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KANSAS FARMER.

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The farmers of Gray County held their first farmers' picnic institute at Cimarron, August 13, 1902. From the reports it was a great success. At the afternoon meeting the house was so crowded that many were unable to gain admittance. The program rendered was very interesting and instructive, and was enjoyed by every one. The farmers of Gray County are very much in favor of institutes and propose to have one each year hereafter.

On the authority of a Kansas State University bulletin the KANSAS FARMER recently made the statement that Kansas mineral waters would be analyzed by the chemical department of the university, free of charge. At the request of the secretary of the university this offer is now withdrawn. It appeared in the bulletin through a mistake. However, those of our readers who have hitherto sent in samples for analysis under the misleading invitation will not be charged for the analysis. But hereafter the charge for an ordinary analysis will be \$3 while a complete analysis will cost about \$10.

Last week the writer visited southeastern Kansas and saw the first wagon load of new corn for the season. The corn was of an early variety from seed secured in Iowa, and, while not as large as we are accustomed to see in this State, it proved very satisfactory. The corn crop of the State is wonderfully promising at this time yet in places it is very uneven on account of the poor quality of the seed and the consequent

replanting which became necessary. The earlier corn is probably beyond any possible damage and the later kinds will be secure with another good rain or two. While the record this year promises to be phenomenal it is a question of what might have been accomplished had some of the methods of Professor Shamel of the Illinois Experiment Station been adopted. He finds that by a series of counts made in several sections of that State the number of barren stalks will average about 33 per cent. This is understood to be the average of several years. It is surmised that this barrenness is hereditary and that the planting of seed which has been fertilized by pollen from barren stalks will produce other barren stalks, while their elimination serves to increase the yield of a given field enormously. These barren stalks, which are understood to be independent stalks produced each from a kernel of corn and which do not grow ears, will use as large an amount of soil fertility and moisture as do fertile stalks. They also interfere with the growth of fertile stalks and in these ways are the direct cause of considerable loss to the farmer. It is estimated, as the results of these experiments, that the number of barren stalks in the field can be reduced from 33 per cent to 10 per cent or less by the cutting out of all of them each season and by proper and judicious selection of seed. We understand that the Kansas Corn Breeders' Association will have some interesting facts to report a little later on.

THREE BREEDERS OF THOROUGH-BRED SHORTHORNS.

Every farmer is a capitalist. As in all other classes of business the capitalist remains such and is successful only as he combines brains with his investment of dollars. Shrewd business judgment coupled with natural ability and previous training is always more or less successful. But in these later days the success attained by those who have invested brains as well as money has been very pronounced in agricultural as well as in other lines.

Nestled among the green hills of Shawnee and Wabaunsee counties, where the valley lands are rich to excess and the hills covered with abundant pasturage, may be found a small group of men who have invested a large amount of brains and business judgment and who, with the passing years, have won ability to invest large amounts of money in their favorite calling, stock-breeding. These men began the breeding of pure-bred Shorthorn cattle each in a small way and by the use of their knowledge and business judgment have developed their herds until they now have the best the country affords. Beginning with the families that were most popular twenty years ago and using only the best bulls that could be had for money, they have always worked with a definite aim in view and are now able to show a type that is wonderfully even and unmistakable in its good qualities. This small group of breeders is composed of but three men and their sons who now own about five hundred head of the richest bred and most typical animals of the breed that can be found in the State. The Harris-bred bull, Thistletop, which brought fame to the herd of the State Agricultural College of Kansas, was for years at the head of one or the other

of these herds and he has been followed by Lord Mayor who is the sire of more herd-headers than any other Shorthorn that we now remember and who numbers the famous Victorious as one of his best sons, and others bull of like class. Gallant Knight, Imp. Tillycairn, Sir Knight, The Baron, are others of the same class that are now in active service and are only mentioned here to show the quality of the animals as well as the implements these men have used in compelling success.

As an illustration of the success attained we may mention that the owner of Lord Mayor paid \$250 for him and in less than nine years has sold \$26,000 worth of his produce and has fifty head of the best ones left. Surely a return of \$50,000 in nine years on an investment of \$250 cash spells success and gives large credit for the amount of brains invested as well. This little group of three breeders are now the center of an eight-mile circuit within which may be found seven hundred head of these royally bred Shorthorns. The success attained by these breeders is not all measured by the dollars they have received nor the number of animals they own. Its largest item is in the quality of these animals which have been bred to the highest possible type and which are remarkable in that they have been bred to attain this type without grain feed. All breeders know that many of the purest bred animals when put in show condition may become great weight-carriers but do not have their flesh evenly distributed. On the other hand, many of them do not know that it is possible to train an animal to properly carry and evenly distribute flesh without grain. Fitted animals frequently become patchy when put into condition. These grass-trained animals are never so and are characterized by their thick and heavy flesh, its even distribution, and their wonderful ability to thrive when sold to any other portion of the country. How many herds of pure-bred animals are there in the West that could be placed in show condition within thirty days from the pasture? Yet animals from these herds are now on their way for exhibition in the State fairs that have needed less time. This ability to carry large weight and evenly distributed flesh on grass and hay with practically no grain, is one of the most valuable features of these animals which have nothing lacking in their breeding and individuality. The breeding of pure-bred live stock is a business which will continue as long as men eat and is as safe and profitable as that of national banking. And the old breeder can gain knowledge and the young one wisdom by a careful study of the methods of breeding and feeding that have been carried to such perfection in the herds of Andrew Pringle, Eskridge; C. K. Tomson & Sons, and T. P. Babst, of Dover, Kans.

KANSAS FARMER'S NEW WALL ATLAS.

The KANSAS FARMER has arranged with the leading publisher of maps and atlases to prepare especially for us a new Wall Atlas, showing colored reference maps of Kansas, Oklahoma, Indian Territory, the United States and the World with the 1900 census.

The size of our new Wall Atlas is 22 by 28 inches. The outside map shows the flags of the United States, as well as the flags of all nations. In addition thereto is given a list of tables, an exhibit of the products and their values

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of the United States and the world. One of the maps shows all States, Territories and possessions of the greater United States and facts as to their capitals and the first settlements and in relation to their general government, areas, population, and legislature.

The atlas also gives the growth of our country, showing the population of all towns by States, of 3,000 and over for the census years of 1880, 1890, and 1900.

This grand new census edition atlas also shows for every country on earth, the government, chief executive, area in square miles, population, capital and its population. This excellent educational work should be in every home. It sells for one dollar.

Every one of our old subscribers who will send us two new subscribers at 50 cents each for the remainder of the year, will receive a copy of this splendid new Wall Atlas postage prepaid.

CALLED TO RHODE ISLAND.

President E. R. Nichols, of the Kansas State Agricultural College, has been tendered the presidency of the Rhode Island College of Agriculture and Mechanic Arts. The record made by the Kansas men who have accepted positions in the East very naturally creates the impression that Jayhawkers in general are full of all kinds of energy and other qualifications needed to bring success to institutions in the older States.

Rhode Island is a small State—the

smallest in the Union. It contains 1,085 square miles, an area that is exceeded by each of several counties in Kansas. An official report of Rhode Island says: "The surface consists largely of low hills. Along the ocean are extensive salt marshes. In Narragansett Bay are numerous islands. The soil is stony and has been generally depleted by injudicious methods of farming for over two hundred years. * * * The annual rainfall is 53.6 inches. With the development of very large manufacturing interests and the consequent growth of cities and towns within and near the borders of the State, market gardening and poultry-raising have become important industries. The principal field crops are hay and potatoes. Considerable numbers of milch cows and horses are maintained."

Naturally in such a State "agriculture does not cut much of a swarth." The chicken business rather than grain-growing or cattle-raising is adapted to the rocky hills.

If President Nichols shall accept the proffered position in Rhode Island it will probably be fortunate for two States. His ideals of agricultural college work may be rather large for Rhode Island conditions, but a little westernism introduced among the poultry-raisers, gardeners, and potato-growers can do them no harm. On the other hand there are many progressive Kansans who desire to see at the head of the great agricultural college of this great agricultural State a president of the aggressive sort who is a little ahead of the Western demands of agriculture and stock-growing upon the agricultural college both as to the teaching and as to the experiment station work.

FEEDERS AND CORN.

A subscriber inquires whether it will probably be more profitable to sell his bunch of fifty feeders now and later to sell his corn, or to keep the feeders to eat his corn.

Present high prices of feeders make this question a pertinent one. Reports from the range country indicate a larger supply than usual of range cattle. The live stock papers from the range country bring the information that on account of the short corn crop last year the market for range feeders was practically cut off. Even the usual packing house demand for grass cattle was more than supplied by the rush of half-fat stock from the corn regions. The consequence is said to be nearly two years' supply of range feeders for the present corn crop. If this is true there should be a good demand for corn and the prices of beef should be easier next spring.

On the other hand, the farmer who has feeders of his own raising knows their quality. This is not likely to be overestimated by the buyer. Again, the farmer who has his cattle on his place had considerable advantage over the neighbor who must go to Kansas City and buy them. Thus, if A, who has feeders, ships them to Kansas City and sells them and his neighbor, B, buys them on the Kansas City market and brings them home to his feed yards, it is evident that the difference between what A receives for the cattle and what B pays for them must include freight both ways, yard charges, and commissions for both selling and buying. Further, there will be some shrinkage and a little time will be required for the cattle to get over the excitement. If A and B both have corn to market and are in like situations except that A has feeders and B has none, it is evident that A, who has the cattle, can make more money from feeding them than it will be possible for B to make on buying and feeding.

Another matter ought to be taken into consideration. In selling corn off the farm a considerable amount of the productive power of the land goes with it, while in feeding cattle most of this fertility is left on the farm and is deposited on the land in such form as to remedy the greatest deficiency of Kansas soils, that is the deficiency of humus. If selling the cattle and the corn separately will bring no more money than can be had for the cattle after they shall have eaten the corn, even though much added labor is involved in feeding, the corn should be fed on the place. Next season's crops should show enough difference in favor of stock farming to pay for all the added labor of feeding, and the increase of fertility will last for several years.

In general, the farm on which the crops are chiefly fed is more profitable than the farm from which the grain is hauled to market. Present market conditions are, however, so exceptional that the KANSAS FARMER hesitates to express an opinion as to which course will this year yield the most dollars. With the

Your mid-summer orders will receive our prompt attention.

We have everything for hot weather.

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SUBSTANTIAL - FIRM - RELIABLE

Thirty years of successful merchandising on a firm, substantial basis, employing clean, upright methods—the kind that insure positive reliability—a firm worthy of your patronage. We already enjoy the confidence of over half the people in your county but we want yours also. Ask your neighbors about us if you doubt our ability to serve you properly—you will be surprised to find how many customers we have in your vicinity. If we can please others we can please you.

PRELIMINARY ANNOUNCEMENT—Our new catalogue No. 71 will be ready about September 1st. Our buyers have scoured the markets of the world for honest, up-to-date goods, to quote in this catalogue, and it will be beyond doubt the finest catalogue ever issued by any mercantile firm. We want every reader of this paper to send for a copy. It will be sent, all charges paid, upon receipt of 15 cents—this amount only half pays the postage, but it is sufficient to show us that you are acting in good faith.

Applications may be sent in now, and we will forward the catalogue as soon as it is issued—about September 1st. Ask for catalogue No. 71, and enclose 15 cents in either stamps or coin. Why not do it now?



Montgomery Ward & Co., Chicago

above considerations in mind each farmer will be able to determine a safer course for himself than it is possible for the editor to lay out for him.

FOR YOUNG MEN.

With the development of our country has come a marvelous growth of business ability and methods. Gigantic business interests have developed in this country as no where else in the world. In order to secure the greatest returns for the investment of capital and brains by the most economical management and the consequent reduction of expenses, capital has combined with capital. Products that were once the output of the farm or of the small individual factory are now produced almost solely by these great combinations under centralized managements.

Whatever may be said as to the methods of these combinations—and the less said of some of them the better—it is a conditions that confronts every American and one which may not change at once. This being true, the matter should be faced and these conditions averted where they are evil and taken advantage of where they are good.

One way in which these conditions have been taken advantage of—whether good or bad yet remains to be seen—is in the combinations of capital in the creation and operation of great farms and ranches. The sensus of the United States—always an interesting study to those who would learn by the past what the future has in store—shows some surprising facts along this line.

Here is shown the fact that these large farms are the results of combinations of capital; that they are managed by capable men and that the returns from them are far in excess of those credited to owners of ordinary farms. The census does not explain this latter fact but it exists. In our judgment the explanation lies in the fact that the managers of these great farms are thoroughly competent men who are placed in charge for the purpose of making them pay, and in the added, but no less important fact, that they invariably carry a heavy supply of live stock. And what could more nearly insure success in any line of human effort than trained capacity and good machinery? What a field of usefulness these facts suggest for the young man of to-day! As these great farming operations succeed the demand for men to manage them will increase, and with this increased demand for men will come a greater demand upon their abilities. Increased responsibilities always bring increased compensation. Here then lies a wide field of usefulness for the young man who is obliged to begin the battle of life equipped with little but a pair of strong hands, a good intellect, and an honest heart. Before him are the requirements. He must be an up-to-date farmer, a scientific breeder, and an expert feeder, and these qualifications are furnished him nowhere so quickly, so cheaply or so thoroughly as in the agricultural college.

If the agricultural college of his own State can not thus equip him let him go to another and then let him assume the right of every citizen and find out why he must go abroad for what his own State has promised him. The fu-

ture wealth and greatness of the great Southwest depends, in no small degree, upon pure-bred live stock, which is the best-known money-making machine on the farm, and, as no machine can run alone, he who is best trained to handle this delicate kind and make it do its best work is the man who is best assured of success.

The Government Crop Report.

The monthly report of the statistician of the Department of Agriculture shows the condition of corn on August 1 to have been 86.5, as compared with 87.5 on July 1, 1902; 54 on August 1, 1901; 87.5 at the corresponding date in 1900, and a ten-year average of 84. There has been an improvement during the month of 4 points in Kansas.

The substantial improvement in the most important corn States would undoubtedly have resulted in a marked improvement in the average for the entire country, but for the fact that fourteen Southern States, containing 36.8 per cent of the total corn acreage, show an average decline during July of 10.7 points. The statistician estimates the winter wheat crop at about 380,000,000 bushels, or an average of 13.8 bushels per acre.

While this estimate is subject to revision, threshing not being sufficiently advanced in the more northerly sections of the winter wheat belt to justify the making of a definite and final estimate at this time, it is based on reports of yield per acre, in bushels, received from correspondents and special field agents. If the estimate is higher than was indicated by previous reports of condition, it is due to the fact that the crop is turning out somewhat better than was expected. The estimated average yield per acre in the principal States is as follows, the States being arranged in order of acreage:

Kansas, 8.7; Missouri, 18.2; California, 15; Indiana, 15; Ohio, 16; Illinois, 16.6; Nebraska, 22; Pennsylvania, 15; Oklahoma, 11.6; Michigan, 17.4.

The average condition of spring wheat on August 1, was 89.7, as compared with 92.4 last month; 80.3 on August 1, 1901; 56.4 at the corresponding date in 1900, and a ten-year average of 80.

The average condition of oats was 80.4 against 92.1 last month, 73.6 on August 1, 1901; 85 at the corresponding date in 1900, and a ten-year average of 82.2.

All the principal oat States, whether representing an improvement or decline still have an average condition comparing favorably with their ten-year averages.

The proportion of the oat crop of last year still in the hands of farmers is estimated at 4.2 per cent, as compared with 5.9 per cent of the crop of 1900 in farmers' hands one year ago and 6.8 per cent of the crop of 1899 in farmers' hands two years ago. The average condition of barley declined 3.5 points during July, but on August 1, it was still 3.3 points higher than at the corresponding date in 1901; 18.6 points higher than on August 1, 1900, and 6.8 points above the mean of the ten-year averages. During July there was a decline of 1 point in Kansas and Washington and two points in California.

The average condition of spring rye improved 1.2 points during July. On

August 1 it was 6.9 points higher than on August 1, 1900, and 5.3 points above the mean of the average for the past ten years. But one of the principal States, however, shows an improvement in condition during the month.

The average condition of potatoes improved 1.9 points during July, and on August 1 it was 32.5 points higher than at the corresponding date last year; 6.6 higher than on August 14, 1900, and 11.1 points above the mean of the August averages for the past ten years.

Preliminary returns indicate an increase of 1.1 per cent in the hay acreage. Of the eleven States mowing one million acres or more last year six report increased and five reduced acreage. The condition of timothy hay has improved 5.1 points during July and is 4.6 points above the mean of the August averages for the past eight years.

Reports as to the production of clover are on the whole unfavorable. In point of quality the crop is below that of last year and also below the ten-year averages in all but three of the States of principal production.

During July the changes in the condition of the tobacco crop were unfavorable in every important tobacco-producing State except Pennsylvania, in which State an improvement of 4 points was made.

Notwithstanding the fact that there has been a decline in the condition of apples as compared with last month in many States, reports on this fruit from nearly every important State indicate that more than an average crop will be harvested.

Except in New York the conditions of hops was higher on August 1 than at any corresponding date in 1901, and in California and Oregon conditions are 3 and 7 points, respectively, above the seven-year average. The condition in New York is 17 points below such average.

Wichita Fair.

The people of the wheat-growing sections of Kansas and Oklahoma do not realize the excitement of the cattle country, and the cattlemen do not understand the people and conditions of the wheat and corn belt. The Wichita Exposition and Carnival Association has undertaken to bring these two factors together at its fair to be held in Wichita September 22-27, by having an exhibition of the products of farm, garden, orchard, and range, as well as the articles that show the industry of the housewife. To do this the association has prepared a fine list of the purses for the best exhibitions of cereals and stock, and also purses for the men who ride the wud broncho, and rope the wild steer of the plains. On one day of the fair there will be a roping contest and one a riding contest, and handsome prizes have been hung up for the best and quickest.

SEED WHEAT.

Don't sow old worn or doubtful varieties when you can obtain improved kinds which will yield 45 to

60 BUSHELS PER ACRE

Ask for our new Winter Wheat Catalogue, describing the Defiance, the grandest pedigree variety ever sent out. Requires less seed, stools better, and yields a larger crop than any other, \$1.50 per bushel.

Per bushel.

Turkish Red Winter Wheat.....\$1.00
 Monster Winter Rye.....\$1.20
 Common Winter Rye......85

No extra charge for bags holding same.
 Ask for prices on timothy, clover, etc.

IOWA SEED CO., Des Moines, Iowa

Agricultural Matters.

Judge Broderick's Experience With Emmer.

EDITOR KANSAS FARMER:—As requested, I write of the production of Emmer. This grain is of Russian origin, and is sometimes erroneously called "Speltz." About the middle of March I planted fifty bushels of seed on thirty-three acres of ground which had been plowed last fall. The seed was put in with a press drill, and the drill was followed by a heavy roller. The intention was to drill a bushel and a half of seed to the acre, which was sufficient, though more would probably be required if broadcast.

The ground was dry, and during the latter part of March, and through the month of April, the weather was exceedingly cool. The Emmer came up in about ten days, grew steadily until the rains came about the first of May, and it then commenced spreading. The light frosts of April made no impression on the plant and the seed having been drilled east and west, the severe winds of that month wrought no injury. After the plants commenced stooling and spreading the weeds were effectually smothered and the Emmer clearly became monarch of the situation. Insects did not trouble nor rust blight it. It stood erect against rain and wind storm, while oats around it were blown and injured.

The Emmer was harvested before the grain was over-ripe so as to make most of the straw. It was threshed from the field and made one thousand fifty-six bushels, being an average of thirty-two bushels to the acre, and weighing forty-two pounds to the bushel. There were about two tons of straw per acre. The straw ranks high especially as roughage for cattle. The grain takes the place of oats and is superior in some respects, having more body.

The ground upon which this crop was grown was much worn by continuous corn cropping, so that this test is hardly a fair one as to the production of either grain or straw. Stronger ground would surely produce larger results, though the crop is not believed to be exacting on the soil.

I believe that this will be a valuable crop for northern Kansas, if planted early. Emmer is the product of a cold climate, and should be planted here as early in March as conditions will allow, so that it can make its start before the long hot days set in.

Two experiments have been made in this (Jackson) County aside from mine. Judge E. E. Rafter and William Woltverton of Holton each raised a few acres this year, and the yield in both cases was satisfactory.

CASE BRODERICK.

Holton, Kans., Aug. 16, 1902.

Kansas State Exposition for 1902.

The first annual event at Topeka, Kans., under the management of the Kansas State Exposition Company, will be held this year during the week of September 8 to 13, and will consist of State Fine Stock Show, race meeting, carnival and vaudeville attraction, to say nothing of all the side features usually seen at the State Fairs. The outlook for a successful first show is more than flattering. The race program consists of thirteen events in the harness class with purses of \$400 each. In the running division there will be the Kansas State Derby of one mile for \$500 and twelve purses aggregating \$2,500 all for runners. The management this year paid particular attention to the running part of the racing program.

The entertainment committee of the Commercial Club have decided to have their fall festivities in conjunction with the Kansas State Exposition Company during the week of September 8 to 13, and have arranged in addition to the carnival proper a fine evening entertainment consisting of vaudeville performance to be given on a temporary stage erected in front of the grand stand. This joint show will make Topeka doubly attractive for the week above mentioned.

The Kansas State Exposition Company have happily selected their dates to fall in with the circuit of great Western State fairs this year with the Missouri State Fair at Sedalia, Mo., coming first, the week of August 18 to 23, the State Fair of Iowa at Des Moines the week of August 25 to 29, and Lincoln, Neb., September 1 to 5, followed

by the Kansas State Exposition Company, September 8 to 13.

The State Fine Stock Show is the happy selection for a part of their coming entertainment of September 8 to 13, inasmuch as the Fancy Stock Breeders of this State as well as others are preparing their herds for the great shows at Kansas City and Chicago. This special feature of the Kansas State Exposition Company will not only suit them but please the great crowds of people who are expecting to attend the Topeka festivities.

The enterprising business men of Topeka, desiring to see the first annual meeting of the State Exposition Company a success, have raised a guarantee fund of \$5,000 to guarantee prompt payment of all premiums for all classes of fine stock at the State Fine Stock Show, at Topeka, September 8-13.

Saving Kafir-corn and Fodder.

Some one wanted to know through your paper how to save Kafir-corn and fodder both. We cut with a McCormick binder. When quite dry, we "head" the bundles. To do that we make a box, good and strong, about thirty inches wide, same height, and eight feet long. Nail this box on 2 by 6's set on edge for runners. Fasten a knife on one end of the box. The knife of a sled-cutter does very well. Bolt a sick of hard wood to it for a handle and fasten the other end to a 2 by 4 set upright in the corners of the box. The knife should come down straight on the end board of the box. We hitch the box to the end of the feed wagon and one man works the knife while two put the bundles under the knife.

When the box gets full, fork the heads into the wagon-box. This is reasonably clean and quite speedy.

W. V. JACKSON.

Coldwater, Comanche County.

Corn Cultivation and Breeding.

BY W. H. STEVENSON, ILLINOIS COLLEGE OF AGRICULTURE, BEFORE THE ILLINOIS CORN GROWERS' ASSOCIATION.

