below the swelling. Roxbury, Kansas. A. R. J.

Answer.—Since your mare's teeth seem to be all right, would advise using a stimulating liniment on the swelling. Equal parts of turpentine and linseed oil make a good liniment for this purpose. Use daily until the place is sore, then withhold for a few days, and begin again.

Lice on Horse.—I have a gray 6-year-old horse that is out of condition; he scratches himself about the neck and legs until the hair comes off; he eats well and when in the harness is full of life. I have been unable to find any lice, but am using a lice-killer on him once a week. He is thin in flesh, but eats well; he holds his head sideways when eating corn. Fairview, Kansas. G. W. C.

Answer.—We have mailed you a press bulletin on the preparation and use of lime and sulfur dip. Use the lime and sulfur dip on the animal's body and limbs to kill the lice, or, possibly, he has some skin affection. Have the animal's teeth examined and, if necessary, treated by a competent veterinarian.

Spavin.—I have a 5-year-old colt that is growing what I fear is spavin on one or both hind legs; two months ago I noticed a little enlargement on the lower part of the inside hock joint; it shows from behind more than from the front; it is quite hard. I am using a medicine that took the hair off at first, but later had no apparent effect. Can you give a remedy that will cure and prevent further growth? Brown County. SUBSCRIBER...

Answer.—You had better have the spavin "fired" and blistered by a competent veterinarian. C. L. BARNES.

Grain in Kansas City.

Receipts of wheat in Kansas City yesterday were 43 cars; Saturday's inspections were 54 cars. Offerings were moderate and the demand for milling wheat was fair. Prices were irregularly higher, good milling wheat in some instances selling at 1c to 2c advance. Other grades were about 1/4c up. The sales were: No. 2 hard, 1 car 82c, 1 car 81c, 1 car 80c, 3 cars 79c; No. 3 hard, 2 cars 77c, 3 cars 76 1/2c, 3 cars 76c, 3 cars 75 1/2c, 2 cars 75c, 3 cars 74 1/2c; No. 4 hard, 1 car 76c, 2 cars 74 1/2c, 1 car 74c, 1 car 73c, 1 car 72 1/2c, 1 car 72c, 3 cars 71c; rejected hard, 1 car 62c, 1 car mixed 65 1/2c; No. 2 red, 2 cars 94 1/2c, 1 car 91c; No. 3 red, nominally 88@93 1/2c; No. 4 red, nominally 78@87c.

Receipts of corn were 51 cars; Saturday's inspections were 58 cars. There was a good demand at 1/4c to 1/2c higher prices, as follows: No. 2 white, 2 cars 45c; No. 3 white, 3 cars 44 1/2c; No. 2 mixed, 3 cars 43 1/2c, 5 cars 43c; No. 3 mixed, 4 cars 43 1/2c; No. 2 yellow, 2 cars 44c, 1 car 43 1/2c; No. 3 yellow, 1 car 43 1/2c, 1 car 43 1/4c.

Receipts of oats were 14 cars; Saturday's inspections were 10 cars. The demand was fair at unchanged to 1/4c higher prices, as follows: No. 2 white, 1 car 34c, 2 cars 33 1/2c, 2 cars 33 1/4c; No. 3 white, 2 cars 33c, 2 cars 32 1/2c, 1 car color 32 1/2c; No. 1 white, 1 car color 32c, 1 car color 31 1/2c, 1 car color 31 1/4c; No. 2 mixed, 1 car 32 1/2c; No. 3 mixed, nominally 30 1/2@31 1/2c.

Barley was quoted 40@42c; rye, 54@56c; kafir-corn, 70@80c per cwt.; bran, 86@88c per cwt.; shorts, 90@95c per cwt.; corn chop, 83@85c per cwt.