There are many men to-day, in every State, who have toiled long and diligently to increase the average yield of corn per acre, but there has ever been few—very few—among the number, who have endeavored to accomplish this important work by systematically breeding corn. We can readily understand why this is so. It has been comparatively easy to investigate improved methods of planting and cultivating, but what time and patience and study have been required to breed aright? And yet, by reason of its inherent capacity for variation, corn improvement opens to every intelligent farmer a large and exceedingly fertile field for practicable and profitable investigation and work.

Corn sustains such a vital relation to the agricultural interests of our country and the world, owing to its value as a food, both for animals and men, that its breeding along practical and scientific lines is a matter of the greatest importance. Therefore, a knowledge and application of the principles of breeding are as important and fundamental to success in producing desirable types of corn as in bringing our various breeds of live stock to a more perfect development.

BREEDING PLANTS MUCH LIKE BREEDING ANIMALS.

Within recent years it has been found that the work of improvement in plant life and in animal life can be conducted along similar lines by similar methods.

To the great breeders of the past are the stockmen of the present indebted for the choice animals in their flocks and herds. What would be the type and quality of our live stock to-day had not Bakewell, Collings, Bates, Booth, Cruickshank, Webb, and other breeders, during the past century and a half, studied animal life and form, and through careful selection, mating and breeding, pursued with persistency during many years, laid such an admirable foundation for our modern live stock husbandry?

Successive generations of sheep and cattle, upon a thousand hills, in both hemispheres, have borne the impress of these master-breeders' handiwork, in feature, form, quality, and other characteristics.

THE REWARDS.

And now we believe that in the fullness of time the day has arrived when the reward is as certain and as great for those who will give of their energy and time to the improvement of our farm crops as that which crowned the efforts of the pioneer in live stock improvement. The breeding and improvement of corn is of such great import-

ance and can be carried on so successfully and profitably by the intelligent, enthusiastic farmer that we deem this work worthy of the most careful and thoughtful study.

Successful corn breeding is inseparably linked with three all-important factors in crop production. There are fertile soil, proper methods of cultivation, and improved seed. Unless they are the very foundation on which the corn breeders' efforts are based, failure and disappointment must follow.

MISTAKES OF THE FARMERS.

The farmers of the great corn belt a generation ago apparently believed that the virgin fertility of the soil was inexhaustible. With little thought, regarding the penalty which the immutable laws of nature inevitably exact from every soil robber, these pioneer farmers raised corn after corn, wheat after wheat, or corn after wheat, producing large and profitable crops of each. The wonderful productiveness of the soil encouraged and fostered a system of grain growing and soil robbing, which, in time, threatened to completely exhaust the fertility of the land. When the pioneer farmer discovered that he had worn out his fields and that they would no longer produce profitable crops, he made haste to move to a new section. But, in these later days, there is little available new corn land for the younger generation. In many sections the children of the early settlers are to-day striving to solve the problem of restoring the fertility to the soils.

WE HAVE LEARNED.

Many have learned that a one-crop system of farming assuredly brings poverty and want to any community. Many, too, have advanced a step and now realize how much more steady the profit is in meat and milk than it is in corn and wheat; how much better corn pays in cattle, hogs and sheep than when sold to the grain buyer. When all grain growers master this one underlying principle in successful agriculture a new and brighter era will come most speedily and with a promise of reward rich almost beyond compare. The problem, then, before every corn grower is to keep up the fertility of his soil in order that he may continue to produce profitable crops. We offer a few practicable methods by which the mechanical as well as the chemical condition of the soil may be improved at the same time that profitable crops are produced.

IMPROVE THE SOIL.

The leguminous crops, e. g., soybeans, cow-peas, clover, and alfalfa furnish one of the best means of building up soil fertility. They are grown under widely different conditions and are especially beneficial to the soil and valuable as feeds.

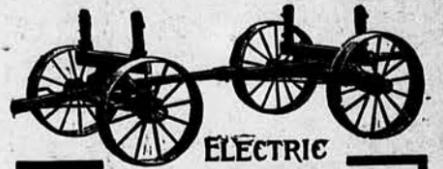
Increased yields of five to fifteen bushels per acre are frequently reported where corn follows one of the legumes in a rotation. The great value of leguminous crops is based on the fact they furnish the cheapest food for stock and the cheapest manure for the soil. This is true because they obtain from the air nitrogen, a substance necessary for plants and animals alike, which costs in the form of fertilizers and feeding stuffs fifteen to twenty cents a pound.

The soy-bean and cow-pea hay has been found to be as valuable as ordinary red clover hay and the crop is harvested in much the same way. In rich, black, prairie loam the soy-bean is more successful than the cow-pea. The later, on rich land, produces an excessive growth of vine with very little seed.

However, these leguminous crops cannot be rotated with corn indefinitely when the entire growth is annually removed from the land. They add much to the available nitrogen in the soil, but they do not add potash and phosphorus. Continuous cropping of any kind will sooner or later exhaust the land. Therefore, it is important that every corn grower heed the warning of wanting fertility and speedily learn that there is no such thing practicable as maintaining fertility without live stock. Barn-yard manure, when properly cared for and applied to the fields is the best of fertilizers for the corn grower. The use of commercial fertilizers, the growing of legumes and the turning-under of green crops are helpful but they only delay the inevitable loss of fertility in the fields in which they are used.

CULTURE.

The second important factor in the production of a corn crop is the culture. This includes the preparation of the seed bed, the planting, and the cultivation. Conditions of soil and climate vary to such an extent that no fixed rules can be given regarding the depth



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and time of plowing, disking, and harrowing. The preparation of the seed bed, however, should be such as to provide, in fullest measure, moisture, heat, and air which are absolutely essential for the germination and healthy development of seed corn. A large number of experiments have been made to secure valuable data regarding such important points as the distance apart of the hills, the number of stalks in a hill, and hilling vs. drilling. All of these items contribute, in part, to the success or failure of the corn crop, but, here again, so many conditions enter into the problem that we can do little more than call attention, very briefly, to three or four facts which may prove valuable as guide posts to the corn grower who would profit by the accumulated evidence of many investigators.

Year after year the trend has been to increase the number of hills per acre and to decrease the number of stalks in a hill. There are good reasons for this change from the planters, three feet ten inches wide, or even wider, to those three feet six inches wide, and less. Two and three stalks in a hill give a maximum yield and the ears are usually larger and more fully developed. In addition, a three-foot six-inch planter drops 3,556 hill per acre, or 316 hills more than a three-foot eight-inch planter. If each hill produces two well-developed ears this represents an increased yield of six or seven bushels per acre. Drilling is very often practiced on rich, new land quite free from noxious weeds. Under these conditions an increased number of stalks per acre give very satisfactory yields. However, when grasses and weeds threaten to seriously interfere with proper cultivation of the drilled corn it always proves best to adopt the hill system. A series of experiments at the Illinois Station, repeated with different soils, varieties of corn and seasons, show that the average yield for the two systems is practically the same. In view of the great advantage in favor of the hilled corn during the period of cultivation we must grant that it is the most practical system for nearly all conditions.

DO MORE THAN KILL THE WEEDS.

We cultivate corn to kill weeds, to improve the physical and chemical conditions of the soil, and to conserve moisture. Careful plowing, dragging, and harrowing improve the physical condition of the soil by making it finer and looser, thereby affording a larger feeding area for the roots of the plants. Chemical improvement is brought about by admitting a larger quantity of air into the soil. This process increases the fertility by hastening the formation of available plant food. An adequate supply of moisture is an essential condition for the growth of corn. The amount of water used by the corn crop during the growing season is enormous. An idea of the total moisture needed is gained from the fact that 310 pounds of water are required for every pound of dry matter. During the hot summer months, the period of least rainfall, the growing crop requires the major part of this vast quantity of water, and it is during this time that the great reserve supply of moisture in the soil finds its way to the surface by capillary attraction and evaporates rapidly. Now, the point is, will the corn grower permit the loss of water which sustains such a vital relation to his crop? He need not permit it, for this evaporation can be retarded by stirring the surface of the soil and keeping it light and porous, the loose soil serving as a mulch. The

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pores in this soil are far too large for capillary action and the moisture fails to reach the surface. The corn grower, then, must cultivate more frequently, and less deeply, too, as we shall find, in order that, while killing the weeds, he may preserve the moisture for the corn roots and spare the corn roots to gather the moisture. Many successful corn growers have found it very profitable to continue cultivation after the corn is too high for the regular two-horse cultivators. They go between the rows with a one-horse cultivator, or drag, while the ears are setting, and thus maintain a dust mulch. This work is of value only in the dry season.

Root-pruning or cutting off the roots of the corn plants effects serious injury to the crop and demands the thoughtful attention of the majority of corn growers. The loss from this source is so great and yet so frequently entirely overlooked that we desire to offer a few figures which will clearly show the importance of a system of cultivation which does not cut and injure the roots of the corn plants.

The results of three years' work in testing the effects of root-pruning were as follows:

Not pruned.....62 bu. per acre.
Pruned two in. deep....60 bu. per acre
Pruned four in. deep...45 bu. per acre.
Pruned six in. deep....30 bu. per acre.
The experiments explain the reduction of the yield which almost invariably follows deep cultivation.

SEED CORN BREEDERS.

The third factor in the growing of a corn crop is the seed corn. It is in this connection that the possibilities in corn breeding are most pointedly emphasized. With few exceptions, only in the past decade have earnest efforts been put forth in the way of systematically breeding corn. More than half a century ago a few men, realizing the far-reaching importance of well-bred seed corn, began to improve their strains of corn by careful selection and cultivation. Their labors, prosecuted amid innumerable difficulties and discouragements, finally gave to the corn growers of the United States improved varieties of corn. They are today the very foundation on which rests much of the advancement which has been made in establishing our most valuable pure-bred varieties of corn. One of these pioneer breeders, J. S. Leaming, of Wilmington, Ohio, as early as 1825 began to select and breed the variety which now bears his name. This corn was brought to Illinois, the shape and size improved by selection and breeding, or desirable characteristics, and today this variety is the most widely grown of all yellow varieties. The valuable results accruing from these long years of breeding are proved by the record made by the Leaming corn in a series of comparative variety tests of yields per acre which began in 1888 at the Illinois Experiment Station. During this long period this variety has maintained its lead as the best yielder. Another pioneer breeder, Mr. James Riley, of Thorntown, Indiana, more than a quarter of a century ago selected the best white corn in his state for a foundation line and by persistently weeding out the barren stalks and other undesirable types in his corn fields he succeeded in producing the valuable strain of corn known as the Boone County White. This variety is widely grown and has been a potent factor in improving the corn in many sections. The truth is, there is ample proof that careful breeding and selection give more profitable types of corn. We have referred to the splendid achievements in improving the various breeds of live stock. The profit to the American farmers from their well-bred herds and flocks has reached millions of dollars. Practical corn growers who have put the improved breeds of corn to the test are unanimous in their statements that we may obtain results, equally valuable and profitable, from highly-bred varieties of corn. This is not theory or speculation. Abundant evidence of the most reliable character is available to prove that well-bred seed corn increases the yield per acre, improves the quality, and advances and fixes desirable types in the varieties. The average yield of corn per acre in the great corn states is about thirty bushels. This fact shows that our farmers are not at the present time producing a maximum yield. If every hill of corn at the average distance of planting, three feet six inches by three feet six inches, produced a single pound of corn the yield would be about fifty bushels per acre. Here we have an increase of twenty bushels over the average and yet if each hill contained two or three stalks, the most profitable number, and each stalk bears a well developed ear the yield would reach nearly a hundred bushels. Can we not

find a reason for the low average in the fact that every stalk does not produce an ear and that many of the fruitful ones give ears dwarfed and greatly lacking in development and soundness?

BARREN STALKS.

One of the factors which directly contributes to this reduction of yield is the abnormal number of barren stalks in our corn fields. It is a matter of surprise to one who has not noted the fact that careful counts establish the average number of barren stalks at 30 per cent. Many speakers on dairy subjects have long advised the weeding out from milking herds the unprofitable cows, because they not only fail to return a profit themselves but often absorb that afforded by their superior stable companions. Is there not as strong an argument in favor of eliminating this excessive number of barren stalks from our fields? They are little better than weeds; serve no good purpose; doubtless take quite as much fertility from the soil as the fertile stalks, and the labor and expense of growing them fully equals that of the desirable ones. It is extremely difficult to find in any crib even a very limited number of ears of corn uniform in shape, size, and other characteristics. Nearly all of them are deficient in length or circumference, have poorly filled butts and tips and shallow or rounded kernels. Only in the cribs of those who have improved their corn by selection and breeding is it possible to secure samples approaching that degree of uniformity and truthness to type which is so valuable and an indication of good breeding and prepotency. The value of this uniformity is not a fictitious one. A farmer can cultivate and care for a field of corn which has been planted with improved seed without expending a dollar more than his neighbor who persists in planting corn without any prepotency other than that which tends to reproduce its own undesirable characteristics.

FACTS AND FIGURES.

If, then, with pure-bred seed the yield can be increased five bushels, or even one bushel, per acre, which one of these men, think you, will most certainly be rewarded for his diligence in business? Ah, yes, perhaps you say, how easy it is to figure these increased yields and profits! But are the facts fully in accord with these very interesting figures? Let us see. Will we accept, unimpeached, the testimony of scores of our business-like, practicable corn-growers? There can be no more trustworthy authority. Within recent years a large number of farmers have profited by planting pure-bred seed corn. Their report of results are interesting and to the point.

One of these men, a renter, decided to plant his own unimproved seed corn, for he believed that he could not afford to purchase pure-bred seed although he had unbounded confidence in the prepotency and value of the improved seed. His landlord, however, bought enough pure-bred seed to plant half of the land, and thus the improved and the unimproved were grown side by side in the same field, and the cultivation and soil conditions were practically identical. The results, as given to me, are not surprising but fully in keeping with those which we may reasonably expect when these conditions exist.

The number of barren stalks was 50 per cent less in the well-bred corn and the yield at least six bushels per acre more. But the profit in this case will not end with the larger cash income from this one crop. Enough well-bred, prepotent seed was secured to plant the entire acreage this year and thus the profits from that first small outlay for seed corn will be materially augmented by the increased yields from succeeding crops.

Another farmer planted eighty acres with Boone County White. The yield from this field was nearly twenty bushels per acre more than that from any other field on the farm. The seed from these eighty acres cost \$25, and the farmer figures that the net profit from the investment amounted to the handsome sum of \$600. No comment is necessary.

CORN-BREEDING IS FOR EVERYBODY.

Pure-bred seed corn will increase the yield per acre. The important point for our consideration is the fact that corn-breeding is not for the few. This work, which must prove of unbounded value to corn-producers, is not hedged about by impassable barriers. Far from it. On the contrary the system of breeding is so simple and practicable, and, withal, so scientific and profitable that it can not fail to appeal strongly to every thoughtful corn-grower who is intent on maintaining a leading position in corn production.



I. W. C. T. Stands for Illinois Wire Cotton Tie, the best tie ever devised. In point of economy has no equal. It combines strength and durability, ease and rapidity of application, and is adapted to any press. No breakage and the wire never slips, hence the greatest density is maintained. Endorsed by Ginners, Compressors, and Exporters. Write for circular and prices.

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HOW TO BREED CORN.

The system of breeding is as follows: Buy pure seed, in the ear, of the variety selected for improvement, from a reliable breeder. This plan insures seed of the best type and greatest prepotency and enables the grower to start at the point which it has taken the breeders many years to reach. Examine the bushel or more of corn very carefully and select thirty or forty ears for the breeding plat which show the greatest number of desirable type characteristics. Shell off the tips and butts of these ears and plant three kernels in a hill by hand carefully covering with a hoe. When the hills and three feet six inches apart each way a field twenty-eight rows wide and one hundred and twenty-seven hills is an exact acre. This is a field of convenient size and shape. Plant each row with corn from a single ear. The corn which is left can be planted around the seed plat to protect it from foreign pollen. The most difficult problem is to keep the variety pure and free from all mixture. The difficulty arises from the fact that pollen from other fields will drift for a long distance. The breeding plat, therefore, should be in an isolated spot, if possible, or surrounded for a distance of forty rods with corn of the same variety. This is an important point for the reason that cross fertilization with inferior and barren stalks, even of the same variety, is detrimental to the development of desirable variety characteristics and the weeding out of unfavorable types. The best corn land on the farm should be selected for the breeding field. The preparation of the seed bed should receive most careful attention and should be of such a character as to insure favorable conditions for germination and plant growth. The cultivation should be such as will conserve moisture and remove all weeds without injury to the roots. As soon as the tassels appear and the ears begin to set, it is necessary to go through the field several times, every other day and remove all weak, inferior and barren stalks and suckers. It is impossible to give too much care to this work, for every inferior and barren stalk produces pollen which will fertilize the seed of the plat. Cross fertilization of this kind must be prevented; otherwise, little progress can be made toward establishing a prepotency for the production of fruitful, vigorous stalks which develop uniform ears of desirable type and quality. At the Illinois Station, in five years, as a result of this weeding-out process, the per cent of barren stalks has been reduced from 60 per cent to 12 per cent. In the fall each row should be husked separately. Examine the ears from each row and select for next year's breeding field from those rows producing the largest proportion of ears true to type. The ears which have produced this large proportion of desirable ears must be prepotent. It is the business of the corn-breeder to improve his corn by selecting and planting these ears which have inherited this prepotency.

When this plan is pursued and the same type of ear selected year after year, a marked improvement in type and quality gradually adds to the value of the variety for seed purposes. If the breeding has been for the purpose of changing the composition of the kernel,

the results may mean much to feeders, stockmen, and glucose factories. This is true, for if the per cent of protein can be increased by breeding, the corn becomes more valuable as a feed for live stock because it is more nearly a balanced ration. On the other hand, an increase in the oil content is of great importance to the glucose factories and by decreasing the per cent content of these elements a larger per cent of starch is obtained. After the best ears have thus been selected for next year's breeding plat, the farmer will have a large quantity of well-bred seed for planting his entire acreage. In this way he can economically provide himself with choice seed corn every year which he has gradually suited to his latitude and soil conditions. Experience has taught many corn-growers that it is very difficult and expensive to obtain seed corn of this quality when they seek to secure it from others.

The vitality of all seed corn should be tested. Only vigorous seed with strong germinating power can be depended upon for a full stand. The following is a simple and practicable method of testing for vitality: Fill an ordinary china plate with sand and saturate it with water. Select three kernels from each ear, one from near the tip, one from near the middle, and the other from near the butt. Place the kernels in the sand point down, and turn a smaller plate over the first to prevent too rapid evaporation of moisture. Set the plate in a warm room. Keep a record of the time and number of kernels sprouted. If the seed is of high vitality at least 95 per cent should germinate within five days. If this result is not obtained better seed should be secured.

In concluding this subject I would not in any sense underestimate the importance of the work of many farmers, which has for its object an increased yield of corn per acre. You will agree with me, however, that the practicable system of corn-breeding which we have outlined gives greater promise of yielding a suitable reward in profit than any other. That a larger number of farmers may enjoy a share of this reward is my reason at this time for making this plea in behalf of better practices in breeding and improving our varieties of corn.

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CORN HARVESTERS. It cuts and throws it in pile. One man and one horse cuts equal to a corn binder. Price \$12. Circulars free.
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ALFALFA FOR FALL SOWING, SEED. New Crop; thoroughly re-cleaned, evenly graded, no chaff nor waste to pay for. Write for prices. In bushel or car-lots.
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SEED BEARDLESS WINTER WHEAT

Why grow anything but the best? I have two varieties of beardless winter wheat, which yields from 35 to 40 bushels per acre. Has stiff straw, consequently does not blow down or lean over like Turkey Red, is easily handled in harvesting, shocking, and in stacking; no beard or dust; a nice, clean, bright grain. This wheat does not winter-kill, has been tested with 200 varieties, Turkey Red included, had less winter-kill than any of the 200 tested. Big Frame is a white wheat, Early May is bright red wheat; either kind \$1.50 for single bushel \$1.25 over two bushels, well cleaned f. o. b.

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Imported "Malakoff" Winter Seed Wheat

50 Bu. per Acre; Product of our own crop; grown from seed imported by us last year from near Black Sea, in Crimea, Russia. Price \$2.00 per Bu. here, bags free. All other leading sorts of seed wheat, both hard and soft, \$1.00 per bu. and up. Write for free catalog, samples and descriptions. Address, **J. R. RATEKIN & SON, Shenandoah, Iowa.**

The Stock Interest.

THOROUGHBRED STOCK SALES.

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

- August 22, 1902—Harry Sneed, Smithton, Mo., and McFarland Bros., Beaman, Mo., Duroc-Jersey hogs at State Fair, Sedalia, Mo.
- September 2, 1902—L. M. Monsees & Sons, registered saddle horses, mules, and registered Poland-Chinas, at Smithton, Mo.
- September 8-13, 1902—Kansas State Exposition, Topeka, O. P. Updegraff, Secretary.
- September 17, 1902—J. F. Finley, dispersion Short-horn sale, Breckinridge, Mo.
- October 1, 1902—Wm. Plummer, Poland-Chinas, Barclay, Kans.
- October 7-8, 1902—J. S. McIntosh, Kansas City, Mo. Shorthorns.
- October 12, 1902—Newton Bros., Whiting, Kans., Duroc-Jersey swine.
- October 15, 1902—Combination sale of Poland-Chinas at Clay Center, Kans., J. E. Johnson, Manager.
- October 18, 1902—J. W. Dawdy, Abingdon, Ill., and D. L. Dawdy, Arrington, Kans., at Galesburg, Ill., Shorthorns.
- October 20, 1902—E. E. Axline, Poland-Chinas, Oak Grove, Mo.
- October 21 and 22, 1902—Herefords at Kansas City, Mo., under auspices of American Hereford Cattle Breeders' Association. (Week of American Royal.)
- October 22-23, 1902—Combination sale of Berkshires, at Kansas City, Mo. (Week of American Royal.)
- October 23, 1902—J. E. Davis, Duroc-Jersey, Fairview, Kans.
- October 20-25, 1902—American Royal Swine sale. Berkshires, and Poland-Chinas, Kansas City Stock Yards.
- October 31, 1902—J. C. Hall, Hallsville, Boone Co., Mo., at Centralia, Mo. Shorthorns.
- November 1, 1902—H. M. Kirkpatrick, Farm sale of Poland-Chinas, Wolcott, Kans.
- November 3, 1902—Peter Blocher, Richland, Shawnee County, Kans., Duroc-Jersey swine.
- November 6, 1902—Thos. Andrews & Son, Cambridge, Neb., Shorthorns.
- November 7, 1902—Manwaring Bros., Lawrence Kans., Berkshires.
- November 10, 1902—Branstetter, Robinson & Wright, Shorthorns, Vandalia, Mo.
- November 13, 1902—Geo. W. Berry, North Topeka, Manager. Combination sale of Berkshires. Manhattan, Kans.
- November 14, 1902—Harry E. Lunt, Poland-Chinas, Burden, Kans.
- November 15, 1902—A. B. Mull, pure-bred Poland-Chinas, Iola, Kans.
- November 18-19, 1902—Marshall County Hereford Breeders' Association Sale, Blue Rapids, Kans.
- November 22, 1902—Col. J. F. True & Son, Newman, Kans., and Preston Wycokoff, Rome, Kans., Shorthorns, at Wellington, Kans.
- November 23-25, 1902—W. P. Harned, Vermont, Mo., and F. M. Marshall, Blackwater, Mo., at Kansas City, Mo., Goddy Shorthorns.
- December 4 and 5, 1902—Herefords at Chicago, Ill., under auspices of American Hereford Cattle Breeders' Association. (During week of International Cattle Show.)
- December 8-9, 1902—J. E. Logan and Benton Gabbert & Sons, Kansas City, Mo., Herefords.
- December 16, 1902—Gifford Bros., Manhattan, Kans., Shorthorns.
- December 19, 1902—Hanna & Co., Howard, Kans., Percheron horses, at Kansas City.
- January 12-17, 1903—C. W. Armour and Jas. A. Funkhouser, Herefords, at Kansas City, Mo.
- January 28-29, 1903—C. A. Jamison, Peoria, Ill., Shorthorns, at Chicago.
- February 17, 1903—Geo. F. Kellerman, Shorthorns, Kansas City, Mo.

Modern Pork Production.

PROF. C. F. CURTIS, IN THE FARMERS' TRIBUNE.

The archaeologists tell us that swine have been domesticated over 4,900 years. They are now more widely distributed than any other domesticated animal, inhabiting nearly every part of the globe outside of the polar circles. All modern breeds and types have doubtless originated from the wild hog of Europe, Asia and Africa. No animal under domestication undergoes changes more readily, or is susceptible of more rapid modification and improvement. No domestic animal multiplies so rapidly, with the single exception of the rabbit. The possible produce from a single sow in ten generations is estimated by a French mathematician at six million, not including the male offspring. No other domestic animal is capable of converting the feed stuffs of the farm into finished meat products so economically. The ability of the hog to render the highest returns for feed consumed has given him the well deserved appellation of mortgage lifter of all nations, and civilized man's chief reliance in the arts of peace and war, for no nation can now engage in a prolonged struggle of any consequence without first carefully calculating the potentiality of American pork products in sustaining the soldier. The modern hog is capable of making from every bushel of corn consumed from twelve to fifteen pounds of pork of a superior quality. The choice parts of this pork, finished in its best form, are worth from 20 to 30 cents per pound at retail.

Under domestication the hog undergoes many changes, first among which are the enlargement of the digestive organs, giving greater capacity and depth and length of body, accompanied by a diminution in the size of the tusks and the muscles of the neck and shoulder. Increased digestive capacity gives earlier maturity and propensity to fatten. It is not long since even the so-called improved breeds were very slow in maturing. In 1842 the Woburn hog, which was one of the popular strains of the day, was described as a very large hog requiring from eighteen months to three years to reach maturity.

In the refinement and improvement of these early types, the Siamese breed was largely used. According to Professor Low, an eminent authority, it is to this breed that the Berkshire and other modern breeds of England owe



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DEALERS SELL THESE INTERNATIONAL STOCK FOOD INTERNATIONAL WORM POWDER INTERNATIONAL GALL CURE INTERNATIONAL POULTRY FOOD INTERNATIONAL COLIC CURE INTERNATIONAL HARNESS SOAP INTERNATIONAL LOUSE KILLER INTERNATIONAL HEAVE CURE SILVER PINE HEALING OIL ETC

their improvement. The need of regeneration and improvement is apparent from an examination of illustrations said to be reproduced from life representing the old English and the Berkshire breeds in Domestic Animals by Low in 1842. The Siamese was the opposite of the prevailing type of hog of that day.

The hog's superior capabilities of converting farm feeds into meat products renders it the most profitable animal domesticated on our farms and pork production the most profitable industry of American agriculture in spite of the ravages of hog cholera. This dreaded scourge gives no evidence of yielding to any of the loudly proclaimed methods of treatment or inoculation, but to the man who gives his hogs the range of all or the greater part of a fair-sized farm and who applies vigorous measures of isolation, disinfection and eradication, the disease is largely robbed of its terrors. It is generally conceded that there is no certain specific against hog cholera, but the free and extensive use of good grass, roots and succulent feeds will do much to maintain a healthful condition that will afford a reasonable safeguard against many forms of disease. The hog in the wild state is naturally an herbivorous animal and under domestication it would be much more herbivorous in its appetite if it had a chance. The grazing characteristics of swine should by no means be allowed to become extinct, but cultivated and perpetuated as a most useful quality. It will be conducive to harder hogs, cheaper production and better pork products.

The American people are practically fond of pork as an article of diet and the American farmer is eminently successful as a pork producer. The two conspicuous and most successful features of American agriculture are corn and pork production. Our resources in this field, however, have scarcely begun to develop, and the quality of our products has not yet approached the standard of perfection. One has but to sit at an English breakfast table and partake of the celebrated Westphalia ham or delicious Wiltshire bacon to realize that our American pork products have not yet reached the standard of excellence demanded by the most exacting foreign markets. We produce a larger surplus of pork products than any other country, but it must be admitted that American pork is the cheapest product in the leading markets of the world. There is no good reason for this, even though the American farms are capable of producing pork more economically. Corn is primarily the hog feed of the greatest hog producing states, and no other feed will displace it as an economical and practical ration for pork production. The inferior quality of American pork can not be properly attributed to the corn ration, as is frequently claimed. Recent investigations by the government experiment stations and by practical feeders in the United States, Canada, Great Britain and Denmark, have demonstrated that corn judiciously used in combination with other feeds to the extent of one-third or one-half the ration is not necessarily injurious to the quality of the bacon produced, provided other conditions are right, and we are already producing some of the finest bacon products in the United States that can be found in any country, a large part of which finds

its way abroad in the pickled or mild cured form and eventually reaches the consumer in Great Britain bearing the brand of Irish cured or Wiltshire bacon. The entire trend and effort of the American swine grower for about half a century has been in the direction of producing the broadest bacon from the fattest hog that science, skill and human ingenuity could evolve. This process set in and continued during the greater part of its progress under conditions of high priced lard when fat backs were a prime quotation in all of our leading markets. The tendency of late has been in a different direction. Cotton seed products and other substitutes have largely displaced lard, and the tendency of the consumer, both at home and abroad, is decidedly in favor of leaner meat products of all kinds.

The 1,800-pound bullock and 200-pound wether have disappeared from our markets and the over-fatted hog with his extreme weight and waste is no longer wanted. There are also other considerations besides the proportion of fat and lean. The tendency to push our hogs to early maturity by extreme forcing and selection for the form giving excessive obesity has also a tendency to soften tissues and a more flabby-sided carcass than can be combined with superior quality of the finished product. Fine grain, firmness of texture and a comparatively even distribution of fat and lean are the prime essentials in high class pork products. These are the result, first of heredity, and second of judicious feeding of wholesome, flesh-forming feed products, succulent feeds, grass and abundant exercise. It is not to be expected that our country will in the near future, if ever, take rank with Denmark and Canada in the competition for the higher grades of bacon on the foreign markets, but the demand for better pork products for our home and foreign markets has already manifested itself in such a way as to command the attention of the farmer and producer. The change will undoubtedly come as a result of the modification of the type of our present popular breeds, rather than through supplanting them with foreign breeds of the bacon type, although there is already a rapidly growing demand for hogs of greater activity, vitality and vigor and more prolific breeding qualities; and from the result of three years' investigation in determining the cost of pork production and the relative value of the finished products with various breeds of hogs at the Iowa Experiment Station have been published in bulletin 48 and may be summarized in the statement that there is no material difference in the cost of a pound of pork in the feed yard by the different breeds. Of course the corn belt type fattens much more readily than the other, but they are not capable of making much, if any, greater gains in a given period or from a given amount of feed. The difference is due chiefly to the kind of product made from the feed rather than any variation as to the amount. The market demands have also changed in reference to the valuation put upon the different cuts; while the American breeds of swine were in process of formation and development, hams were the high-priced products. To-day they take second rank and the higher-priced cuts are the sides which produce the bacon. The width of back and development of the

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Freeport, Ill., June 1899.

Dr. B. H. DeHuy, Denver, Colo.

Dear Sir:—Knowing, as I do, the excellent merits of your Balmoline, as practically demonstrated by its use under my personal observation. I am thoroughly satisfied that for chafes, galls, cracked heels, and all flesh wounds it stands at the top of the list. MYRON E. MCHENRY.

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CURES Mange and Itch; KILLS Lice, Ticks and Screw-Worms; HEALS Cuts, Wounds, Galls and all Sores. GUARANTEED to do the work without injury to eyes or other parts of animal. At dealers or by express, prepaid, \$1.50 per gallon. 25 cent cans—dealers only. Special price in quantities. Write to-day for book and free trial Car-Sul. Address MOORE CHEMICAL CO., 1501 Genesee St., Kansas City, Mo.

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LUMP JAW.
A positive and thorough cure easily accomplished. Latest scientific treatment, inexpensive and harmless. NO CURE, NO PAY. Our method fully explained on receipt of postal. Chas. E. Bartlett, Columbus, Kans.

ham are therefore subordinate to the length, depth, fineness and smoothness of side, and I believe that our American breeds are certain to undergo a modification governed by these condi-

tions in the near future. This modification will also be conducive to greater vitality and more prolific breeding qualities, which the farmer or producer for the block so much desires and the breeder of pure-bred stock and the expert judges should not lose sight of the demands of the producer and the considerations of practical utility and profit.

Ration for Driving Horse With Light Work.

Mr. W. R. S., Winchester, Va., writes: "Under the heading Horse Talk in a farm journal I read these words: 'Very little hay should be given in the morning and none at noon, the bulk being fed at night.' Will you be so kind as to tell us what we should be fed at noon if we are to give no hay? You will oblige many readers who have not had much experience in the care of horses, if you will give a proper daily ration for the driving horse that weighs 1,050 pounds, stands in the stable, does no heavy work, is idle most of the time, light driving being all that is required. We should like to know the amount of hay and grain that should be fed and the proportion at each feed, for the horse of the above weight and condition."

As yet the Kansas Agricultural College and Experiment Station has no driving horses to feed. For the benefit of our correspondent and others the above inquiry was submitted to four different livery men in the town of Manhattan. These men recommend the following daily rations:

No. 1. Prairie hay 15 pounds, 5 pounds in the morning, 10 pounds at night; oats 6 quarts and bran 3 quarts mixed and divided equally between three meals.

No. 2. Prairie hay 3 to 4 pounds in the morning, 1 to 2 pounds at noon and 9 to 10 pounds at night; oats 6 quarts per day divided equally between three meals. Now and then substitute a quart of bran in place of a quart of oats.

No. 3. Prairie hay 10 to 15 pounds per day, one-third to be fed in the morning and two-thirds at night; oats 16 quarts and bran 3 quarts, mixed and divided equally between three meals.

No. 4. Prairie hay 15 pounds per day, a little over one-third being fed in the morning and the balance at night; corn chop 6 quarts; bran 2 quarts mixed and divided equally between the morning and night feeds; at noon feed 4 quarts of oats.

In every case except one no hay is fed at noon and then the quantity fed is very small. Prairie hay is the favorite roughness and the quantity is limited. Too much hay unduly enlarges the stomach, which aside from an undesirable appearance presses on the lungs and tends to make the horse short winded.

Ration No. 1 agrees very closely with that used by the U. S. cavalry and artillery which consists of 14 pounds of hay and 12 pounds of oats, corn or barley per day. A grain ration for a driving horse should be varied somewhat by the amount of exercise he receives. For a horse receiving no more exercise than that described by our correspondent, 10 to 12 pounds of grain per day is doubtless sufficient. Any of the above rations with the allowance of grain modified according to the amount of exercise received, ought, with intelligent handling, to give satisfactory results.

D. H. OTIS,
Kansas Experiment Station.

Horses for the Farm.

FROM PRIZE ESSAY IN THE INDIANA FARMER.

There has been a mania among the average farmers to cross breed in all of our domestic animals and the result has been that we have a mongrel set of mares to start from and can not get a very definite type of horse from such mares, for like begets like and blood tells. Well, you ask, what shall I do with my mongrel mare? I say breed her and then breed her progeny, in the same line, and not jump from the draft to the race horse, and then from the race horse to the draft. If you do not like the draft try the coach horse, but leave the race horse to the jockey and the gambler, for there is not one in a thousand that brings its thousands, and if they do it is after they have left the farmer's hands, at a nominal price. My experience in fall breeding of my farm mares was very satisfactory. My colts came the last of August or the first of September, a leisure time for farm mares; kept in a warm stable through winter, weaned in spring and turned on grass, the mare is ready for farm work, and without much loss in the busy season; and then you have more time to look after your mare and colt, for the

colt should never know when it is broken, or in other words that it was ever broken. I do not want to deter you from having a good buggy horse, but I would let the other fellow raise him; or you may often get a good buggy horse in breeding your mongrel mares to draft stock, for you can not tell what you may get in the first cross; but breed for a definite type. You may ride on the steam car, electric car, automobile or bicycle, but the average man will prefer his horse and buggy. Give me a stylish sixteen-hand high, fourteen to fourteen hundred pound horse to a buggy, and you may ride on all the rattle traps you like. The horse is here to stay.

Horse breeding or horse raising should be just like everything that a farmer undertakes. First, select the breed that you like best. Second, breed to the best that you can find. The best are none too good for the farmer, and he will find that it pays to breed to the best, regardless of cost of stud fees. A man had better pay \$20 for a colt that will mature into a horse that will sell for \$150 to \$250 rather than pay \$5 to \$10 for a colt that he can't sell, or get only \$100 for. The trouble in this neighborhood is that the former counts his fee money first; then hunts the stallion that he can get for the least money. Then he wonders why he can't sell his horses for as much as his neighbor does. Breed to the best stallion you can, regardless of fee. I prefer the draft breed for the farmer. I think there is more money in the draft horse for the farm or for market, than any breed of horses. They are easy to raise, and you can always sell them any time after they are weaned, at good profit. In the draft you are more apt to get an even lot of colts than the light breed. If you breed trotters you will have to wait till they are broken. If they show speed you can sell at a good profit, if they don't show speed they are no good for anything. I say farmers should breed drafters and breed the best.

While my experience as a horse raiser has not been very extensive, still I have raised in the haphazard sort of way, several colts, and believe that I have derived some valuable lessons that might be profitable to others by enabling them to avoid some of the mistakes that I have made. When I first thought of raising colts the Norman craze was at its height, and horses being too high, any sort of a colt was selling for \$50 at weaning time. Without much study or thought I raised a couple of Normans, partly because it was convenient and partly because it was fashionable. Just about this time, on account of their color, the Normans became unpopular. Their many good qualities were forgotten and everybody said: "We must raise horses of a better color, because grays are too hard to keep clean." My fancy was then attracted by a Redback, but the colt being too small, I then tried the Cleveland Bays. About this time the public began to clamor again for more size and a nice large, black Norman coming into the neighborhood I again raised a Norman, and was well pleased with it. The draft breeds are most profitable to the general farmer, and next in order are the Coachers. After beginning with the Normans, my mistake was in not sticking to them, because, with the exception of color, they were just the kind of horses I needed and they would have sold most any time for good money. The text is: "Select one breed and then stick to it through thick and thin."

World's Meat Shortage.

COL. JOHN F. HOBBS, IN THE LIVE STOCK JOURNAL.

The flocks and herds of the United States have really been at a standstill during the last twenty years, while the population has been increasing at an astonishing rate, widening the ratio between the two. Great Britain's flocks and herds have, if anything, gone back, while the population has gone ahead. The flocks and herds of Ireland have virtually been stationary for a quarter of a century.

Twenty-five years ago France had 188 head of live stock per 1,000 acres of her area. She now has 164 head, or a dead loss of 24 head per 1,000 acres of the country. Denmark had 197 head per 1,000 acres then and 115 head now, or a loss of 82 head per 1,000 acres. Germany, a quarter of a century ago, had three times as many sheep per head or population as now. The Fatherland now has fewer cattle per capita of the people than then. Holland and Switzerland have only half as many sheep per head of population now as they had two and a half decades ago, and Belgium only a fourth as many. In these countries during that time the flocks of sheep alone have actually decreased

from 104,000,000 to 75,000,000, showing an actual loss of 28 per cent. At the same time the increase in the population was 25 per cent, thus making the comparative loss much greater. The combined population of Germany, France, Austria-Hungary, Switzerland, Sweden, Denmark, Belgium and Holland twenty-five years ago was 140,000,000. This human family has now increased to 173,000,000 people, or 24 per cent. In the meantime the combined herds of cattle of these countries have only increased from 48,000,000 to 58,000,000 head, or about 20 per cent. The above figures show that there are only 58,000,000 head of cattle to feed 173,000,000 people, whereas there are 67,000,000 head in the United States to a population of 76,000,000 people; nearly 100,000,000 people less than there are in the above continental countries. The flocks of those same nations are in a worse relative position, and their hogs, comparatively, are a small commercial item.

It was about thirty years ago (1872) when the packing plants of the United States were in their infancy and Europe was beginning to feel the pangs of hunger caused by the widening ratio between live stock and human stomachs, that refrigeration stepped in and made the existence of an international fresh meat trade possible. It was then that American fresh beef began to creep into the English market. A few years later, in 1880, the Australian frozen meat trade began. South America followed in the same line many years after that.

The need of Continental Europe, barring Russia, and possibly France, for American meat products may be illustrated to a somewhat exaggerated degree by the needs of Great Britain, whose herds and flocks, per head of population, about equal those of continental nations, but whose people are much larger meat eaters than the inhabitants across the English channel.

In 1874 the United Kingdom imported from all sources 500,000,000 pounds of meats. In 1899, twenty-five years later, she imported 1,700,000,000 pounds. As the population has not increased over 25 per cent and the edible herds have remained stationary, the excess is due to increased per capita eating.

The relative scarcity of meat upon the Continent is readily seen by the excessively high prices paid there for all carcass meats. These prices average 100 per cent higher wholesale than similar meats sell for in the United States, and 30 to 50 per cent higher than they do in England, even in the face of the fact that labor and other Continental items of production are cheaper than either in Great Britain or the United States.

The growing scarcity of the world's edible meats is produced by the two causes previously named: the faster increase of the human race in proportion to the increase of abattoir animals, and the improved condition of the working classes, which causes a greater per capita consumption of meats than existed two decades ago. The per capita consumption of meats in the United States has increased fully 25 per cent during the last fifteen years. In Great Britain it has nearly doubled in the same time. On the Continent the demand as measured by the very high local prices of meat has largely increased, but the increased consumption has been limited by the virtual exclusion of foreign meats, and the insufficiency of the domestic herds to supply the local demands. With improved industrial conditions and continuing high meat tariffs, or other means for excluding the surplus of other countries the masses of the Continental nations must desist from meat eating or pay exorbitant prices for this essential staff of life.

Large available pastures and extensive ranges mean nothing in the face of the inexorable fact that the world's annual consumption of live stock is greater than the yearly increase of its flocks and herds. This relentless hunger of mankind gives no chance for an increase of live stock. In the meantime the population of the human race is still further increasing and widening the gap between stock and people, in spite of propagation theories and efforts to replenish the loss.

Even now Asia and Africa kill full 40,000,000 goats annually, and the poorer classes of some civilized countries supplement the supply of meat by the slaughter of horses, asses, dogs and felines.

The taste of the human palate leans to beef and pork. That is the popular meat diet of the world. It is a remarkable fact—verifies the above—that the hog and cattle herds of the earth have practically stood still for over twenty

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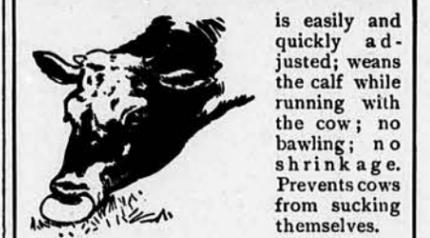
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Positively Prevents Blackleg. Treatise free.

PUBLIC STOCK SALE AT THE TOPEKA STOCK YARDS, TOPEKA, KANSAS, August 27, 1902. 220 HEAD

25 head 3- and 4-year-old steers, weight 1,250 pounds; 50 head 3-year-old steers, weight 1,100 pounds; 25 head 2-year-old steers, weight 1,000 pounds; 25 head 2-year-old steers, weight 900 pounds; 50 head 1-year-old steers; 15 head 2-year-old heifers; 10 head 1-year-old heifers; 10 calves; 1 Hereford bull calf; 1 Hereford bull, 1 year old; 6 head good mares, 4 years old; 3 head good geldings, 4 and 5 years old.

All these are extra good native cattle. The steers are in good flesh and ready to go into the feed lot. This is the best lot of cattle ever offered in Shawnee County at a public auction.

TERMS OF SALE:—6 months' time at 4 per cent interest from date; 4 per cent off for cash. Cattle will be cared for free of charge until day following sale. All notes must have approved security. Sale will commence at 1 o'clock sharp.

EVERYBODY INVITED TO COME. COLONEL CREWS, Salesman.

HUGH A. HODGINS, TOPEKA, KANSAS.

years, and the sheep flocks have rapidly and enormously increased in the new countries. Glance at the three chief of these sheep-growing countries—Argentina, the United States and Australia. They show this: In 1830 Argentina had 2,500,000 sheep, 41,000,000 in 1870, and 90,000,000 in 1900. The United States had, in 1830, a few millions of sheep, 42,000,000 by a liberal count in 1880, and 62,000,000 in 1900. Australia's flocks increased from a few thousands in 1830 to about 90,000,000 in 1880 and 110,000,000 in 1900, despite the loss of 30,000,000 sheep in New South Wales alone during the last ten years. The flocks of Europe have largely decreased. The continued increase in population along with the failure of edible live stock to multiply in proportion

will inevitably make the meat diet a generally high-priced one so long as the improved condition of the masses enables people to buy and eat more meat than formerly. The elimination of consumers by a more widely spread condition of poverty amongst the populace is the only hope for low-meat prices. Such general pauperism would lead further to vegetarianism and to deplorable economic conditions everywhere.

The Lincoln Hereford Sale.

The five large breeding establishments that will join in making the combination sale of Herefords on the Nebraska State Fair Grounds at Lincoln, Tuesday, September 4, are offering a fine lot of cattle, cattle that are a credit to the breed and to their owners, and of the kind that are in demand wherever there is a desire for the best means of producing the best beef in the most profitable manner. It is especially a matter for congratulation that this initial sale should bring together five breeders so well known and who have the right kind of cattle in their herds. It insures a high-class offering and satisfactory treatment, two important requisites of a successful sale. The Stanton's Breeding Farm Co. is Nebraska's second largest breeding herd, and the cattle that have gone from this establishment year after year have been such as to make it a recognized source of supply for good stock throughout the entire Northwest. Their offering on this occasion is a good one, in every way up to the high standard set by previous consignments. The Missouri farm of C. G. Comstock & Son is contributing a representative lot of bulls and females that are of the right ages and in the right condition to be profitable purchases. Their consignment is by such sires as Heslod 14th and Heslod 53d, sons of Mr. Funkhouser's Heslod 2d; Bluegrass, a son of Beau Real; Captain Grove 2d, a grandson of the Grove 3d, and Gentry Lars, undefeated as a two-year-old in the big shows of 1900. Lowell, Barroll & DeWitt, of Denver, are offering a splendid lot of cattle; they are especially strong, vigorous individuals. It will be remembered that this firm purchased the old Scott & Whitman herd, formerly located at Leavenworth, Kans., and removed it to Colorado, where the high altitude and severe winters have resulted in giving the cattle strong constitutions and good coats of hair without the sacrifice of their original high quality. L. L. Young's consignment is fewer in numbers than the others, but it contains animals of the very best individuality and breeding. Mr. Young is including, besides some of his own breeding, some extra good ones that he has purchased at former sales, at a number of which he was a heavy buyer of the best stock offered. The herd of W. N. Rogers, of McCook, is, perhaps, better known in the show ring than any other of Nebraska's Hereford herds, and the cattle consigned to the sale fair week are of the same blood and of the same general good quality that have won ribbons for Mr. Rogers. These cattle have the size and individuality that makes them most desirable, and they should not be overlooked by the buyer who wants the best. The entire consignment of seventy-five head are good ones, and State Fair visitors are invited to look them over whether they wish to buy or not. Catalogues are now out and may be had by writing C. A. Stannard, Emporia, Kans.