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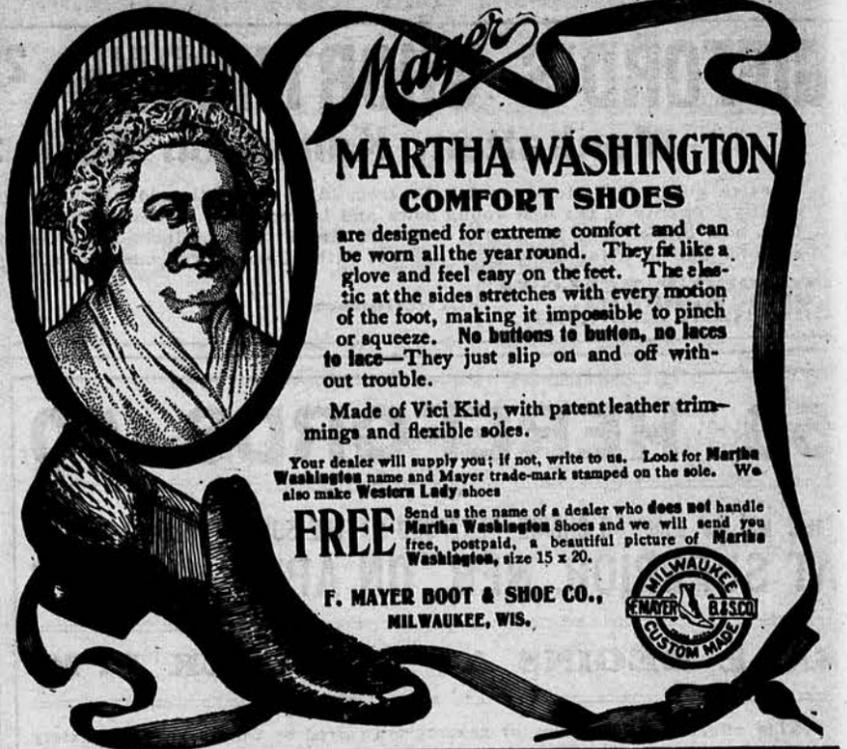
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Kansas City Live Stock Market.

Stock Yards, Kansas City, Mo., April 9, 1906.—Of the 40,000 cattle which came into the yards last week, 34,000 arrived the first three days. Prices on nearly all kinds declined 10 to 15 cents Tuesday and Wednesday, and salesmen were unable to secure any advance the last days of the week; buyers had filled up pretty well the days of the liberal runs. To-day, however, packers pens are empty, and the small run of 8,000 head sold 5 to 10c higher than Wednesday of last week, or nearly steady with last Monday. A new buyer for Philadelphia and Baltimore concerns entered the field last week, formerly located at Chicago. Killers in the East prefer the light handy-weight steers, can be secured in large numbers here, rather than the heavier steers generally produced by Illinois and Iowa feeders and put on the Chicago market. Of course, this increases the competition on all weights.

A slump in the cow market last week was the main feature, buyers claiming prices were out of line as compared with steers. Heifers and yearlings brings \$4.25 to \$5.00, good heavy cows, \$3.75 to \$4.60, bulls \$3.00 to \$4.25, veals a quarter higher, \$5.00 to \$6.75, top beef steers lately \$5.90, a large number of fair to good steers at string of choice Colorado and Western stockers and feeders \$3.75 to \$4.50, a string of choice Colorado stockers at \$4.80. Trade in stockers and feeders is of small dimensions now, and has been for last five or six weeks. Total shipment of this class to the country in March was 41,000 head, against 56,000 same month last year. Other farm matters will largely occupy the attention of farmers for a time now. Fortunately, killers demands have been sufficient to absorb the weightier country grades.

The hog market declined 10 cents last week, on receipts of 52,000 head, an increase of 8,000 over recent weeks. Country roads are allowing good marketing, but prices are holding up very well. Market is 5c higher to-day, run 7,000 head, top \$6.37 1/2, bulk of sales \$6.25 to \$6.35. Weights below 200 pounds are selling nearer the heavy hogs each week, only a nickel separating them now; pigs \$5.15 to \$5.85.

The mutton market advanced 15 to 25 cents last week, account of big drop in receipts after Monday. There is a better supply to-day, 8,000 head market steady on sheep, lambs 10c lower. Lambs sell at \$6.00 to \$6.50, clipped lambs \$5.10 to \$5.40, yearlings \$5.80 to \$6.20, wethers \$5.60 to \$6.00, ewes \$4.75 to \$5.60, spring lambs \$12.00 Friday, feeding lambs \$5.25 to \$6.00, depending on flesh and wool, the latter an important item in determining values on all classes. J. A. RICKART...

South St. Joseph Live Stock Market.