Mr. J. M. Rhodes, Frankfort, Kans., is credited with receiving \$8.00 per hundred on the tailings of his season's cattle feeding. Two loads of Galloway steers weighing 1,214 lbs. as long yearlings were the consignment with which he won this price. As stated, they were the tailings of a lot of 120 head with which he had before topped the market. Mr. Rhodes knows how to feed.

Newton Bros., Whiting, Kans., write that their herd of Duroc-Jersey swine is now in excellent condition, and that by Oct. 13, their annual sale date, they expect to have as fine a lot of this breed of hogs to offer as ever went into the sale ring. Their summer farrows have been excellent in quality and large in number. Their annual sale will be held at Whiting on Oct. 13, when they will offer 100 head of these popular hogs. Twenty of these are of the fall and winter of 1901 farrows and are all females. The balance will be February and March pigs of both sexes and will be the choice of 130 head. It is conceded that the hog will turn money faster than any other domestic animal, and it is claimed that the Duroc-Jerseys are more rapidly productive than any other breed of swine. The moral is obvious. Buy some good swine.

Mr. A. J. Lovejoy, Roscoe, Illinois, President of the Inter-State Fair Association and Superintendent of the Illinois State Fair is a Berkshire breeder of note. On Aug. 6 he held a sale of Berkshire hogs at his home town, in which he broke the world's record for average price of this breed. His average at this sale was \$107.80 on all the hogs offered. This average has only been approached once before and this was at Biltmore, N. C., in 1900, when the average reached \$101.00. At the Lovejoy sale fourteen states were represented by about 150 prominent breeders who came all the way from California to Florida. W. C. McTavish, Coggin, Iowa, topped the sale by paying \$350.00 for Conqueror.

Activity by the American Aberdeen-Angus breeders' Association this year is indicated by announcement of plans to participate in 14 state and other shows. Premiums appropriated are:

Chicago International Live Stock Show	\$4,300
Kansas City Show	2,500
Pittsburg Fat Stock Show	500
Illinois State Fair, Springfield, Ill.	300
Indiana State Fair, Indianapolis, Ind.	300
Iowa State Fair, Des Moines, Iowa	300
Minnesota State Fair, Hamline, Minn.	300
Missouri State Fair, Sedalia, Mo.	300
Ohio State Fair, Columbus, Ohio	300
Wisconsin State Fair, Madison, Wis.	200
South Dakota State Fair, Yankton, S. D.	200
Nebraska State Fair, Lincoln, Neb.	200
Kansas Hutchinson Fair, Hutchinson, Kans.	200
San Antonio International Fair San Antonio, Texas	200
Lexington Kentucky Fair, Lexington, Ky.	200
Canadian Toronto Industrial Show, Toronto Ont.	100
Canadian Winter Provincial Fair, Guelph, Ont.	100

Sales of pure-bred Angus cattle will be held under the auspices of the association at Kansas City, October 22d and at Chicago December 2d and 3d. W. C. McGavock of Mt. Pulaski, Ill., will manage them. For a long time the Kansas Farmer field men have been hoping to find a herd of pure-bred Poland-China swine from which could be drawn herd-headers of such quality as would be able to correct faults and deficiencies found in other herds. Many of the breeders of pure-bred Poland-Chinas have been led into breeding too fine and they reach the time when it becomes necessary to use herd-headers of more bone and vitality in order to maintain the ideal type. We have now found just such a herd. Mr. Andrew Pringle, Eskridge, Kansas, has a herd in which Tecumseh blood largely predominates and which is characterized by large bone and length of body without coarseness. They are just such animals as hundreds of breeders would buy if they could but see them. Embodying as they do the best blood from the best strains and having all of the qualities desirable in a typical Poland-China, with the added strength of good constitution, good bone, good head and ears, good coat, and standing right up on their toes, they make a most desirable quality to use. We are confident that if breeders could see these swine they would make every effort to own some of them, and any breeder who needs this quality of stock may describe what he wants and send his order to Mr. Pringle with absolute confidence. He is a man whose word is perfectly reliable.

Model Blue-Grass Farm Herefords.

Overton Harris, Harris, Sullivan County, Missouri, who has been a most important factor in American show yards during the past few years, was recently visited by a representative of this journal, and an inspection of the cattle gone through with. Mr. Harris is admirably located upon twenty-six hundred acres of land, appropriately christened "Model Blue Grass Farm." Here the cattle roam at their own sweet will in grass knee deep. Here the great Benjamin Wilton did such noted service that he was justly ranked with the greatest Hereford sires the breed has ever produced. Show yard winners of the highest order, the get of this wonderful bull, have often carried the coveted blue for the Model Herd. Unfortunately for Mr. Harris and the Hereford breed this great bull met death by lightning stroke during a recent thunder storm. About sixty of the matrons in the herd are well forward in calf to him, and from this produce and the produce now on the farm by him the Benjamin Wiltons will be show yard factors for some years to come. This year, beginning at the Missouri State Fair at Sedalia, there will be shown both an aged and young herd, as well as filling the different classes. The Shadeland-bred cow, Russett, the 2-year-old cow, Silver Cup, Lucille, senior yearling, along with some eye-opener calves, will constitute the major portion of the females, and Beau Donald 5th, Goodenough 3d, and several sappy senior and junior calves will make up the male end of the line that will compete for the honors, as this herd will come under review at Sedalia and the various shows throughout the circuit. We refrain at this time from any extreme remarks or comments, sufficient to say that under the skillful guidance of James Price they will be sent forward in condition to measure lances with all comers. Mr. Harris has constantly for sale high-class stock of both sexes and will be pleased to show intending purchasers what he has. Write him for particulars and prices.

Gossip About Stock.

W. B. Van Horn, of Lone Star, Douglas County, is desirous of securing a farm hand. A good man can find permanent employment by applying personally or by letter to Mr. Van Horn.

Many of our readers have been anxious to know where to secure good trained ferrets and such can now be nicely accommodated by our new advertisers, Farnsworth Bros., New London, Ohio, who are breeders, shippers, and trainers of white and brown ferrets.

Parties in quest of a first-class bunch of pure-bred Poland-Chinas or Shorthorn cattle should not fail to visit the Sunflower Herd of Andrew Pringle, Eskridge, Kansas. There is probably no better combination establishment of the two breeds to be found anywhere in the West. Some detailed announcements as to the notable breeding animals will appear in a later issue in these columns.

"The Kansas Farmer brings the buyers," writes Garrett Hurst, of Zyba, Kansas, breeder of Percheron horses and Aberdeen-Angus cattle. Mr. Hurst reports the recent sale of two fine Angus bulls, including Excello Abbott 32245, to W. H. Ketcher, Wakita, Oklahoma. Mr. Hurst still has on hand for sale a number of young bulls, from six to eighteen months, that will be closed out to early buyers at low prices, considering quality and breeding.

F. H. Schrepel, Ellinwood, Kansas, proprietor of the Cheyenne Valley Stock Farm of Percheron horses and Poland-China hogs, reports the unfortunate loss of the sweepstake Percheron mare of last year's fair. He hopes, however, to be out to the principal fairs in Kansas with a good show of horses and hogs. At present he has a few bred gilts and sows for sale and will later have a few young Percheron stallions.

One of the best promoters of improved stock in Missouri is the firm of L. M. Monsees & Sons, of Smithton, Mo., who are now advertising their Twenty-first Semi-Annual Stock Sale of the produce of Limestone Valley Farm, particulars of which is given in their announcement on page 850 of this week's paper. One of the most popular live stock events in Missouri is the periodical fine-stock sales of this establishment. Write for catalogue and mention the Kansas Farmer.

In this issue of the Kansas Farmer will be found the advertisement of the Kansas City Veterinary College, which without doubt is the best equipped college and has the most proficient corps of instructors of any veterinary college in the entire West. They have outgrown their present quarters and are preparing to build one of the finest structures

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tures in the world for veterinary instruction. If you are interested don't fail to send for their catalogue and mention this paper.

H. A. Hodgins, of Topeka, who has done a \$10,000 business this season in the buying and selling of feeders and stockers, announces a public sale to be held at the Topeka Stock Yards, August 27, at which time 220 head will be sold at very reasonable terms, as announced on page 836. Mr. Hodgins has very extensive acquaintance among the cattlemen of the Southwest, and is prepared to give visiting buyers a splendid opportunity to secure a lot of extra good nativesteers that are in good flesh and ready to go into the feed lot. It is not often that an opportunity is offered to buy this class of cattle at auction. This is the first sale of the kind at Topeka.

J. F. Stodder, of Burden, Kansas, is making a fine show of Shorthorns from the Silver Creek Herd and opens the campaign this week at Fredonia, Kansas. During the Oklahoma and Southwestern Cattlemen's Convention, February, 1903, there will be a series of combination sales similar to those held at Wichita last February. The Shorthorn sales will be by J. F. Stodder, Burden, Kansas, and Geo. Bothwell, Nettleton, Mo., and others. The breeders' combination sale of Herefords at the same time under the management of C. A. Stannard, of Emporia, Kansas, and others. The stock sales will occur on February 10-11-12, 1903.

T. B. Babst & Son, of Auburn, Shawnee County, Kansas who recently lost their young Scotch herd-bull, Knight's Valentine 157068, last week succeeded him by the purchase of an exceedingly fine Cruickshank bull, Golden Day, calved June 22, 1901, bred by Hanna & Co., of Howard, Kansas. Golden Day was sired by Imp, Mariner 135024 and out of a cow which Mr. Babst considers the best at Palo Duro Farm. Imp, Mistletoe 15th; the second dam of Golden Day is Mistletoe 8th by Mr. Duthies' great English bull, Pride of the Morning. The third dam is Madamoiselle 6th by the famous Field Marshall. She is also the dam of the \$15,000 bull Mary Hampton. This is one of the most notable bull sales in Kansas this year. Mr. Babst has been well pleased with the calves by Knight's Valentine out of Lord Mayor helpers. Mr. Babst's herd never presented a more uniform excellence than the 150 pure-breds on hand at Valley Grove Farm show. A regular announcement of this breeding establishment will soon appear in the Kansas Farmer.

Mr. J. F. Finley, Breckenridge, Mo., will close out his noted herd of Shorthorn cattle at his old homestead at Breckenridge on September 17. This will prove to be one of the notable events in Shorthorn cattle circles of the entire year. Mr. Finley was recently induced to set a price on his farm adjoining town, and he awakened one morning to find himself homeless. The farm is sold and the herd must go. A representative of the Kansas Farmer was recently out to see the Finley cattle, and finds the herd in a thoroughly prosperous condition, there being above thirty calves to be sold at foot of dam. There will be about seventy head of cattle to be offered in this sale, outside of the calves to be sold with dam. The offering will include a fine lot of pure Duchess cows that will prove one of the rare attractions of the day. This big offering will embrace numerous points of interest, all of which will be brought fully to the notice of Kansas Farmer readers in due time. Remember the date.

T. K. Tomson & Sons, Dover, Kansas, will enter seven head of their splendid Shorthorns in the show rings this fall. These are all the get of Gallant Knight and will compose a young herd. Daring Knight 170761 is at the head of the young herd and is a December yearling of such quality and bloom that he is sure to lead his following well into the money. He will be followed by Belted Knight, a bull under 1 year; Rose Stern 6th and Elderlawn Victoria, October calves; Tidy Girl, a junior yearling, and Rose Stern 8th and the 7th Mary of Elderlawn, calves. It is extremely doubtful if the State fairs or national shows will produce any young herd the get of one bull, that will show the quality and finish of this draft from Elderlawn Herd. When it is remembered that this bunch of youngsters is just fresh from grass and that they have hardly known the

taste of grain in their lives prior to their fitting, the fact that they are sure to carry home a goodly number of ribbons will not be a matter of surprise to those who have seen them.

List of Farmers' Institutes.

- August 22, Highland Station—Albert Dickens.
- August 26, Howard—Albert Dickens, J. D. Walters.
- August 27, Leon—Albert Dickens, J. D. Walters.
- August 28, Mulvane—Albert Dickens, J. D. Walters.
- August 28, Blue Hill—A. T. Kinsley.
- August 28, Union Center—D. H. Otis.
- August 29, Benton—Albert Dickens, J. D. Walters.
- August 30, Canton—Albert Dickens, J. D. Walters.
- August 30, Jennings—A. T. Kinsley.
- September 4, Richmond—Mrs. Henrietta Calvin, Albert Dickens.
- September 5, Garnett—Mrs. Henrietta Calvin, Albert Dickens.
- September 6, Blue Mound—Mrs. Henrietta Calvin, Albert Dickens.
- September 8, Fulton—Mrs. Henrietta Calvin, Albert Dickens.
- September 9, Earleton—Mrs. Henrietta Calvin, Albert Dickens.
- September 10, Altamont—Mrs. Henrietta Calvin, Albert Dickens.
- September 11, Angola—Mrs. Henrietta Calvin, Albert Dickens.
- September 13, Cale—Mrs. Henrietta Calvin, Albert Dickens.

Seed Wheat Proposition.

W. W. Vansant & Son, Farragut, Iowa, have a "winter seed wheat" proposition that should interest readers of Kansas Farmer. They are offering two varieties of winter wheat that have high quality, hardness, and prolificacy to commend them to favor. Their Russian wheat has this year made an average of 4 1/2 bushels per acre in Fremont County. This wheat was imported last year from Russia, and it certainly has given an excellent account of itself in its new home. Mr. Vansant is making a price of \$1.50 per bushel on this high-yielding staple variety of winter wheat, free on board the cars at Farragut. The other variety is the old staple Turkish Red, a good yielder likewise, a plump berry, and always a high grade wheat. This variety is priced at \$1 per bushel. The Vansants are old-time professional seed-growers, and they are prompt and accurate to the letter in filling all orders. If they get your order to-day it is filled tomorrow. That is why they make prices in the advertisement—it saves time taken up in correspondence. If you should want information or samples write very promptly. See the advertisement and mention Kansas Farmer when you write.

The Kansas Farmer is in receipt of the premium list and rules governing the "Fat Stock and Feeders' Show" to be held in Denver, February 23-25, 1903. It is the hope of the promoters of this enterprise that it will prove one of the largest, most instructive and interesting exhibitions of the kind ever given in the West. It is designed to make it as practical as possible, and of purely Western character. The management is anxious to secure the support of the live-stock growers and feeders of the West. Those of our readers desiring detailed information should write to Fred P. Johnson, Secretary, Denver, Colo.

DISEASES OF MEN ONLY.

The greatest and most successful Institute for Diseases of Men. Consultation free at office or by letter. **BOOK** printed in English, German and Swedish, explaining Health and Happiness sent sealed in plain envelope for four cents in stamps. All letters answered in plain envelope. Variococle cured in five days. Call or address

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The Young Folks.

Conducted by Ruth Cowgill.

MY QUEEN.

Could I but touch one golden chord
Of Arion's lyre, or from the muse
One little favor steal;
I'd swell the world with music sweet,
In rhythmic, stately, measured feet,
And sing in thrilling peal—
Not of the fairest I have seen,
But just my queen, my little queen—
My Mother!

How like a sovereign love hath ruled,
How often chained, how often calmed,
This fevered heart of mine.
How, when the tempest thundered wild,
Close to her breast she hugged her child—
Oh! mother—love divine!
Must Time's keen sickle ever glean,
This loving heart, this uncrowned queen,
My Mother?

My panting heart is wearied now,
With knocking long, nor lips nor tongue,
Hath ever yet expressed
A mother's love—there is no tide,
Nor breakers on this ocean wide;
This is the Sea of Rest.
Oh! boatman of the silver sheen,
Spare thou my queen, my little queen,
My Mother!

—Ida Eckert Lawrence.

What to Read.

"What shall I read?" One is smitten with humility before the question. A great army of noble writers presents itself, and one does not know where to begin to call the roll of great names. But there are certain books which every young person ought to read, else he misses much of gladness and helpfulness in his life. Among these are Miss Alcott's stories. The boy who has not read "Little Men" and "Joe's Boys" and the girl who does not know "Rose in Bloom" or the "Old-fashioned Girl" is a very sad young person indeed, and is much to be pitied. From these books one can get nothing but good—wholesome ways of thinking, healthy fun and high ideals. To one who has grown up in companionship with Miss Alcott's boys and girls, a life without them seems a barren one indeed.

Another writer whom every young person should read is Washington Irving, who makes history, biography, and travels, subjects frequently dull and uninteresting, as fascinating as fiction. His literary style is also excellent, and his writings could not but have an elevating influence upon the language and diction of those who read them. I once heard of a man whose language was remarkable for its elegance and clearness, yet who had never had the advantages of even a common school education. The explanation is very easy, when one learns that the man was a reader of good literature, his favorite writer being Washington Irving.

Robert Louis Stevenson is not so widely read as some authors less worthy, but he is well worth reading and if you begin to read him you at once come under the spell of his charming personality. Like Irving he, also, is an excellent help in the matter of expression, and surely to express one's self clearly and forcefully is no small or unimportant consideration. Moreover, one would have to go far to find a book with which to pass a more delightful hour than his.

Every one of course reads Dickens, or tries to. Some complain that he is dry and tiresome, but that is surely because they have not had the persistence to penetrate beyond the first introductory chapters, which are, it is true, quite generally tedious. In his pages one meets the strangest, most fascinating characters imaginable, and so many that they give an unreality to the story, yet they are no more odd than a large majority of the people who live in our own neighborhoods. The difference is that Dickens emphasizes the peculiar aspects of them, while we, in our observation of friends and acquaintances, accustomed to their ways, overlook the queer traits, and take them as we find them. Dickens teaches us to see the ludicrous in life, and to enjoy it in a spirit of kindly humor.

Scott, almost the first writer of historical novels, since so popular and abundant, comes in the list of writers both instructive and entertaining. Though the chronicling of events in his romances is not always perfectly reliable, yet so well does he reproduce the atmosphere of the time of which he wrote, that one feels in touch with these past ages, and ever after feels a personal interest in the old kings and queens of history whom Scott has introduced.

Our list is growing so long that it must be ended here, with the mere mention of our great-hearted old poets, Tennyson, whose "Idyls of the King" combine all the interest of a novel, with the beauty of poetry and the in-

spiration of song; our own Longfellow, Whittier, and our Holmes.

Alas, when there is so much that is great, helpful, and inspiring, we waste our time and our intellects upon that worthless and cheap literature whose fleeting influences leaves a bad taste in the mouth, or an unhealthy craving for the sensational and exciting. It always pays to cultivate a taste for the best, in literature as in everything else, and while one is young and in the springtime of life, is the only time to sow the seeds of a taste that will grow and ripen in the coming years of his life.

Rooster Stopped Express.

Professor George T. Powell, director of the Agricultural School at Briarcliff, Westchester County, has been for many years the most prominent lecturer at farmers' institutes in New York and adjacent States, and is one of the best known agriculturists in this part of the country. He tells the following story:

"I had been lecturing at North East, Pa., during the day, and late in the evening I arrived at Dunkirk, where I had to change cars for Buffalo. I boarded a fast Chicago express at Dunkirk, which made no stops from there to Buffalo. There were many passengers in the car, and nearly all were asleep. Being very tired, I took a seat, leaned back and had just fallen into a doze, when I was awakened by the loud chuckle of a rooster. Arousing myself and looking around, there, greatly to my surprise, was a large game rooster strutting up the aisle, with head erect, and every few seconds letting forth such a loud chuckle that in a moment nearly every one in the car was awake and craning their heads in great astonishment at the unusual intruder.

The rooster strutted wonderingly up the aisle till he came to a large, portly man, who was leaning back, with legs crossed, one knee as high as his head and still asleep. He took only one look and then flew up, alighting on the conspicuous knee. At this juncture everyone else in the car became intensely interested, and nearly all the passengers were on their feet, anxious to see what the man would do when he awoke. It needed only one more sound from the rooster before the stout man opened his eyes, and with a sudden start backward he threw up his hands in astonishment, while roars of laughter came from every part of the car.

"This excitement was too much for the rooster, and with one jump he flew up on the bell rope which sagged down under his weight, and the Chicago express, thundering along at fifty miles an hour, came to such a sudden stop that many passengers were thrown from their feet in a confused muddle. The train had no more than come to a stop when an irate conductor came hurriedly into the car and demanded who had stopped the train. By that time the owner of the rooster had awakened, and, taking in the situation, reached up and gathered in the wandering bird, restoring him to the bag from which he had escaped, and which contained two more fowls that had not found their way out.

"The merriment was too great for any sleep from there to Buffalo. A man from Chicago, who stopped at the hotel with me, said: 'I have been traveling for thirty years, but that is by far the funniest incident I ever saw.'"—New York Tribune.

Persian Complexion Secret.

Persian ladies, who are said to have complexions whose bloom and velvety softness are simply wonderful, use no cream or ointment on their faces. Instead they apply a coating of white of egg half an hour before their daily bath. When this has completely dried it is sponged off with tepid water, to which is added a little tincture of benzoin, and then the skin is sponged over with cold milk. The white of egg cleanses the skin, and the treatment described removes all impurities from the complexion, leaving it as smooth and soft as that of a child.—New York Weekly.

Babylonia.

In the new edition of the Encyclopedia Britannica Professor Sayce gives a most interesting account of Babylonia and Assyria from the foundation of Eridu, which he refers to 6,000 B. C. "The alluvial plan of Babylonia," he tells us, "after its reclamation from swamp and jungle, was called by the Sumerians the Edin, or 'plain,' a word which was borrowed by Semitic Babylonians under the form of Edinnu, the Eden of Genesis ii. 8. A Sumerian hymn describes a magical tree—the tree of life—which 'grew in Eridu, in the center of the earth,' where the god



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there is a layer of very hard composition between an inside and outside layer of solid gold reducing the cost of the case, and adding greatly to its strength. BOSS Cases are guaranteed to wear for 25 years; are recognized as the standard, and sold as such by all jewelers. Write us for a booklet.

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By This Mark  You Know Them

Ed walks in his garden forbidden to man, and Tammuz dwells beneath its shade, while the Tigris and Euphrates flow on either side. In this description it is difficult not to see a parallel to that of the biblical Garden of Eden." We are apt to think of the rulers of States in these ancient times as essentially soldiers, and it is a side indication of the civilization which had already been attained that Nabonidos was more of an antiquary than a politician. He spent much of his time in excavating for the monuments of his ancestors and endeavoring to fix their dates. "Thus he states that Naram-Sin, the son of Sargon, lived three thousand two hundred years before his (Nabonidos') time."

Weight of Habit.

Agassiz, wishing to study the glittering interior of an Alpine chasm, allowed himself on one occasion to be lowered into a crevice in a glacier, and remained for some hours at midday at a point hundreds of feet below the surface of the ice. After gratifying his enthusiastic curiosity he gave the signal to be drawn up. I heard him tell this himself, and he said, "In our haste we had forgotten the weight of the rope. We had calculated the weight of my person, of the basket in which I rode, and of the tackling that was around the basket, but we had forgotten the weight of the rope that sank me into the chasm. The three men at the summit were not strong enough to draw me back. I had to remain there until one of the party went five miles—two and one-half out and two and one-half back—to the nearest tree to get wood enough to make a lever and draw me up."

When habit lowers a man into the jaws of the nature of things it is common, but it is not scientific, to forget the weight of the rope. That weight is a fact in the universe, and the importance of not forgetting it is one of the most unanswerable teachings of science.—Homiletic Review.

QUESTION BOX.

Question Box Queries.—(1) What is meant by the term "recessional?" (2) Is it proper for a lady, when appearing before an audience in the open air, to keep her hat on? (3) Who is author of the expression, "All is not gold that glitters?"

MARTHA.
Leeds, Kans.

1.—The Recessional is the hymn sung at the close of the Episcopal service as the preacher or the choir leaves the pulpit.

2.—It is perfectly proper to appear before an out-of-door audience in a hat. Indeed, it is not an unusual thing for a woman to wear her hat before an informal audience indoors.

3.—Shakespeare, in the Merchant of Venice, has given the expression though the form is a little different from that popularly quoted, "All that glitters is not gold."

We are glad to open the question box again, for, though many of the questions that we have received have sent us chasing all over town and to all our learned friends, still it has been a pleasant task, and one which we have hoped has been as helpful to the questioners as to ourselves.

He who loves God all else above,
His own shall also clasp
In circles ampler far of love
Than weaker arms can grasp;
And farther down through space and time
His sympathies descend and climb.

—Sir Aubrey de Vere.

FOR THE LITTLE ONES

GARDENING.

I spaded up an onion bed—
I worked the ground so fine,
Then rows of little pointed sets
I planted straight by line.

I made a bed for lettuce, too,
('Tis such a pretty green);
I sowed the tiny seeds in sows
With radishes between.

Two hens with chicks stood waiting near
A chance to forage there;
I went and found some thorny brush
To cover the beds with care.

I did it all this morning, too,
And now I'd like to know
If the little seeds have sprouted yet;
If the green begins to show.

Of course I might dig up some seeds—
A few just for a sample—
But wouldn't I thus set the hens
A very bad example?

—Harriet B. Coe.

Tommy at the Picnic.

Tommy teased his mother all day to let him go to the big picnic at the woods, and finally she said he might go if he would not go near the creek.

"O, can't I go a-fishin' with the other fellers, maw, ple-e-ase?" said Tommy.

"Yes, you can go fishing, if you do not go near the water," said mother.

Tommy's mother laughed but Tommy did not think it was funny at all. Indeed, he thought he could not have any fun at all if he could not fish "with the other fellers." But he decided to go to the picnic and next morning started off bright and early with a basket full of doughnuts and pie, and lots of good things that little boys like. As soon as he got there, Ed. Brown called to him, "Tawm, Tawn, come go fishin'."

Tommy ought to have been a brave boy and said no, but he wasn't, and so he set his basket of good dinner down by a tree, and started off after Ed.

But I don't believe Tommy will ever want to go fishing again—at least he said he wouldn't when he came back—for he was all dripping and shivering and looked as white as a girl. I do not know how it happened, for I was not there, but I think he fell in. The ladies, who were there all petted him and felt sorry for him, for they did not know his mother had said he must not go and they thought he was a good little boy. But when he came home, his mother knew all about him, and she put him to bed, and gave him some medicine. Tommy thought this was to punish him, but it was really to keep him from getting sick, for his mother loved him even if he was naughty.

But the next morning he was very sick, and for a good many days after he could not go out and play as he loved to do, nor help his father feed the pigs, nor even read in his little story-book, and he found it very tiresome to lie on his bed with that bad ache in his head and that queer feeling in his throat.

When he was getting better Ed. Brown came to see him. "Tom, do you want to go fishin' again?" he said, laughing.

"Yep" said Tommy, very seriously. "But the next time, I go fishin' I'm not goin' near the water."

\$100.00 Cash Prize for a Name.

For the new Daily Limited train to California to be placed in service November 1, 1902, by the Rock Island System and Southern Pacific Company, via the El Paso Short Line. The competition is open to the public and conditions involve no fees of any kind. For circular of instructions, address at once John Sebastian, Passenger Traffic Manager, Rock Island System, Chicago.

The Home Circle.

THE QUAKERESS BRIDE.

No, not in the halls of the noble and proud,
Where Fashion assembles her glittering crowd,
Where all is in beauty and splendor arrayed,
Were the nuptials performed of the meek Quaker maid.

Nor yet in the temple those rites which she took—
By the altar, the mitre-crowned bishop and book,
Where oft in her jewels stands proudly the bride,
Unawed by those vows which through life shall abide.

The building was humble, but sacred to one
Who heeds the deep worship that utters no tone;
Whose presence is not to the temple confined,
But dwells with the contrite and lowly of mind.

'Twas there, all unveiled, save by modesty,
The Quakeress bride, in her white satin hood;
Her charms unadorned by the garland of gem,
Yet fair as the lily just plucked from the stem.

A tear glistened bright in her dark shaded eye,
And her bosom half uttered a tremulous sigh,
As the hand she had pledged was confidently given,
And the low murmured words were recorded in heaven.
I've been at the bridal where wealth spread the board,
Where the sparkling red wine in rich goblets was poured;
Where the priest in his surplice from ritual read,
And the solemn response was impressively said.

I've seen the fond sire, in his thin locks of gray,
Give the pride of his heart to the bridegroom away;
While he brushed the big tear from his deep-furrowed cheek,
And bowed the assent which his lips might not speak.

But in all the array of the costlier scene,
Naught seemed to my eye so sincere in its mien,
No language so fully the heart to resign,
As the Quakeress bride's—"Until death I am thine!"

—Elizabeth C. Kinney.

Agriculture and the School Teacher.

Prof. Thos. F. Hudson writes in one of our exchanges as follows:

"Some time ago I visited one of the best township high schools in one of the best townships in one of the best counties in one of the best States in the Union. This high school is situated in the geographical center of the township, is three miles from any village and some distance from any other building. There is no village in the township, of over five hundred souls. The building for the accommodation of these pupils leaves scarcely anything to be desired. The principal of the school was an ambitious, conscientious, intelligent, energetic man, who had at heart the best interests of his pupils as he understood them. The people of the township showed a most commendable pride in the achievements of this school and an earnest desire for its usefulness.

"Inasmuch as practically every boy or girl in this school came directly from the farm and as the majority of them will return to it, I was naturally anxious to know what this school was doing to make better farmers and better farmers' wives. I asked if they studied botany in this school. No, the spring term was short, and the principal was busy at this time of the year, superintending the district schools. Then of course they taught chemistry? No, there was not room in the course for chemistry—there were so many other things to be taught. There was room, however for two years of Latin. Did they teach physics? Yes, they taught physics. Did they have any experimental laboratory work in connection with physics? No, they could not afford to purchase the apparatus. They had just purchased a fine piano.

"Here, then was a four-year course of study composed chiefly of mathematics, Latin, history and literature, but containing hardly a hint of those vast fields of modern thought and investigation which mean so much to the world at large and to the farmer in particular. I allow no one to exceed me in appreciation of the value of the study of Latin, higher mathematics, history, and literature. I have had occasion to say, and I here repeat that I would sooner have a man well educated in Greek than poorly educated in agriculture, to run a farm for me. But for the farmer of tomorrow chemistry will certainly be more important than Latin; botany more useful than Longfellow's 'Courtship of Miles Standish' or Ruskin's 'Modern Painters.' The

study through zoology and entomology of the warfare of animal life in that township is more important to the tillers of the soil both as information and as a stimulus to mental growth than are the wars of Rameses II or of Alexander the Great. Some adequate knowledge of bacteriology must be of more service, and if cleanliness is next to godliness, of equal moral value to Webster's oration on the 'Bunker Hill Monument,' or Shakespeare's 'Merchant of Venice.' The study of the application of science to agriculture, and even the discussion of some of the improved methods of farming, would be as much in place in a school of this kind as for-ensics.

"The laws of our State require very properly a certain educational qualification before a man or woman can become a school teacher, a lawyer, a doctor, or a druggist, and our schools have well educated, no one can or wishes to the demands of this professional class at the expense of the great industrial classes which form the bulk and bulwark of our people. That these professional classes should be educated, and well educated, no one can or wishes to deny, but it should not be done at the detriment of the bulk of our population.

"Why was Latin, higher mathematics, history, and literature well taught while chemistry, physics, botany, zoology and entomology, received either no treatment, or if at all, scant treatment. The teacher had a good training in the one class of subjects, practically none in the other. He knew practically nothing of the sciences or their relations to the occupations of his patrons. When I tried to talk to him of the relations of the sciences to the farmers of his township, that vacant stare came in his eyes that would have come into mine had he tried to converse with me in Greek. It was Greek to him. He had no conception of it. The contention of this paper is not so much that the curriculum of the schools should be changed as it is that the teachers should have some conception of the relation of the subjects which they teach bear to the occupations that their pupils will follow. The question I was constantly asked when I was a student in the high school, and I suppose every other young man is asked the same question, was, 'What are you going to do when you get through school?' When I said that I was going to be a farmer, my high school teacher said it was such a pity, and my friends took turns in trying to persuade me to desist from my intentions. There was one man, however, who, while not advising as to the occupation in life that I should pursue, saw clearly that if I was determined to be a farmer, I needed all the training the state system of education could afford. My father, therefore, suggested that I take a course in agriculture in the State University. When my teachers learned that I was going to college to study agriculture, they smiled in a patronizing sort of way, and my school friends looked upon it as a mild sort of lunacy. When I got into the university, I found a corps of most inspiring instructors but not many students studying agriculture in this great institution. Nor is it surprising that I found so few. No person teaching in the lower schools had ever had any instruction relating to agriculture. Few of them had ever known any one who had studied agriculture in a university, and most of them had never heard that it was possible to teach agriculture in a university. As the Hon. James Wilson, Secretary of Agriculture, said recently, 'Neither the family minister, lawyer, or doctor, or any other educated man to whom young men look for guidance, had ever studied agriculture.'

Is it remarkable that pupils who generally place implicit confidence in their teachers should be guided away from the farm under such circumstances?

Pickles in Brine.

Choose small cucumbers, free from blemishes. If gathered from your own vines, pick them in the early morning or late in the evening, as cutting cucumbers at mid-day is apt to injure the vines.

Put a layer of cucumbers in the bottom of a cask, then a layer of salt, about a quarter of an inch thick. On this place another layer of cucumbers, then of salt, and so on, till all are used. When 25 or 30 cucumbers have been packed, and half a pint of water to start a brine; this with the juice drawn from the cucumbers will form plenty of brine for all. When the supply of cucumbers is exhausted, cover with a board, pressed down with stones to keep the pickles under brine. If you wish to add more pickles each day as gathered simply remove the board and stones and arrange

in layers as before. After the cask is filled, put a thick layer of horse-radish tops under the board, then cover the cask with a cloth tucking it down around the edge tightly.

In the winter when the cucumbers are wanted for pickling, carefully lift the cloth with the scum—a heavy scum will form, but it does not injure the pickles—take out what pickles are wanted, wipe down the sides of the cask, and after having washed the board, stones and cloth in warm water, cover the cask as before.

Soak the cucumbers you have taken out in cold water for three days, changing the water each day, then drain and wipe each cucumber carefully. Three or four cabbage leaves may be added while pickles are soaking. Put in a porcelain kettle with sufficient vinegar to cover them, and set over the fire, turning them over, that all may be heated. Let the vinegar come to a boil, but do not cook the pickles; the minute the vinegar begins to simmer take it from the fire. (If you want them crisp, at the expense of health, add a piece of alum the size of a hazelnut when the pickles are put on the fire.) As soon as heated drain the cucumbers and place in jars, and cover with fresh cold vinegar. Spices and sugar may be added to suit the taste. A tablespoonful of chopped horse radish will prevent molding. They will be ready for use in a week.—Indiana Farmer.

The Progress in Irrigation.

The progress in agriculture in the arid States and Territories during the decade ending with 1899 is shown in the report just published by the Division of Agriculture of the Twelfth Census. As this progress is attributable largely to irrigation, the statistics relating thereto are of general interest.

The number of irrigators in the United States in 1899, not including irrigators of rice, was 108,218, an increase in ten years of 99.9 per cent. The area irrigated was 7,539,545 acres, an increase of 107.6 per cent. Of this area, 5,944,412 acres were in crops and 1,595,133 acres in pasture and unma-tured crops. The cost of irrigation systems in operation, exclusive of those on rice plantations, was \$67,770,942, while the value of the irrigated crops was \$86,860,491.

The total length of all the main ditches in the arid and semi-arid States and Territories was 44,149 miles.

The average number of irrigated acres in farms in arid States and Territories was 71; the average value of irrigated land per acre, \$42.53; the average value of crops produced on irrigated land, \$14.81; the average first cost of water, \$7.80; the average annual cost of maintenance, 38 cents. Of the 5,711,965 acres in crops, hay and forage occupied 3,665,654, or 64.2 per cent; cereals, 1,399,709, or 24.5 per cent; vegetables, 168,432, or 2.9 per cent; orchard fruits, 251,289, or 4.4 per cent; other crops, 226,881, or 4 per cent. The value of the hay and forage was \$34,834,966; cereals, \$14,338,326; vegetables, \$9,627,491; orchard fruits, \$8,920,409; other crops, including sub-tropical fruits, grapes, flowers, plants, sugar-beets, etc., \$16,712,246.

In Kansas the number of irrigators increased from 519 in 1889 to 929 in 1899, or 79 per cent, and the number of acres irrigated from 20,818 to 23,620, or 13.5 per cent. The ditches in operation in 1899 had a length of 524 miles and irrigated 21,711 acres. There were 1,909 acres irrigated from wells. The cost of construction of the irrigation systems was \$529,755, and the irrigated products had a valuation of \$226,453.

Shortly after sending the irrigation bill to the President, Congress passed a resolution authorizing the Director of the Census to compile statistics relating to irrigation for the crop year of 1902. With the data now assembled, this work will be comparatively simple, most of it being done by correspondence. To secure this information in-



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quiries will soon be sent out to irrigators throughout the United States. The cooperation of those interested in irrigation is earnestly solicited for upon their prompt response will depend very largely the value of these statistics. This is in part a supplementary work, the results of which will be utilized in the work soon to be undertaken by the Department of the Interior under the provisions of the irrigation bill.

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Horticulture.

Fruit Trees in Germany.

A somewhat detailed statement published in the last number of the Vierteljahrshesftzur Statistik des Deutschen Reichs shows that to every square mile of territory in the German Empire there were 332 plum trees, 251 apple trees, 119 pear trees, and 104 cherry trees, or 806 trees of the four kinds named. Per square mile of the territory devoted to agriculture, there were on an average 513 plum trees, 386 apple trees, 186 pear trees, and 158 cherry trees, or 1,243 trees of the four kinds—an average of very nearly two to each acre of agricultural land.

To every 100 inhabitants of the Empire there were 123 plum trees, 93 apple trees, 45 pear trees, and 38 cherry trees, or in all 299 fruit trees of these leading kinds. If the number be considered with reference to the agricultural population alone, there were on an average 945 of these fruit trees to every 100 persons.

Notwithstanding an average of nearly three fruit trees of the kinds named above to each inhabitant of the Empire, the supply was not sufficient to meet the requirements of the people, for the imports of fresh and simply prepared (dried, etc.) fruit of the four kinds in question exceeded the exports of such fruit by 2,200,000 quintals (485,016,840 pounds) in 1900, and by 2,000,000 quintals (440,924,400) pounds in 1901. The value of the excess of imports over exports was 36,300,000 marks (\$8,639,400) in 1900, and 39,400,000 marks (\$9,377,200) in 1901, the net import of the latter year having apparently been bought at considerably higher prices than that of the year before. To produce yearly a quantity of fruit equal to the mean annual net import of these two years, it is estimated, on the basis of fruit statistics for the Kingdom of Wurtemberg, that about 15,000,000 trees in bearing condition would have to be added to the 168,400,000 apple, pear, plum and cherry trees of all ages enumerated in Germany in 1900. It would seem, therefore, that under present conditions Germany must import enough apples, pears, plums, and cherries to supply at a moderate estimate, five or six millions out of her fifty-six or fifty-seven million people with their entire requirement of these fruits.

Shade Trees.

It is said that the chestnut tree lives eight hundred and sixty years; the oak, one thousand six hundred years; and the yew, two thousand eight hundred and eighty years.

A white pine will measure twenty-five feet at twenty years and gain twenty-five feet more in the next ten years.

An oak of average size, with 700,000 leaves, lifts from the earth about 123 tons of water during the five months it is in leaf.

The smallest tree in the world is the Greenland birch. Its height is less than three inches, yet it covers a radius of two or three feet.

Experts assert upon investigation that the fir trees of western Washington grow from 150 to 300 feet high and are from five to thirty-five feet in diameter and are stronger than the oak of the Atlantic coast.

The catalpa tree is ornamental, a fast grower, hardy, and its wood is becoming of value. It makes the best of fence posts, is fine furniture wood and recent experiments have proven that it is the best material for making paper. The cultivation of the catalpa is liable to be a paying industry in this country in the near future.

The sneezewood tree is one of the many curious products of South Africa. It is so named because one can not cut it with a saw without sneezing, as the fine dust has exactly the effect of snuff. It is very bitter to the taste, and no insect, worm or barnacle will touch it. The color is light brown, the grain very close and hard. It is a nice looking wood and takes a good polish. When placed in water sneezewood will sink, and for dock work, piers and jetties it is a useful timber, as it lasts a long time under water.—Farm, Garden and Poultry.

Potato-growers who resort to any treatment for scab usually soak their seed-tubers for ninety minutes in a weak (1 to 1,000) solution of corrosive sublimate, or in some other powerful disinfectant. T. Greiner says: "I usually expose my seed tubers for a while to the light and to the nearly direct rays of the sun, in order to kill the scab infection that may be on them, and rely for full exemption more on plenty of humic acid in the soil, gener-

ated by the turning under of green stuff, clover, weeds, etc., than to anything else. My treatment secures exceptionally clean potatoes."

S. A. Downs, of Mena, Ark., claims to have fifteen peach trees two years in bearing, the first year all were freestones, the second year all were clings. He also says one of his neighbors who bought some of the same variety at the same time has had similar experience. This is a strange and unaccountable freak. But we can at least equal this strange case with a peach tree that bears from the same bud both freestones and clings—the first to ripen are the clings, and as the season advances they become semi-clings and finally freestones. While the pomological philosophers are unraveling Mr. Downs' mystery we hope they will also consider the latter case.—Farm and Ranch.

In both the above cases the question of fact will bear investigation.

Making Chisels and Other Tools from Files.

As a matter of convenience, chisels, drills, punches, and tools of a light character are often made from old files, and while some answer well, others fail, chiefly because they were not properly treated, says Mr. Walter J. May, in the Practical Engineer. In selecting the files to work up, squares usually are the best, and the fine cut kinds are to be preferred, as the metal is not bruised so deeply as with first cut and rough files. Of course in a workshop where files are plentiful, no very great care is taken in making up chisels, but where they are wanted good a lot of time is taken, and eventually it is cheaper to buy hexagon or octagon tool steel than to work up scrap files, unless the smith has "nothing to do and plenty of time to do it in."

The first thing to be done is to soften the files, and this is most easily done by placing them in a flue where they will remain at a dull red heat for from five to twelve hours, the object being to anneal them right through. Or make them slowly, but thoroughly hot right through in the forge, drawing to a bright cherry red, and then allowing to cool slowly; but this leaves the metal rather more brittle than when the first process can be adopted.

Having the files annealed, they should be ground until the cuts are removed, as this gives the best metal to work with; but this grinding is not absolutely necessary, and in the trade workshop is rarely done, save to kill time, as with proper tools at the forge, and skilled men to use them, the metal is worked up decently. Still, where there is time, one may as well do things well. In forging, the files should be made to a full red, being careful to heat with a low blast, and take time to get the center of the steel hot, or you will split it up when you commence to use the hammer, high carbon steel being very different to iron, and can be melted on the outside under a strong blast while the center is hardly red hot. Cut off the tang of the file to get it out of the way first, then draw the bar down to an octagon shape with the hammer, and finish with a safe hammer or flatter if you have a striker, but if not the hand hammer must do all the work. The blows of the hammer must be dead ones given with some force, and while not having the metal above a cherry-red it must not be hammered back, or it will split and the cracks will probably not show until the tool is tempered and maybe ground. Having drawn the metal into the right section, the cutting end, if a chisel, or the shaped end, if a punch, must be drawn down, after which the tool should be cut off to the right length and the head finished. Drills will have the heads made square, or of the shape best fitted for the chuck or stock in which they are to be used, and those for use in a ratchet brace should fit properly without packing.

When the tools are forced they should be filed or ground up preparatory to hardening and tempering, and then very carefully examined to see if any cracks exist, and if the work has been properly done, filing will be quite an easy job comparatively; but, of course, all kinds of filing is hard work when persisted in. In all tools a bright side should be made for the color to run on, as it is thus more surely seen.

In tempering, the tool should be made a full blood-red for a sufficient distance from the end to enable the heat to cause the color to run, and this heating should be slow enough to cause the center of the tool to be practically as hot as the outside—there is always a slight difference, perhaps a dozen degrees—and dip in hot water to blacken

the surface. Rub the brightened side at once with a piece of dry sandstone, and watch the bands of color move down until the purple band just reaches the end, and then quench at once in hot water. If you have the yellow shades on the edge of tools made from files, you will find them very liable to split and chip off, but with many of the tool steels the yellow shades are all right. Carpenters' and shoeing-smiths' rasps, when made into tools, should be tempered to the yellow shades, as the steel is usually of a milder quality than that used for ordinary files, and consequently the higher tempering is necessary.

In hardening and tempering high carbon steel, always use hot water, to reduce the shock given to the metal, and dip the article steadily and not too rapidly into the water with a circular motion. If you dip high carbon steel to a given point into cold water and hold it there, you will in all probability get water cracks, and with chisels, punches, and the like kind of percussion tool such cracks are often dangerous, as the tool breaks off suddenly and the fingers get more or less smashed or damaged.

Be careful also that you do not over-heat or "burn" the steel in forging, or about a couple of blows will smash the tool; and in annealing, if you must plunge the metal into anything, use thoroughly burned ashes free from carbon or sulphur. If you use ashes holding carbon the steel in cooling will absorb some and become harder, if you have sulphur present, its brittleness will be increased; and if you use lime on the carbon, the surface tends to burn out, and thus soften the outside of the steel and make it awkward to work with.

As a rule round files do not forge well, but with some makes they work worse than others, and decidedly, round files are inferior to square ones, for punches, as there is a tendency to avoid forging sufficiently, and this alone is a point which is often fatal to many tools made from scrap steel.

Thin flat files, when annealed and ground, may often be drawn down and made into stiff hacksaws, but the hardening and tempering presents a considerable amount of difficulty. The teeth are cut with a three-cornered file, and the blades ground thinner at the back than at the front. After hardening, the temper should be drawn to a purple on a plate heated bright red, the blades being turned over from time to time to keep them equally heated. Unless the color is equal from end to end the saws will not be much good, and in this lies the difficulty.

The Mosquito's Favorite Color.

The experiments now being made by a young scientist at the University of Chicago to ascertain the "color sense" of the mosquito will be attended with results much more valuable to punctured and blistered humanity than the course of lectures on love and marriage now being delivered at that institution.