So. St. Joseph, Mo., April 9, 1906.—The week opened with much lighter receipts of cattle all around. At this point the number was barely more than half as large than a week ago. There was a pretty good demand for steers, and prices were generally steady although considered strong and in isolated spots 10c higher. There were no choice steers here, the best being some 1380 pound Kansas-fed heaves that sold at \$5.35. Other good cattle, but not so heavy sold at \$5.25 and fair to good light and medium weights at \$4.65 to \$5.00. Light steers especially of feeder quality showed a weaker tone than did the heavier weights, as local feeder buyers were decidedly bearish. Butcher stock sold about steady but continues to show a tendency to easier prices that seems to presage a break on any material increase in receipts. Bulls and calves held about steady. In the stocker and feeder line there was quite a large supply carried over from last week, and in view of this the local dealers were not anxious to take on fresh supplies, bidding not better than steady to 10c lower for good kind of young stock. Supplies on hand are largely native-bred yearlings and short twos, and generally of a very good and attractive quality. A very good class of yearlings is now selling at \$3.75@4.00.

Supplies of hogs were light, in fact much lighter than usual for an opening day of the week. The market opened very strong and in some cases higher, but showed a settling back to a steady level as the day advanced. The prices show higher on paper than

REAL ESTATE.

FOR SALE—320 acres extra fine unimproved wheat land, four miles from station; Thomas County, Kansas; \$13 per acre, \$1,280 cash, balance in nine annual payments, interest 6 per cent. Address Owner, 905 Park Ave., Kansas City, Mo.

320 ACRES level wheat land, five miles of Plains, Meade County, Kans; 220 cultivated, 100 wheat, 35 barley, house, barn, granary, tool shed, well, windmill, orchard, corral, Price \$4000. Half cash, balance 7 per cent, your time. 450 acres fenced, 160 wheat land, 25 barley, spring, tank, cross-fenced, price \$2500. Half cash, balance 7 per cent, your time. These five quarters join and will be sold together, or separately. E. H. Boyer, Meade, Kans.

320 ACRES, 6 miles from Emporia; 6 room house, barn 30 by 36, cattle-shed 20 by 40; good orchard and other fruit, 70 acres cultivated; 300 acres can be plowed or mowed; watered by wells and creeks; one mile to school. Price \$28 per acre. Can give immediate possession. Hurley & Jennings, Emporia, Kans.

800 ACRES FENCED—Half wheat land, house, barn, well, windmill, orchard, 250 acres wheat and barley, 5 miles to railroad. Terms, E. H. Boyer, Meade, Kans.

FOR SALE—Coal land, farms, and timber. The place for a poor man to get a home. Campbell, box 1453, Fort Smith, Ark. Real estate man need not apply.

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

440-ACRE FARM—Close to good town, very good buildings, with growing crops, at \$17 per acre. Other bargains in improved farms with crops. Missouri farms for sale. California land for sale. Western Kansas land at \$2.50 to \$3.00 per acre. Write or come and see what I have in the way of bargains in city property. J. Balmun, Arlington, Kans.

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

KANSAS LANDS—I have a choice lot of well-improved farms in Marion County, varying from \$30 to \$50 per acre. Also large lists of Western Kansas lands. For full particulars, address A. S. Quisenberry, Marion, Kans.

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

FOR SALE—The Dean Bartlett ranch, consisting of 1,200 acres on the New York and Northwestern railway. Near the town of Emmet, Pottawatomie County. Will sell all or a part. Address Dean Bartlett, St. Marys, Kans.

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

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

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We have a large number of cash customers in hand who wish to buy well improved, productive farms in choice agricultural localities. If you want to sell send us description and price. Through our system you deal personally with buyers that we send you. Real estate men need not answer. Address Continental Commercial Agency, Andrus Bldg., Minneapolis, Minn.

Saturday but is largely accounted for in a better quality of offerings. The bulk of hogs sold at \$6.30@6.35 with tops at \$6.37 1/2 with a few light weights going at \$6.25@6.30.

In the sheep trade the supplies were comparatively liberal all around, and made up largely of lambs. Quality was not as good as on finishing days of the week, and buyers demanded concessions, finally buying the supply at prices weak to 10c lower with the best lambs going at \$6.35, and a very good killing kind at \$6.00@6.20. The market for sheep was steady with very few on sale, good fat ewes selling at \$5.25.

WARRICK.

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