No one cares to escape the darts of Cupid, but the anterior javelin of the mosquito has a perforating power and a poisoning touch that are capable of making outdoor life unbearable for thin-skinned mortals.

It is believed by scientists that the mosquito has a decided preference in the matter of colors. He is fond of a

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particular color, and will be attracted to it. To discover that particular color is the problem that has engaged the study of several scientists.

It may not be possible to find a color that will repel the mosquito, but if it is possible to learn what color he loves the best it becomes an easy matter to induce your neighbor to paint his house or barn that color. If this does not work a few vacant houses with decoy victims on the front porches all embellished in his favorite color could be provided in each community.

Thus far the experiments indicate a strong preference for the dark colors, blue, black and red, while white, orange and yellow have few admirers. It is claimed in fact that yellow is given a wide berth so long as any other colors are displayed. If this conclusion is verified by further experiments we may expect to see the whole country dotted with yellow towns and yellow gowns by next season.—Chicago Record-Herald.

King Edward's Horses.

During the British coronation excitement a great deal was published about King Edward's cream-colored horses, which were being rehearsed for the grand pageant. Like the present British dynasty, these "royal creams" are of Hanoverian origin. It is the breed of horses first imported from Spain, but which for many years has been carefully bred in the royal stables at Herrenhausen. Quite recently, however, the breed has been reduced to such an extent that his majesty's team is not likely to be replaced in kind. The Duke of Cumberland was especially interested in the breed while he still laid claim to the crown of Hanover. On renouncing his claim he seemed to lose interest in the creams, which, always numerically small, are now almost extinct.

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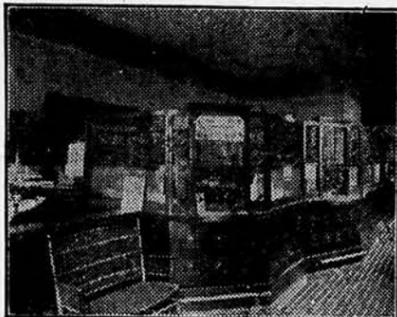
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The Poultry Yard.

Weak Places in Artificial Brooding.

People can overwork and get so tired that they can sleep standing up or sitting down, but it is not the natural way, it does not bring the natural rest. This way of sleeping is no more unnatural for people than it is for a little chick to lie down and sleep. The writer is not a scientist, a professor, or even an expert, yet my opportunities for making observations are good. I have discovered that little chicks as well as birds and all animals are born into this part of the world to immediately adjust themselves to what people call comfortable temperatures, (70 to 80 degrees), even infants are not excepted. The popular idea with brooders is to start the chicks off under a temperature of nearly 100 and gradually lower it to 75 or 80. Where this theory originated no one knows, but this is not what I am getting at. On a hot day this season I was watching a hen and brood of chicks. The hen was panting and the chicks had their mouths open, yet the chicks run under the hen and went to sleep. I had seen this same thing over and over, but never had given it any thought. I went and picked up one of the chicks and it tried to get away. I laid it in one hand and put the other hand on its back, and in a few minutes it was asleep. After thinking awhile I remembered that my mother had raised pet chicks 40 years ago by putting them in a lined basket with a cloth bagged down on their backs. No other heat than their own bodies was applied, yet the temperature outside of the basket could be most anything from freezing to warm. Then a circumstance that happened ten years ago came up for thinking about. The circumstance was this: towards the latter part of April a light snow fell during the night; the next morning while doing the chores I noticed a hen coming up from a slough with some small chicks; they were making slow progress, yet just the same she trailed seven little chicks to the henhouse through snow deep enough to make tracks. I followed the tracks back and found the nest some 500 feet from the poultry house with seven empty shells. While thinking back over this circumstance an occurrence that happened in my own town here came to mind. W. F. Holcomb set a Partridge Cochins two years ago in early March. When the hatch came off the weather was moderate, but when the chicks were some ten days old and doing finely it turned suddenly cold one night. The hen was hovering the chicks in the corner on a barn floor. Next day Mr. Holcomb noticed that the chicks got around queer, and he examined them and found their feet had been frozen. In a few days their frozen toes came off, but the chicks lived and grew into big healthy fowls.

This is no fish story, only the inexperienced will be incredulous. Experienced poultry raisers by the hen method will not doubt a word of my statement. If they have had a long and varied experience they will remember similar occurrences, and yet (like myself) they perhaps attached no especial importance to the circumstance at the time. Now to my discovery. It is as simple as rolling off a log. The little chicks have sleepy nerves on their backs, and your Uncle Jack is here to tell you that if you apply something for these nerves to get up against that they will generate enough heat with their own bodies to keep them warm enough in any ordinary weather (60 to 80 degrees), if the chicks are in most any kind of box that will hold a large portion of the heat generated. A box full of little chicks makes just as much heat as a box full of hens.

Most any kind of old hen can keep a brood of chicks comfortable, hovering out of doors when the weather is quite cool. Don't imagine for a minute that she applies 95 to 100 degrees all over said chicks, not by any means; she applies a little direct heat to their backs, but their legs are just as cool as her legs and the hen's body is perhaps no warmer than their bodies, except the protection the feathers give her, and then no one has proved that the down on the small chick does not protect it to some extent.

While I am at it I want to make another statement that can not be disputed. It is simply that the mortality of brooder chicks reflects on the method of artificial hatching through creating a suspicion that incubator chicks may not be as strong. This is a mistaken idea, but I predict that, unless brooder methods improve, that incubators will be another twenty years try-

ing to convince all poultry raisers that that their's is a profitable way to hatch chicks.

But brooder methods will improve. Some of the theories are so absurd that real poultry raisers will go to thinking on their own account. I would not like to be understood as advocating cold brooders under all circumstances. But what heat is applied should be to their backs, and not too much of it either. If the brooder house can be kept at a temperature of 75, or even 70, brooder lamps can be dispensed with if the brooders are made right.

Let us consider another side of the baby chick. July hatched chicks are up against a hot proposition, so hot in fact that July hatched chicks are considered hard to raise. Lice and mites make it warm for them sometimes, but the warmest thing is a hot sun when it is 100 in the shade. They get overheated, suffer a sunstroke, as it were. A chill follows it, and the next thing a fever. Usually it takes a chick three to five days to get sick and as long to die. Bowel trouble develops, the direct result of the overheating. Overheating affects the bowels of all living things, people and infants not excepted.

Pile up, did you say? Yes, pile up, but the piling is done on a different plan from what a great many think. The piling up is simply crawling under—that all-important back of theirs is lonesome, and with a sick chick it is even more marked. Like a sick child they want to be mothered, and when they crawl under in a weak condition they are not liable to extricate themselves even if they could reason out how.

The easiest chick chilled is one that has been roasted (kept too warm), but it is not the natural chill; it's a chill from the effects of the roasting and its weak condition.

I remember now a remark that I heard my father make some forty years ago. It was that pet chicks never died unless you stepped on them.
Clay Center, Neb. M. M. JOHNSON.

Selecting Winter Layers.

There is quite as much care needed in the selecting of the winter layers as is bestowed upon the selecting of fowls for exhibition or for producing show fowls. There is not the least use to suppose that any old hen will lay eggs in winter. Too many people keep over for winter layers those that the huckster don't want, you don't eat, and nobody seems to want. This is the reason for poor egg-yield in the winter. Those who have plenty of eggs to sell all winter are the ones that select their winter laying hens.

Hens that molt late seldom lay during the following winter. Hens to do well as winter layers must go through the molt and be done with it in time to gain strength for winter egg production prior to the cold days or they can not get the vitality necessary for a full winter egg yield. Such may produce a few eggs all through the winter but they will not produce enough to pay their keep; oftentimes, however, they do produce the eggs that you will use for hatching in the spring. From their use you will get a lot of inferior egg-producers, for the chick will take after the parent bird.

If people might grasp the notion of selecting and keeping for their own use the best every time and all the time, they would have more eggs in winter, better chicks in the spring, better stock to sell all the time and their flocks would be better and better each year, but so long as the huckster, the cook, and the housewife are allowed to select



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for killing all the best as fast as they grow to a proper size just so long will your flock of hens lack the very qualities that are most desirable, because of the profit they bring. The way to do is to let the huckster buy or the family eat the ones that you do not wish to keep. Never let them have the best cockerels nor the best pullets nor the best 1-year-old hens; keep all such for yourself, or at least as many of them as you will need for winter use, and clear out the rest. Those who let the huckster take away the best will get less each year out of their hens, while those who always keep the best have better to sell as well as better to keep each year.

Clover as an Egg-producer.

Experience has demonstrated the value of clover for egg-producing time and again. Clover has just the material in it to form eggshell, and hence it becomes an essential part of every ration fed to the chickens. It may not be generally understood that there are nearly thirty pounds of lime contained in each 1,000 pounds of clover. The chickens fed daily with clover will consequently prove better egg-layers than those denied it. The clover hay should be given to chickens in winter in quantities sufficient to satisfy them, and to make them eat more it is desirable sometimes to prepare it in various ways. Cook and chop it up, and mix it with meal or other articles. This will sometimes induce the hens to consume a great amount of clover every day. Cut up into short lengths and mix with warm mash and then fed only as fast as the chickens will clean it up each day is probably the most economical way to feed the clover. Some cut the second crop of clover and place it in the poultry ward for the chickens to eat and scratch over at pleasure. This of itself is all right, but it is rather wasteful. More than half of the clover will be lost, and the chickens do not actually eat much more than the leaves. The stalks contain most of the lime, and these should be prepared so the chickens will consume them. Of all foods that can be raised on a farm for poultry clover is not only the best, but probably the cheapest, and a field of it is as essential to success as a pasture field is necessary to the success of dairying.—Massachusetts Ploughman.

No More Eggs Wasted.

Storage houses have learned economics in the handling of eggs. The large storage concerns propose to have as little loss as possible, and utilize every egg in the case whether fresh, cracked or dirty. Even rotten eggs are utilized. This is how they do it.

All of the small, dirty, and cracked eggs that are fresh and of good quality are canned. They are put up the same as canned meats. The yolks and whites of the eggs go in separate cans, and this product is shipped all over the country, and is a great convenience in hot climates. When a baker has use for the whites of eggs he can just buy what he needs put up in these cans, which saves him the loss resulting from

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Rocks, White Rocks, Buff Cochins, Partridge Cochins, Light Brahmas, Black Langshans, Silver Wyandottes, White Wyandottes, Silver Spangled Hamburgs, S. C. Brown Leghorns, and Belgian Hares. Buy the best now at the lowest prices. Write your wants. Circulars free. Choice Breeders and Show Birds.

A. H. DUFF, Larned, Kan.

buying eggs as they are ordinarily sold. The quality of this canned fruit is fine. Then the rotten and cloudy eggs are put up in cans and sold to tanners and used in putting the gloss on fine leather. The "rots" serve the purpose of the tanners and can be bought cheaper. The shells are used to make fertilizers, etc., so that the loss is small. When it is remembered that the small things count up fast in making losses profits, the value of the economy here practiced becomes apparent.—St. Louis Globe-Democrat.

Poultry Chats Over the Front Gate.

"An egg is an egg," was the oracular declaration of one of my customers, leaning over my front gate to chat with the Doctor's wife, who had come in for her daily half-dozen. "I can't see a mite of difference in 'em, unless, of course, they're too stale. It's all nonsense to say one egg tastes better than another."

"I am very particular about my eggs," said the Doctor's wife; "and the Doctor—well, you should hear him sputter if a 'store' egg is cooked for him. He can tell it in a minute. I buy my eggs of Mrs. P. because they are always good. We have them soft-boiled for six breakfasts a week."

"I boil mine twenty minutes," said the other lady. "I don't like eggs anyway, and a soft-boiled one I couldn't touch. I generally scramble 'em, and put in lots of seasoning, then they don't taste as if you were eating eggs."

"There we differ," laughed the Doctor's wife. "We like eggs, and we want our eggs to taste like eggs, and good ones at that. I've had fishy eggs, oniony eggs and indescribable-tasting eggs, yet they were newly laid, I knew."

"Give hens clean, sweet food, and you'll have eggs that are eggs," was my comment. "My hens have access only to food and water that are cleaner than many people use, hence my fine-flavored hen-fruit."—A. L. P., in Farm Journal.



THE KING OF SPAIN.

The young King of Spain is greatly interested in the agricultural development of his domain and delights in investigating labor-saving farm machinery. The illustration shown was taken on the farm of the Count of San Bernardo, who will probably be the next Minister of Agriculture. The King was greatly pleased with the demonstrations given by the Deering harvester and binder and occupied the driver's seat on a Deering cultivator while his photograph was being taken. He is the youth who wears a cap and bright buttons in the illustration.

The Apiary.

Conducted by A. H. Duff, Larned, Kans., to whom all inquiries concerning this department should be addressed.

The Honey Crop.

The honey crop for 1902 is by no means flattering. In the West the honey crop is going to be far short of even last year. Colorado will come up with less than half a crop this season, while Arizona and neighboring localities will not do even as well. Texas has not come near up to standard, but has done better than most others. The Northern States have not such crops of clover and basswood honey this year as formerly, but what they have is of fair market quality. The Southern States are slow at reporting, but from reports already in, the crop is lighter than usual. But the South is not a heavy producer any year, and cuts but little figure in turning market prices. Florida is an exception and is well up to the average from latest accounts, and Florida honey is not in the least to be despised. California, the "bumper" honey-producing State, is far short of even half a crop, and in many of the best honey-producing localities of the State, the bees are scarcely making a living, and in some instances have to be fed.

The Northeastern States have perhaps done better than any taken as a whole, but widely different reports come from that locality. Some report excellent yields, while others report almost a total failure. These honey fields of the New England States are always an important factor in the honey markets, both in quality and quantity, but will not come up to their usual supply this season, and scarcely to the quality of the same. These are the principal clover districts producers of red clover, white clover, and sweet clover. Red clover has furnished a good share of the honey this season, and this may be credited to some extent to the improvement in breeding stock on the line of red clover bees. To sum up, we may expect no glut in the honey market this year, and prices must be a little firmer than last, and the quality not quite so high. Those who have a good crop in good marketable shape this year need not go begging for prices, but many consumers will be deprived of the coveted sweets.

A Beginner.

EDITOR APIARY DEPARTMENT:—I am a young man just starting into the bee business; having lost my health from close confinement in the house, having been a cigar-maker for seven years. I thought bees would be as healthy work as I could find to do, and give me a reasonable amount of out-door exercise. I am beginning on a small scale with six good strong colonies, and desire all information I can get of course. I want to attend our next county fair, with bees and honey, and wish to know more particularly at this time how to prepare bees and honey for exhibition, both comb and extracted honey.

Norton, Kans. C. M. SWOPE.

Friend Swope, we are glad to help you all we can, and every other beginner, and we know of nothing better than to advise you to read the KANSAS FARMER apiary column regularly, and I think if you do this we can make a full fledged apiarist out of you in less than a year. If I were going to attend an exhibition of bees, honey, etc., I would select the best colony of Italian bees I had, one that shows distinctly the full three yellow bands characteristic of the Italian bee, and if I had a colony of the five-banded stock I would take them along, for nothing catches the eye better than the golden color of the Italians, and the more gold the better. I would also get complete new hives of the latest pattern, paint them up nicely, and put my bees in these new hives; that is, take the frames from the old hives, trim them up nicely, and put bees and all in the new ones. Take along the supers and all that belongs to the hive; the supers may not be put on the hive for they will be in your way of handling the bees, but have them along, so that you can show bisitors how they are used. Do not for-

get your bee smoker, or any other supplies you have, such as queen cages, foundation comb, your extractor, etc. It is not necessary to have glass hives, but just open your hives, take out the frames and show them, and also the queen, and all contained therein and give a lecture on bees and tell what you know about them. You may think it risky to thus expose the bees, but I never found it so, and I have attended such places hundreds of times and never had the least trouble.

For your section boxes of comb honey, use a glass case to keep it in, and if nothing better or larger can be found, the common shipping cases now furnished by all supply dealers are very good. For extracted honey, use the Mason glass fruit jars, or any other glass jar as good. Quarts and half gallons, and even pints are good. Get some nicely printed labels with your name and address on them, and name the variety of honey each jar contains if possible.

Black Bees.

EDITOR APIARY DEPARTMENT:—I have a colony of bees with black queen. On opening the hive a few days since I found them very cross, and myself and assistant received a large number of stings, much to our discomfort. I wish to get rid of the black queen and substitute a pure Italian. How shall I do it, and when is the proper time? I have taken about fifty pounds of honey from this colony this season.

Salina, Kans. J. G. MOHLER.

There is no better time during the year than now to change your queen. Hunt out the old black queen and destroy her first, then put your cage with the new queen in the hive according to printed directions that go with all queens sent out by reliable breeders, and the bees will do the rest. You do not say whether your bees are in a movable frame hive, but we suppose they are, so that to find the old queen, take out frame after frame until you discover her. Either kill her promptly, or cage her securely so she can not get away, for if she gets her liberty, she is liable to return to the colony. If you use a good bee smoker on your bees, you will have no trouble with their stinging you.

Grange Department.

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

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

NATIONAL GRANGE.

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

KANSAS STATE GRANGE.

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

Had a Good Time.

Fully 5,000 people attended the annual picnic at Cadmus, coming from all the surrounding towns and country. It was an ideal day for a picnic, cool and pleasant, the roads were fine and they all led to the right place.

The program was excellent and was fully appreciated by the large audience. The speech of Professor Otis was a talk for the farmers. He told of the different feed stuffs and of the composition of each. Professor Otis is from the State Agricultural College at Manhattan and spoke interestingly on the subject. All farmers should remember his advice in their future labors.

The address by Mrs. Calvin, also from the same college gave the men and women good advice by which they both could better their homes, by living in touch with domestic science, which was her principle theme.

Hon. E. W. Westgate, Master of the State Grange gave us a short, interesting address in the interest of Grange work, showing the many good results it has accomplished throughout the State.

Hon. Aaron Jones, of Indiana, Master of the National Grange, was the next speaker on the program and he delivered a very able address on the many benefits derived from cooperation. The audience gave him strict attention and his hour's talk passed only too quickly for the audience.

Mrs. Josie Miner gave us the history of the Cadmus Grange in such a manner that its workings were clearly understood by all. She gave the entire history of the grange from its starting down to the present time.

Music was furnished by the grange



band, which excellent organization always stands ready to respond to the call. A chorus of fifty voices, vocal solos, duets, and quartettes helped provide entertainment for the vast-crowd and was pronounced excellent.

The little folks' drill was well received. Their work showed constant practice and the little folks should feel well pleased by the applause they received when they had finished.

All seemed to enjoy themselves and good feeling prevailed throughout the entire day. Let everybody remember the good time had and return next year. —La Cygne Signal.

Beware of Ointments for Catarrh That Contain Mercury,

as mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is ten fold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, Ohio, contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally and is made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

Sold by Druggists, price 75 cents per bottle. Hall's Family Pills are the best.

Leading Exhibitions for 1902.

- Missouri State Fair—Sedalia, Aug. 18-23.
- Iowa State Fair—Des Moines, Aug. 22-30.
- Ohio State Fair—Columbus, Sept. 1-5.
- Nebraska State Fair—Lincoln, Sept. 1-5.
- Minnesota State Fair—Hamline, Sept. 1-6.
- Wisconsin State Fair—Milwaukee, Sept. 8-13.
- Indiana State Fair—Indianapolis, Sept. 15-19.
- Kentucky State Fair—Louisville, Sept. 22-27.
- Michigan State Fair—Pontiac, Sept. 22-26.
- Illinois State Fair—Springfield, Sept. 29-Oct. 4.
- Texas State Fair—Dallas, Sept. 27-Oct. 12.
- St. Louis Fair, Oct. 6-11.
- American Royal Hereford Shorthorn, Galloway, Aberdeen-Angus, Berkshire, and Poland-China—Kansas City, Oct. 20-25.
- International Live Stock Exposition, Dec. 1-6.
- Reno County—Central Kansas Agricultural Fair and Live Stock Association—Ed. M. Moore, Secretary, Hutchinson; September 15-19.
- Sedgwick County—The Wichita and Southwestern Exposition and Fair Association—H. L. Resing, Secretary, Wichita; September 22-27.
- The Kansas State Exposition—O. P. Updegraff, Secretary, Topeka; September 8-13.

Kansas Fairs in 1902.

Following is a list of fairs to be held in Kansas in 1902, their dates, locations and secretaries, as reported to the State Board of Agriculture and compiled by Secretary F. D. Coburn:

- Allen County Agricultural Society—C. H. Wheaton, Secretary, Iola; September 2-5.
- Barton County Fair Association—James W. Clarke, Secretary, Great Bend; September 2-5.
- Brown County Fair Association—Grant W. Harrington, Secretary, Hiawatha; August 27-29.
- Butler County Fair Association—H. M. Balch, Secretary, Eldorado; September 29-October 3.
- Chautauqua County—Hewins Park and Fair Association—P. N. Whitney, Secretary, Cedar Vale.
- Clay County Fair Association—E. E. Hoopes, Secretary, Clay Center; September 9-12.
- Coffey County Agricultural Fair Association—J. E. Woodford, Secretary; Burlington; September 9-12.
- Cowley County—Eastern Cowley Fair Association—J. M. Henderson, Secretary, Burden.
- Finney County Agricultural Society—Fred Mims, Secretary, Garden City; August 27-29.
- Franklin County Agricultural Society—Carey M. Porter, Secretary, Ottawa; September 16-19.
- Greeley County Fair Association—G. P. Hawkins, Secretary, Tribune.
- Harvey County Agricultural Society—John C. Nicholson, Secretary, Newton; September 23-26.
- Jackson County Agricultural and Fair Association—S. B. McGrew, Secretary, Holton; September 23-26.
- Jefferson County Agricultural and Mechanical Association—Geo. A. Patterson, Secretary, Oskaloosa; September 2-5.
- Marshall County Fair Association—E. L. Miller, Secretary, Marysville; September 9-12.
- Marshall County—Frankfort Fair Association—J. D. Gregg, Secretary, Frankfort; September 23-26.
- Miami County Agricultural, Mechanical and Fair Association—W. H. Bradbury, Secretary, Paola; September 9-12.
- Morris County Exposition Company—M.

F. Amrine, Secretary, Council Grove; September 24-26.

Nemaha County Fair Association—A. R. Spaulding, Secretary, Seneca; September 3-5.

Neosho County Fair Association H. Lodge, Secretary, Erie; September 30-October 3.

Neosho County—Chanute Agricultural, Fair, Park, and Driving Association—A. E. Timpane, Secretary, Chanute; August 26-29.

Ness County Agricultural Association—H. C. Taylor, Secretary, Ness City; September 24-26.

Norton County Agricultural Association—J. L. Miller, Secretary, Norton; September 2-5.

Osage County Fair Association—E. T. Price, Secretary, Burlingame; September 2-5.

Rice County Agricultural Association—C. Hawkins, Secretary, Sterling; September 8-12.

Riley County Agricultural Society—A. B. Lee, Secretary, Riley; September 2-5.

Rooks County Fair Association—Olmer Adams, Secretary, Stockton; September 9-12.

Saline County Agricultural, Horticultural and Mechanical Association—H. B. Wallace, Secretary, Salina; September 2-5.

Stafford County Fair Association—Frank C. Swartz, Secretary, St. John; August 20-22.

Wilson County—Fredonia Agricultural Association—J. T. Cooper, Secretary, Fredonia, August 19-22.

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Official Report of State Authorities.

University of Wisconsin—630 lbs per hour; test skim milk... 01
 Conn. Agr. College—927 lbs per hour; test skim milk... 02
 Ohio State University—"Doing good work" test skim milk... 02
 Univ. of Tenn.—"Very satisfactory" test skim milk... trace
 N. H. Agr. College—"The boys like it" test skim milk... 01
 Hatch Experiment Station, Mass.—692 lbs per hour; test skim milk... 02
 Kansas State Agr. College—660 lbs per hour; test skim milk... 03
 Pennsylvania Agr. College—"Did very good work. It skims very clean."
 University of Nebraska—"Runs very light. Doing good work."
 Tuskegee, Ala., Industrial Inst.—"The thoroughness of skimming is remarkable."

SHARPLES CO. P. M. SHARPLES,
 Chicago, Ill. West Chester, Pa.

In the Dairy.

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

Don't Stint on Feed.

During the past few weeks, pastures have been growing short. The recent rains will, no doubt, freshen them up considerably, but where they are heavily stocked, feed is liable to be scarce and the cattle will be pushing on the fence to get into the corn field. For the next month, dairy cows will shrink considerably in their yield unless supplied with plenty of nutritious feed. No greater profits can be realized from corn than by cutting it green and feeding it to milch cows when needed. A soiling experiment at the Kansas Experiment Station showed an income of \$22.79 per acre from green corn. The profit comes not only from an increased milk flow, but in tiding the cow over so as to maintain a good flow for full feeding. If green corn is not available, feed green alfalfa or alfalfa or clover hay. It is advantageous to have some dry feed to which the cows may have access, even when on luxuriant pastures. When dry feed is kept before them all the time, the cows will regulate the amount eaten in accordance with their needs. Don't stint on the feed. A stinted cow means a stinted pocket book.

D. H. O.

An Enterprising Dairy Student.

Mr. R. H. Blair, dairy student in 1902, now holding a position as manager of the Broadmoor Sanitary Dairy at Colorado Springs, Colorado, sends in his monthly statement for July, 1902, as follows:

Number cows reported.....	152
Bran fed, pounds.....	20,790
Alfalfa soiled, pounds.....	257,755
Milk produced, pounds.....	98,865.5
Bran per cow per day, pounds..	4.41
Alfalfa soiled per cow per day	
pounds.....	54.7
Milk produced per cow per day,	
pounds.....	20.9
Feed cost, per one pound milk.. \$.0044
On scant pasture per day, eight hours.	

In addition to this report Mr. Blair has the following to say in regard to his experiences along dairy lines since he left college last March:

"No records except a very defective breeding record were kept at the time I arrived. Now all our cows are adorned with Dana ear labels, and records are kept of every transaction and change. Broadmoor is one of the largest if not the largest of the twenty-three dairies which supply the thirsty of Colorado Springs. We are the only dairy people producing our own alfalfa and ensilage; very few have any silage at all.

The dairy comprises in all about 2,500 acres of land—2,000 pasture, 200 alfalfa under irrigation, 200 corn land, and balance yards and lots. The greater part of the pasture is rough upland, largely set to buffalo and kindred native grasses. Some is very boggy and grows blue-grass and clover in profusion. The alfalfa land is held at \$300 per acre, with offers of \$250.

Town lots are staked up to the northern edge of the dairy.

The "loco" weed grows over the pastures here but we have had no trouble with it this summer. The so-called deer fly, which in Kansas may be seen buzzing around the horses' ears and alighting on them while driving along timber and streams, is here very plentifully.

We employ at present, six milkers, at \$35 per month, each man caring for his own "string," feeding the grain and roughage and cleaning out the stalls.

We have Holstein, Swiss, Jersey, and even two Herefords, also a number of Shorthorn grades. Our Jersey bull, "Tex," took first at the State Fair last year.

We use a neck strap with small chain connection to manger, with a ball on the end to keep taut. We have no stanchions in the cow barns.

At present we are not feeding grain heavily, as you will see by reports. I bought buckets for the milkers, painted narrow lines around and made figures to indicate pounds of bran to each ring; a graduated bucket you might call it. Then I posted cards with thumb tack in center at head of each stall. The number at top indicates the number of pounds of bran to feed that cow, and I change it as I think advisable. I keep a record of the feeds and at the end of the month each cow is debited with the amount against her.

When I came here they were buying bran at retail, paying \$1.15 per 100 pounds for Kansas bran and \$1.25 per hundred pounds for Colorado bran from Longmont, Colorado. I wrote Lee-Warren Milling Company, Salina, Kansas, and secured a car, 400 100-pound sacks at 85 cents per 100 pounds, delivered at Colorado Springs, a saving to my employers of \$130 per car. I have since secured another car-load at 90 cents per 100 pounds, delivered at Colorado Springs.

All our green alfalfa is weighed as placed in the barns and a monthly account kept with each cow. We are weighing and recording every milking of every cow of the entire lot of 152 head, and I think we are the only dairy people in Colorado doing this. I make out a weekly report of the total milk from each "string," with gain or loss over the last week, totals for week and average per day. We will test each cow for butter-fat this month; have been too busy for that before. I am hoping we shall soon be able to weigh each cow every month.

We fed our calves at 5 p. m. and 6 a. m. We test the temperature with a thermometer, sterilize the milk and run it over a cooler. We use lime water and remedies advised in the U. S. Department of Agriculture book on Diseases of Cattle, and have had good success against scours. The calf barn has stanchions for forty-eight calves and is very nicely arranged. I had four buckets made with rings graduated in the metal to correspond with quarts. We use these in feeding. We are feeding blood-meal to our weakly calves with good results.

My experience with fly repellants would seem to prove that about twenty-four to forty-eight hours is the period of comparative immunity from attack, and less if a shower comes.

We have tracks running from all barns to the creamery and silos.

Our silos cost \$450 each and are very fine. We use a Ross No. 14 and a Smalley No. 18 ensilage cutter and a 40-foot elevator in filling silos.

Our creamery boiler is a Willard, twenty-five horse power and Paragon engine, six horse power. We have a Troemer's No. 4 analytical scale, capacity 100 grammes, sensitive to one-fourth milligramme. Since I came here we have bought an Ideal twenty-two bottle Turbine tester and exchanged our old Baby turbine separator for a new De Laval dairy turbine. We have a sterilizer for 162 bottles and full equipment of glassware for testing of all kinds.

We have a 500-ton alfalfa barn on the ranch, besides room above, in the cow barns. We have spring water piped to the yards and creamery from a nearby spring.

We use creamery package bottles, boxes and cases for delivering milk. This plan is working into the markets very well. Ordinary milk from our dairy sells at fourteen quarts for \$1, Jersey milk at twelve quarts for \$1. We could sell twice as much milk as we produce. We buy outside all we can that is good. We ship forty gallons of cream per day and resell it at a profit.

We have been thinking of buying or building a skimming-station, forty or

fifty miles out. Then we could ship our own cream. We have to furnish a 40 per cent cream to get in on the fancy trade here, and the margin of profit is very small. We supply the "Antlers" and the "Alta Vista," the highest class hotels in the city, with an average of about fifty gallons of milk and from twelve to fifteen gallons of cream. We also ship to Manitou."

Renovating Old Pastures.

R. E. LONG.

Forty years ago, this subject would have meant very little to our people, for their pastures were all that could be desired, and needed no renovating. The uplands were covered with a heavy growth, varying in height from one to three feet, while in the lowlands the grass was so tall and dense that it is said the sun's rays never struck the ground.

But to-day things are different. Our meadows are so poor that the grass we get from them hardly pays for the cutting and our pastures are almost worthless for grazing purposes.

What is the cause of this great change? Is our land not as rich as it was then?

When the Indian and buffalo roamed over our prairies, there was a comparatively small amount of the grass eaten off, and, consequently, when winter came, the remaining grass fell down and formed an excellent mulch for next year's crop.

During later years the farmers seem to have held the impression that the grass would last forever. They buy all the stock possible and allow them to graze on the land with the result that the grass is all eaten and when the hot summer winds blow over the country the land is dried out and many of the plants killed.

Another great injury is done the pastures by burning them off in the spring. It is true, the new grass looks fresh and green when the old has been burned off, but all the mulch has been destroyed and the nutriment which it would furnish the land is lost.

Hence, we see that the first and most

DE LAVAL CREAM SEPARATORS

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important thing to do in renovating old pastures is to provide a good mulch for the plants. This can be done by keeping all or nearly all the stock off until the grass gets a start, and by putting a stop to the burning in the spring. In 1892, the Experiment Station at Manhattan conducted an experiment with an old pasture. They disked it in the spring and sowed tame grass. The native grass grew up and killed out the grass sown. This shows that there was no necessity for sowing the tame grass. The best thing to do for the pastures will be to take nearly all the stock off in the spring and go over the ground with a disk harrow. This will cut the sod and open it up to the air and rains.

How Far Should You Consider the Test in Selecting a Dairy Cow?

L. CARTER.

In starting into the dairy business, it is always the aim to get out of it as much profit as possible. To accomplish this there are several points which the dairy cow must possess. She must have the ability to consume a great amount of feed and convert it into milk; she must have a large, well-shaped udder which will secrete a large

BUTTER MAKERS
 make better butter and more butter by using the
KNEELAND OMEGA CREAM SEPARATOR
 simple, cheap, efficient. Easily cleaned. Free from repairs. Guaranteed to suit or money back. Send for Free book, "Good Butter and How to Make it." The Kneeland Crystal Creamery Co., 28 Concord St., Lansing, Mich.



...WE GOT...

20 Cents a Pound for Butter Fat in July

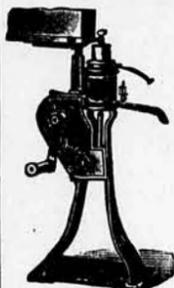
WHAT DID YOU GET?

600 Shippers to

BLUE VALLEY CREAMERY COMPANY

St. Joseph, Mo.

PAYS BETTER THAN A SAVINGS BANK



Owing to its many money-saving and money-earning qualities, there is no better investment that a Dairyman can make than a U. S. Cream Separator. Eight or nine cows and a U. S. Separator are equal to ten or eleven cows without one, to say nothing about the cost of feeding and labor saved. Dairyman who are getting along without a separator, thereby hoping to save the expense of buying one, are making a grave mistake, as they are sure to find out sooner or later. Many have wished they had bought sooner, so will many others when they know the superior qualities of the U. S.

If any dairyman was sure he would save enough the first year to pay for his separator, wouldn't he buy? Well, that is just what hundreds and thousands of purchasers of the U. S. Separator have done, and some have made enough in six months.

If you keep cows, write the **VT. FARM MACHINE CO., Bellows Falls, Vt.,** for their booklet "How to Make Money," which tells of a few of the many profitable experiences of users of

THE U. S. SEPARATOR

amount of milk; and her milk must have a fairly high-testing quality.

The last of the three-mentioned requirements is of the least importance. It has been proven by actual experiment that the highest testing cows are not necessarily the most profitable ones, on account of the fact that they usually give a smaller quantity of milk.

On the other hand a cow that gives a large flow of milk will produce less butter-fat in proportion to the amount of milk, thus giving a smaller test, but with the great amount of milk she will produce a much greater amount of butter-fat.

A dairy cow should be selected with reference to the purpose for which she is to be used. If she is to furnish milk for a city where the test is not an important consideration, it would be best to choose the cow which gives the greatest amount of milk, but if she is to produce butter-fat for a creamery, her test should be high and the flow of milk sufficient to insure a good profit.

Rambling Dairy Notes.

J. O. AMBLER.

The dairy barn should be as clean and free from odors as the dairyman's own house, warm in winter, cool in summer and full of fresh air the year around.

Plenty of pure, clean water should be kept where the cow can get it whenever she so desires.

Feed should be of a good quality, fed regularly and in sufficient abundance to keep the cow in good condition and to produce a good flow of milk.

The cow should be treated kindly. A little patience on the part of the dairyman will be repaid at the end of the month when the milk check comes in.

WEEKLY WEATHER CROP BULLETIN.

Weekly weather crop bulletin for the Kansas Weather Service, for the week ending August 19, 1902, prepared by T. B. Jennings, Station Director.

GENERAL CONDITIONS.

Fine rains occurred in the eastern half of the State the first of the week, with good rains in several of the counties in the western half. Cool weather prevailed the first two days and very hot weather the rest of the week.

RESULTS.

EASTERN DIVISION.

The early corn is practically matured and is being cut in several of the central and southern counties, and in Woodson new corn has been put on the market; late corn is suffering for rain in some counties. The early corn is now nearly all safe from frost and the late will be by September 15th to 20th.

Allen County.—Strong wind and rain on 10th damaged stacks and blew down some corn.

Anderson.—Heat injuring late corn and delaying fall plowing; early corn ready to cut.

Bourbon.—Early corn safe from frost, late will be safe about October 1.

Brown.—Corn showing effects of dry weather, though early corn is generally fairly good; late corn and pastures need rain.

Chase.—Considerable damage to corn in southwest part, cutting commenced; hay about completed; web worms injured third crop alfalfa, and cut seed crop short.

Chautauqua.—Early corn being cut; forage crops in fine condition; threshing nearly finished and plowing well advanced.

Coffey.—Good haying and threshing weather; corn maturing rapidly, late will be out of danger from frost by September 1.

Crawford.—Crops in good condition; threshing and plowing in progress; pastures good; fruit fine and abundant.

Doniphan.—Early corn will be a good crop, late needs rain.

Elk.—Late corn will be safe from frost in a couple of weeks; some Kafr-corn very late, needs rain for grass and late corn.

Franklin.—Crops doing well; all early corn will be safe from frost by the 1st of September, and late by the 15th or 20th.

Geary.—Good rain of 9th did all crops much good; corn-cutting begun, but recent rain will delay ripening and cutting for about a week; much plowing being done.

Jackson.—Corn, especially late, suffering and much fringing; too dry for plowing; threshing about over.

Jefferson.—Fine week for making prairie hay and plowing; early and late corn will be safe from frost the 1st and 20th of September respectively.

Johnson.—Corn will be beyond damage by frost by September 15th, sufficient moisture to mature crop; blue-grass seed yielding well, with price low; fall plowing well advanced.

Labette.—Early corn will be out of danger from frost by September 1st, some being cut now, late will be safe by September 15th; plowing for wheat in progress; prairie hay yielding heavy crop.

Leavenworth.—On the 10th three inches of rain fell in three and one half hours, knocking birds from trees and drowning great numbers.

Linn.—Plowing progressing but ground getting too dry; wheat being marketed freely, but much of it badly damaged and of low grade; early corn practically matured.

Marshall.—Late corn damaged, except north portion where light showers kept corn growing nicely; early corn will be out of reach of frost

by September 1st, late by September 10th; cane, Kafr, and millet large crops; in north part, ground is fine for plowing and pastures are good.

Montgomery.—Ground in good condition for plowing first half of week; threshing about done, haying in progress; corn being cut, late corn will be beyond injury by frost by about September 5th.

Nemaha.—Rain would be welcome for corn and pastures; late corn considerably damaged, early will make a good crop; plowing still in progress.

Pottawatomie.—All crops doing well; early corn out of all danger and late will be beyond damage by frost by September 15th.

Riley.—Early corn safe.

Shawnee.—Corn filling nicely, except in northeast part where it is ripening too soon; third cutting of alfalfa commenced, light crop and some very weedy; hay a very large crop; plowing progressing nicely; pastures good and cattle doing well; large crop apples ripening and grapes maturing.

Wilson.—Enough moisture to mature corn and keep pastures good for some time; haying continues; corn-cutting begun and late will be safe in about ten days; apples falling some.

MIDDLE DIVISION.

Early corn is about matured, and is being cut in many counties; in the northern counties it will be matured and out of frost's way by the middle of September. Late corn has been damaged by dry, hot weather in several counties; it will mature and be safe from frost from September 15th to 30th. Forage crops are generally in good condition, but Barber reports them fired. The third crop of alfalfa is in the stack in Barber and Barton. Prairie haying continues and a fine crop is being put up. A good crop of millet is being put up in the northern counties. Grapes are ripening in Cowley and are especially fine. Apples are a poor crop in Barton. Watermelons are abundant in Pratt. Leaves are falling from the trees in Pratt. The ground is in fine condition in Sumner and plowing is progressing rapidly, but over much of the division the ground is too dry.

Barber.—Late corn and forage crops badly fired; corn-cutting begun; third crop alfalfa in stack; pastures drying up; water plentiful and cattle doing well; ground too dry to plow.

Barton.—Plowing stopped by dry weather; good weather for work; seed alfalfa cut and stacked; apples falling, wormy and poor crop.

Clay.—Late corn considerably damaged; some few fields absolutely failures; early corn will be good yield; rain badly needed.

Cloud.—Corn damaged in south portion; ground too dry for plowing.

Cowley.—Threshing and haying; corn made and out of danger; plowing for wheat; watermelons

W. T. REDMON GRAIN COMPANY, JAMES BUTLER, (INCORPORATED.) W. T. REDMON, Secretary and Manager. Commission Merchants. 404 Board of Trade, Kansas City, Mo. Grain, Hay, Seeds and Provisions. We solicit consignments from Co-operative Associations, Independent Dealers and Farmers, and make a specialty of handling their grain.

THE L. A. ALLEN Cattle Commission Co. L. A. ALLEN, JAMES R. HAWPE } Salesmen. 25 YEARS IN THE CATTLE TRADE. SELL CATTLE ON COMMISSION. And Fill Orders for Stockers and Feeders. Market Price Guaranteed. Office, 267-268-269 Second Floor Exchange Bldg. OVER INERSTATE NATIONAL BANK. STOCK YARDS, KANSAS CITY, U. S. A. References—Inter-State National Bank and Cattlemen Generally.

condition in north still good; corn not burned will be past danger from frost by September 1; native hay never better.

Finney.—Grass well cured on ground and cattle fattening; forage crops damaged badly, except that Kafr and sorghum in northeast portion are holding out well; rain needed for last alfalfa crop.

Ford.—Late corn burned up; alfalfa making fine seed crop; cattle doing well; melons plentiful.

Grant.—Feed crop cut short by drought; poor crop of broom-corn; stock doing nicely; grass cured.

Hamilton.—Very dry and crops firing badly.

Lane.—Most of cane and some corn cut; Kafr-corn the only forage crop that stands the dry weather; grass about all cured.

Morton.—Fine hay weather; high wind of 9th knocked off apples and peaches.

Rawlins.—Dry; weather injuring corn and

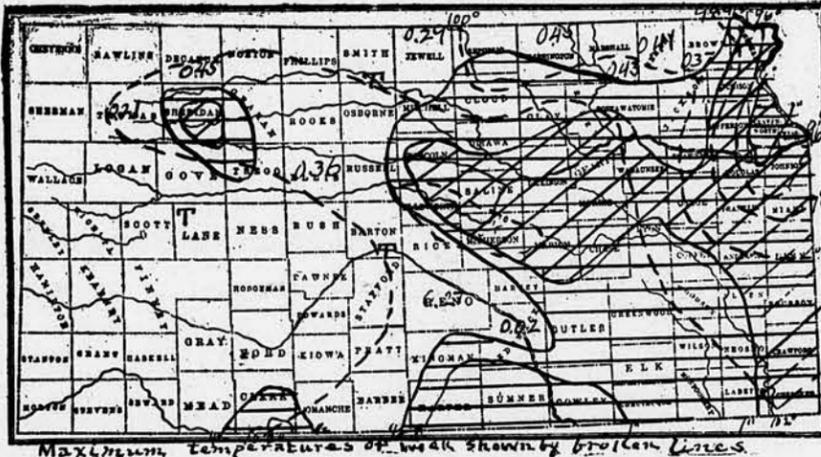
tion. We should be pleased to extend credit to honest people located in all parts of the world. Knowing that the readers of the Kansas Farmer are honest, we should, therefore, be pleased to extend credit to all the readers of the Kansas Farmer. Write for free catalogue. This is the greatest bargain ever offered. We refer you to the Southern Illinois National Bank of East St. Louis, Ill. Century Manufacturing Company, capital \$500,000. Department No. 54, East St. Louis, Ill.

The Western Normal College, Shenandoah, Iowa, opens its doors for next school year on September 2. This is a strictly high-class normal and business school, located in the best college city of southwestern Iowa. Kansas students will be made welcome. Note the scope of last year's attendance and work. Enrollment for last school year 850. A prominent feature is training work for teachers, first, last, and all the time, and approved by the State of Iowa. Business and shorthand graduates are found places as fast as prepared, there being twenty placed in the month of July. Advanced scientific and didactic courses are given to all who want them, and usual degrees conferred. The music conservatory is unsurpassed in equipment and has best of instructors, and at little more than half usual conservatory rates. Preparatory courses also for medical, dental, and other technical colleges. Grades of Western Normal College are accepted by the best of these schools. The aim throughout is practical education in shortest time and at least expense. See the advertisement and write for college catalogue.

J. R. Ratekin & Son, Shenandoah, Iowa, are soliciting seed wheat orders for their celebrated "Malokoff" and other standard Russian and Turkish Red varieties of winter wheat. Please see their advertisement in this paper, and note prices. In writing for circular or for information always mention Kausas Farmer.

We call special attention to the new advertisement on page — of the Bears Powder Company. They manufacture powder for the extermination of vermin of all kinds, lice on cattle, fleas on dogs, etc.

Rainfall for Week Ending August 16.



SCALE IN INCHES. Less than 1/2, 1/2 to 1, 1 to 2, 2 to 5, Over 5, T. trace.

plentiful and high price; fruits fine, especially grapes.

Ellsworth.—Cutting corn; Kafr heading; hay a good crop; very hot and dry.

Harvey.—Late corn will be safe from frost by September 1.

Jewell.—Much corn injured by dry, hot weather; prairie hay, millet, and sorghum, fine crops and being put up.

Kingman.—Corn will be out of danger by frost by September 1, some late damaged by drought; cutting in progress; threshing continues, and some plowing being done but ground getting dry; haying commenced.

Lincoln.—Early corn will be out of danger from frost in about two weeks, late needs rain badly and will not be out of danger from frost for six weeks; two-thirds of fall plowing done but ground getting too dry; some damage by high winds of 9th.

McPherson.—Corn being cut, will almost all be in shock inside of a week; too dry to plow last of week.

Pratt.—All vegetation dried up except Kafr and sorghum which are injured; leaves falling from trees.

Reno.—Threshing nearly done; corn much damaged by dry weather, but promises moderate crop where cultivated, most fields still green; some plowing but ground too dry for good work.

Republic.—Corn hurt; good time for threshing as but little grain was stacked.

Saline.—Corn in excellent condition except in western portion, early corn on bottom lands promises large yields, early will be safe from frost by August 25 and late by September 15.

Sedgwick.—All corn injured somewhat, late more than early, but a good crop is in prospect.

Smith.—Wheat yield poor; early corn in hard roasting-ear, late fired but will make good fodder; heavy crop of millet and cane; Kafr doing well but needs rain for heading.

Stafford.—Corn will probably be safe from frost by September 10; corn being cut; hay about all in stack.

Sumner.—Ground fine for plowing; stacks too dry to thresh.

Washington.—Early corn will be safe from frost by about September 20 and late October 1; corn suffering for rain; oats not very good; Kafr heading; millet very heavy and mostly in stack; ground too dry to plow; grapes ripening.

WESTERN DIVISION.

Corn has been more or less injured in this division, especially the late; it will be safe from frost by September 1 to 15. Wheat is a fair yield in Sheridan, but not very good in the county. The range-grass has burned on the ground in a large part of the division; the native hay is very good. Forage crops are generally standing the dry weather well. Alfalfa needs rain. Wind blew many apples and peaches off the trees in Morton. Melons are plentiful in Ford. Forage-corn is a poor crop in Grant. Cattle are doing well.

Grant.—Cattle are doing well.

Clark.—All crops and vegetation need rain.

DeSoto.—Corn south portion badly burned, but

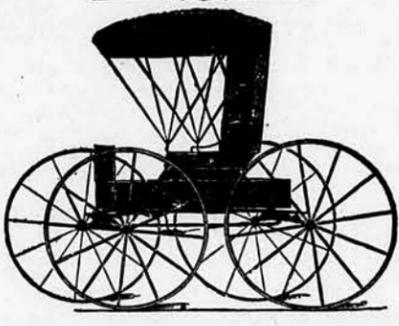
cane; last crop alfalfa shortened by dry weather; no potatoes except very early planting.

Sheridan.—Some corn damaged; wheat showing fair yield and good quality; corn will be safe from frost by September 15.

Thomas.—Corn badly damaged; threshing continues with poor to fair yields; wheat in northeast portion good; feed crops damaged; too dry for plowing.

Trego.—Light third crop of alfalfa ready for cutting; fair crop of corn, will be out of danger by September 1; prairie hay good but stem-haying about finished; prospect for good crop of alfalfa seed.

Wallace.—Upland crops drying up; corn will be out of danger from frost by September 15; ming rapidly.



This elegant buggy, No. 195 Hummer, either end springs or side springs same price, wheels select hickory, 3/4, 7/8, or 1 inch tires, wheels 32-42 or 40-44, very finest quartes leather top, heavy roof and back curtains, solid leather trimmings, long distance axle, wide or narrow track, wide track is 5 feet 1 inch and narrow track is 4 feet 8 inches, finest painting, 10 coats of paint on the body and 5 on the gear; painting on body, black, gear, brewster green or carmine; side curtains, storm apron, carpet, all complete with each buggy, price only \$42 on terms of \$10 cash with order, balance payable \$4 a month, no interest, or if the customer prefers purchasing for spot cash and does not wish any credit, we will then allow a cash discount of \$2 and will furnish this elegant buggy for \$40 spot cash. This includes shafts, pole, no shafts, \$1.25 extra, pole and shafts both \$3 extra, fully warranted for three years. The Century buggies are the only buggies in the market that are warranted for three years. The freight on a buggy from our factory to any point in Kansas will amount to about \$5.25. Send us your order, either for cash or on credit terms whichever you prefer, and the order will receive our prompt and careful attention.



A Miraculous Feat.

"It seemed that nothing short of a miracle could save my little daughter from an untimely death," says City Marshall A. H. Malcolm, of Cherokee, Kan. "When two years old she was taken with stomach and bowel trouble and despite the efforts of the best physicians we could procure, she grew gradually worse and was pronounced incurable. A friend advised

Dr. Miles' Nervine

and after giving it a few days she began to improve and finally fully recovered. She is now past five years of age and the very picture of health."

Sold by all Druggists. Dr. Miles Medical Co., Elkhart, Ind.

THE MARKETS.

Frasius' Market Review.

Topeka, Aug. 18, 1902. Market changes were unimportant last week and it seems the bottom has been reached. Primary receipts of winter wheat are very large everywhere; the paradoxical feature is, the visible supply does not indicate the large primary receipts. In fact, the visible supply has decreased for some time. Either a good share of the primary receipts is placed in private elevators, where it does not count in the visible supply, or there is a larger domestic consumption of wheat than ever. True, the exports are growing some; considerable over four million bushels of wheat cleared from our shores last week, and today there was loaded for export on the Atlantic coast alone over one million bushels. This large export for one day, hardly proves the existence of such wonderfully large crops, as they have been claiming in Europe. The writer believes the large primary receipts of wheat are the result of a crop, poor in quality; because farmers are unable to take care of large volumes of poor, damaged and damp wheat at home. If this is the case there will probably be a lively demand for good samples of milling wheat later in the season. Out of 355 cars received in Chicago to-day only three cars graded No. 2. In most parts of the Southwest the yield, too, has been light. The late Government report gives Kansas about 35,000,000 bushels as this year's crop, which is corroborated by several hundred Kansas reports compiled by the Southwestern Grain Journal of this city. In this connection it might not be improper to refer to a communication by C. Wood Davis, printed in the Kansas Farmer last March. Mr. Davis at that early day predicted exactly what has come to pass in so far as it relates to the yield and quality of Kansas wheat. At that time and for some time after Mr. Davis's letter was ridiculed by so-called crop experts and Kansas land boomers, who always overdo things. If we had more observing men like Mr. Davis our crop statistics would be more reliable. Prices for corn and oats are gradually sinking, caused by the abundant yield of the oat crop which has been made and the promise of the growing corn crop. Markets to-day closed as follows:

Chicago.—No. 2 red wheat, 71c; No. 2 hard wheat, 69 1/2c; No. 2 corn, 55 1/2c; No. 2 oats, 27 1/2c; September option wheat, 69 1/2c. Kansas City.—No. 2 red wheat, 64c; No. 2 hard wheat, 65 1/2c; No. 3 hard wheat, 61c; No. 4 hard wheat, 56c; No. 2 ton No. 2 wheat, 62 1/2c; No. 2 corn, 49c; No. 2 oats, 28 1/2c; September option, F. W. FRASIUS.

Kansas City Live Stock.

Kansas City, Aug. 18, 1902. Receipts of cattle here last week exceeded those of Chicago by 400 head. Local arrivals amounted to 59,800 head, constituting the biggest run of the year. Of this number about half were taken by the packers and over 25,000 head went out to Eastern and local feed lots. A pronounced scarcity of well-finished heaves featured the market. Owing to the light supply such cattle sold about steady all week. Best steers sold up to \$8. Morgan & Wertz, of Falls City, Neb., had in a bunch of Iowa and one load of Northern Missouri cattle that brought this price, and J. M. Rhodes, of Frankfort, Kans., also reached \$8 with two loads of Galloway long yearlings, the last of his feeding for the season. Medium grass steers declined 15c to 25c during the week. Native cows broke as much as 40c in some cases. Western culling cows showed a moderate decline, amounting to only 10c. In the quarantine division a fair run was had and prices declined 10c to 35c.

A tremendous business was done in stockers and feeders. Illinois men were in by the score and wanted good cattle ready for the feed lots. Whiteface feeders sold up to \$5.75, and a bunch of good Polled Angus brought \$5.60. Shipments for the week were over 800 cars, the heaviest of the year. Prices advanced the forepart of the week and then receded later on. A fair share of desirable feeders sold from \$5 to \$5.50. Stockers ranged from \$3.50 to \$4.50.

On Monday, C. P. Dewey, of Manhattan, Kans., marketed a load of top hogs at \$7.32 1/2. This was the best price of the week. From the first of the week until the close, one continual break featured the market. A slight reaction was had on Saturday, however. The total decline for the week amounted to 25c to 50c. The local supply was right at 31,200 head, an increase of 7,000 compared with the preceding week. Other markets showed light supplies. Packers persisted in their bearish tactics all week and have now forced prices down dangerously near the \$7 mark for tops. Very good hogs sold on Friday at \$6.75. Local traders look for continued declines, as it will not be long before the new corn crop ushers in a better supply of swine.

The run of native sheep during the week was light, and showed that the surplus has now left local farms. Westerns arrived in liberal numbers, however. Total arrivals amounted to 19,200 head. Other markets were favored with big receipts, the bulk of which consisted of Westerns. In spite of this, the market strengthened. Lambs close for the week from 15c to 25c higher than at our last report. Prime natives would now bring around \$6, but a fair class of lambs sells for \$5.75. Utah lambs of only fair quality sold as high as \$5.80. Muttons showed but little change. Westerns advanced a little, while natives, particularly ewes, remained nearly stationary. Heavy wethers are worth \$3.75, and yearlings \$4.00; ewes command from \$3.25 to \$3.60. The demand for feeding sheep continues the strongest for years. Kansas feeder buyers are especially anxious for supplies. Countrymen and killers often compete for the same bunch of sheep, and several instances are recorded where the farmer comes out ahead. Feeding lambs are worth from \$4.00 to \$4.20 for the best and wethers from \$3.00 to \$3.50.

Another inactive week was had in horses and mules. Continued light supplies accounted for this condition of the market, however, more than any other factor. Big mules command from \$150 to \$165 on the open market, which is about \$25 to \$35 per head higher than last fall. Trade will not show much improvement until the middle of September. No quotable change could be noted in the poultry market during the week. All

arrivals were taken care of at the old basis of values. Springs are quoted at 12c; hens, 9c; roosters, 20c each; ducks, 6c to 9 1/2c; geese, 4c. Turkey hens sold strong and are now worth 11c. Eggs steady at 14 1/2c. Receipts of the latter are no more than enough to supply the trade. Creamery butter steady, packing butter weak. The former is worth 18c to 19c, and the latter 13c; dairy butter, 17c. H. A. POWELL.

St. Joseph Live Stock Markets.

South St. Joseph, Mo., August 18, 1902. The demand from all of the buyers was in excess of the supply of cattle good enough to sell from \$7.25 and up and prices ruled firm each day while the kind of cattle selling below that figure, which grades made up the big end of the receipts, declined 10c to 15c in value. The cow and heifer market ruled lower under liberal receipts, mostly Colorado and Nebraska range cows and Texas offerings, the break being from 10c to 15c on the good fat kinds and canners and 25c on all others. The demand from the country was strong all week for the good quality light stock cattle and good heavy feeders while others were in slack request at 25c to 40c decline in value. Colorado and western Nebraska cattle predominated the receipts.

Receipts in the quarantine division were liberal and showed a good increase with both the previous week and the same week a year ago. Steers were in heavy majority with the demand excellent and the week closing up 10c higher. Cows were in fair quota and the market had plenty of life during the week although prices broke 10c to 15c. Calves were in strong request at 25c to 50c range of values, with best kinds at \$6.

Hog prices have at last been forced under the \$7 mark and packers still continue to pound the market when receipts are liberal and are reluctant to grant higher values when sellers have things their own way. The range of prices to-day was from \$6.70 to \$7, with the bulk selling at \$6.80 to \$6.90. The general quality averages fairly good with the average weight about like the few last weeks.

Arrivals in the sheep department reached liberal numbers with Western sheep and lambs making up a heavy percentage of the receipts while natives were not in sufficient supply to cut any figure in the general market. The demand was good from all the killers and the trade had good life during the week. Lambs advanced 25c to 35c in value, with good but not choice Westerns at \$5.85. Yearlings and wethers sold 10c to 25c higher, with the latter offerings selling to the best advantage. The ewe market, however, was just the reverse, in sympathy with the bad conditions of the markets East, prices slumping 25c to 30c.

PILES

Fistula, Fissure, all Rectal Diseases radically and permanently cured in a few weeks without the knife, cutting, ligature, or caustics, and without pain or detention from business. Particulars of our treatment and sample mailed free. Mr. M. McCoy, Gogonac, Kans., Captain Company A, Fifteenth Indiana Infantry, writes: "Hermit Remedy Company, Dear Sir:—I have doctored for piles since the Civil War—thirty-six years—and am now glad to report that after using your treatment for a few weeks I am completely cured. I believe you can cure any one for a man could not be in a much worse condition than I was and live and I am duly grateful to you. Respectfully, "M. MCCOY."

We have hundreds of similar testimonials of cures in desperate cases from grateful patients who have tried many cure-alls, doctors' treatment, and different methods of operation without relief. Ninety per cent of the people we treat come to us from one telling the other. You can have a trial sample mailed free by writing us full particulars of your case. Address, HERMIT REMEDY COMPANY, Suite 738, Adams Express Building, Chicago, Ill.

8000 FERRETS

Trained ferrets, they will clean your place of rats, and drive rabbits from burrows. Pure-blooded and finest working strain in America. Send for wholesale list and book guide to care and working. S. & L. Farnsworth, New London, Ohio.

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Located in the Indian Territory, for which titles can pass. Consisting of 80-, 160-, and 200-acre tracts convenient to railroads. Good farming land—some in cultivation. Prices from \$11 to \$20 per acre. Address

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Advertisement for a steel range. \$18.60 Guaranteed Steel Range No. 8. For \$18.60 without reservoir or top closet, \$24.50 with reservoir and top closet as illustrated, polished steel body, mirror finish, 360 lbs. oven 16 x 20, catalog free. Shows Ranges, Cooks & Heaters in all styles at factory prices, save you nearly one-half in price. Ranges shipped subject to examination on receipt of \$1 money refunded if not as represented and satisfactory. Empire Stove Manufacturing Co. Minneapolis, Minnesota, and Box 752 Kansas City, Mo.

Special Want Column.

"Wanted," "For Sale," "For Exchange," and small or special advertisements for short time will be inserted in this column, without display for 10 cents per line of seven words or less, per week. Initials or a number counted as one word. Cash with the order. It will pay. Try it.

CATTLE.

WANTED—Cattle to keep by month or year. Plenty of range and good water. Address box 64, Cheyenne Wells, Colorado.

FOR SALE—Three registered and six high-grade Shorthorn bulls; all fine animals. G. R. Voisburg, Thayer, Kans.

REGISTERED HEREFORD SALE—My entire herd of 27 Herefords will be sold at the Chanute Fair Grounds, August 29, last day of Fair. Claude Sturdevant, Chanute, Kans.

FOR SALE OR TRADE—I have a young herd of Registered Shorthorn Cattle. I will sell or trade on a small farm in eastern Kansas or eastern Oklahoma, or for other young cattle. D. W. Hutton, Newkirk, O. T.

FOR SALE—Cattle or horse ranch, seven miles from Cheyenne Wells, Colorado. Good new buildings, Good water and plenty of range. Address O. J. Blakesley, Cheyenne Wells, Colorado.

DAIRY STOCK FOR SALE—To reduce our stock we offer for sale, Fifty High Grade Shorthorn Cows, all good colors and fine milkers, broke to halters. Also twenty registered Jersey cows and heifers, three Jersey bulls. These are a fancy lot of cattle, and can be bought on 5 years time, real estate security, interest 6 per cent. Sam Swoyer, Winchester, Jefferson Co., Kans.

FOR SALE—Twenty head of registered Shorthorns for sale at a bargain. Cows and heifers, some with calves at foot, others bred. All good colors, good ages and in good condition. Mostly Scotch-topped. One a pure Cruickshank cow, coming 4 years old in October, solid red and a good individual. Has a fine red bull calf at side, 4 weeks old; sired by the Cruickshank bull Victor Ludding 149488. Will sell part or all. Geo. B. Ross, Alden, Rice Co., Kans. Farm adjoining town on A. T. & S. F. R. R.

FOR SALE—2 double standard Polled Durham bulls and 3 Shorthorn bulls. A. L. West, Garnett, Kans.

FOR SALE—Guernsey bulls from best registered stock. J. W. Perkins, 423 Altman Building, Kansas City, Mo.

FIVE HEREFORD BULLS FOR SALE—Never used in a herd, they are in fine fix, at a bargain for cow men. O. L. Thistler, Chapman, Kans.

FOR SALE—Six good Shorthorn bulls, four of them straight Cruickshanks; prices reasonable; now is your chance to get a good individual. H. W. McAfee, Topeka, Kans.

SWINE.

FOR SALE—Pure-bred Berkshire sows due to farrow not later than September 10. O. P. Upegraff, North Topeka, Kans.

PEDIGREED POLAND-CHINAS—\$5 each; choice Shorthorns cheap. Send stamp for booklet. M. C. Hemenway, Hope, Kans.

SHEEP.

REGISTERED SHROPSHIRE—A choice lot of ewes, lambs, and rams for sale. Olin Templin, Lawrence, Kans.

I have several thousand 1 and 2-year-old weathers for sale at right figures. H. L. Hall, East Las Vegas, New Mexico.

FARMS AND RANCHES.

FREE 200 printed farm and ranch descriptions in 5 counties, 55 m. from K. C. Prices, maps, statistical book. Write G. Winders, Ottawa, Kans.

FOR SALE—Good alfalfa, corn, and wheat land in the banner stock county of Kansas. Write the Verdigris Valley Land Company, Quincy, Greenwood Co., Kans.

FOR SALE—FOR SALE—A choice 320 acre farm located in Chase County Kansas. 140 acres under plow, 125 acres now in crop, 20 acres native meadow, 160 acres in pasture, fair buildings, good orchard, good pure water. Will sell with farm all the crop. 30 head of cattle, 13 head of them are registered Shorthorns, 5 horses, harness, wagons, farming implements. Send for full printed description. John G. Howard, Homestead, Chase Co., Kans.

FARM FOR SALE OR EXCHANGE—I have a large farm in eastern Kansas. I would like to exchange for a smaller one, or land that would do for a sheep ranch. For further particulars inquire of John Morrison, Drexell, Mo.

PATENTS.

J. A. ROSEN, Patent Attorney, 418 Kansas Avenue, Topeka, Kansas

MISCELLANEOUS.

WANTED—Single man, not over 35, on stock and grain farm; must be willing and able to do any kind of work that comes upon a farm. Permanent place to right man. Give reference and state wages wanted. W. B. Van Horn, Lone Star, Kans.

\$5.00 OR MORE—Invested will average seven per cent per month profits paid monthly. Investment guaranteed. Write for particulars. Address box 212, Columbus, Nebraska.

FARMERS!—Sell your own farm. Deal direct with the purchaser. I can put you in direct communication with the buyer. It's a sure farm seller. For further information, write to Horace Grant, Mass. Bldg. Kansas City, Mo.

WANTED—To exchange one year's scholarship in a high-grade ladies' college near St. Louis for a team of good driving horses, 16 to 17 hands high, fairly well matched. Address Kansas Farmer.

\$5 TO \$12 WEEKLY; for copying letters for us in your own home, outfit and particulars free. Address Ladies' Home Magazine, Philadelphia, Pa.

SCOTCH COLLIE PUPS for sale; fine ones, no better anywhere, either sex. M. Finley & Son, Lyons, Kans.

FOR SALE CHEAP—Pedigreed Scotch Collie pups. W. H. Richards, V. S., Emporia, Kans.

WOOL WANTED—Will pay highest market price for wool. Sacks for sale. Topeka Woolen Mill Co., Oakland, Kans.

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STRAWBERRY PLANTS FOR FALL PLANTING—Now ready and for sale. Send for list and prices to Wm Brown & Sons, Lawrence, Kans.

FOR SALE—Red Amber seed wheat, pure and clean. Write for sample and prices. Humboldt Grain Exchange, Humboldt, Kans.

The Stray List.

Week Ending August 7. Woodson County—J. P. Kelley, Clerk.

HORSE—Taken up by T. P. Alvis, in Belmond tp., July 8, 1902, one horse branded with letter C or G and T on right shoulder, about 15 years old. Also one brown horse with little white on right hind foot, about 12 years old, both work horses.

Bourbon County—L. Barton, Clerk.

PONY—Taken up by Nathaniel Williams, July 30, 1902, one stray mare (pony) sorrel color, halter marks, cut on left hind leg, and branded on left front shoulder.

Sedgwick County—J. M. Chain, Clerk.

MARE—Taken up by Wm Patterson on May 11, 1902, 2 miles south and 1/4 mile west of Greenwich, one bay mare 1 1/2 hands high, 8 years old, white right hind foot. Valued at \$25.

Week Ending August 14. Cherokee County—S. W. Swinney, Clerk.

MARE—Taken up by Frank McGill, in Neosho tp., Cherokee County, on July 15, 1902, one brown mare 9 years old, foretop cropped, spavin on left hind leg, weight 800 pounds; valued at \$35.

Barton County—F. M. Lutchg, Clerk.

MULES—Taken up by Martin Musel, Lakin tp., two female mules, coming 3 years old, dark brown; two male mules, coming 3 years, old dark brown. MARE—Taken up by same, one dark brown mare, weight 1200 pounds, white spot on forehead.

Week Ending August 21. Comanche County—F. M. McIntyre, Clerk.

STEER—Taken up by J. O. Williams, in Irwin tp., June 25, 1902, one red 2-year-old steer with a few white spots; valued at \$25.

LIVE STOCK AUCTIONEERS.

CAREY M. JONES, Live Stock Auctioneer, Davenport, Iowa. Have an extended acquaintance among stock breeders. Terms reasonable. Write before claiming date. Office, Hotel Downs.

HARRY W. GRAHAM, Live & Stock Auctioneer, Chillicothe, Mo. Fine Stock Sales a Specialty. Up to date on breeding and values. SALES MADE EVERYWHERE.

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Advertisement for R. L. Harriman, Live Stock Auctioneer, Bunceton, Mo. Includes a small illustration of a man in a top hat.

Advertisement for LAFE BURGER, WELLINGTON, KANSAS, LIVE STOCK AUCTIONEER. Fine Stock Sales a Specialty. Am booked for the best coming sales. I want your next sale. Write or telegraph your dates.

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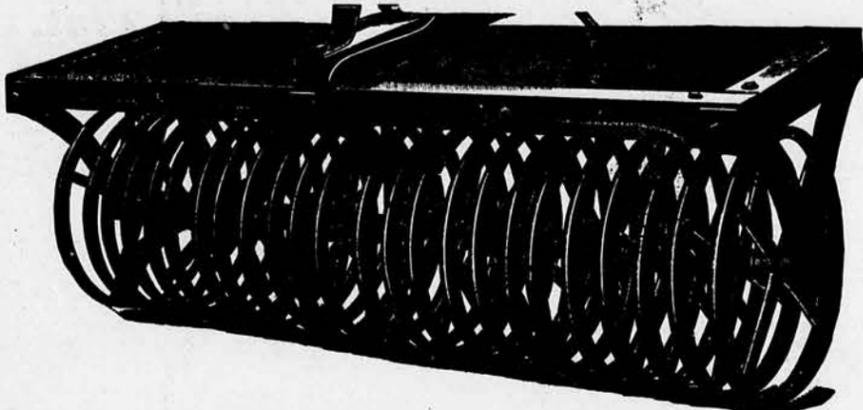
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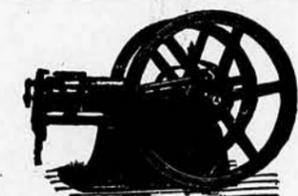
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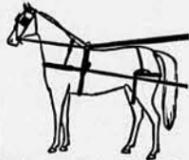
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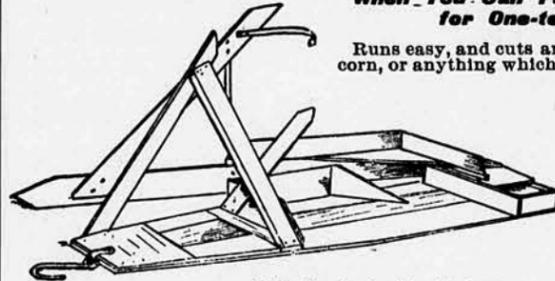
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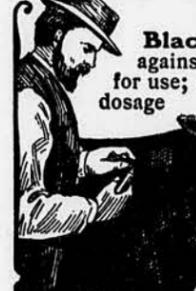
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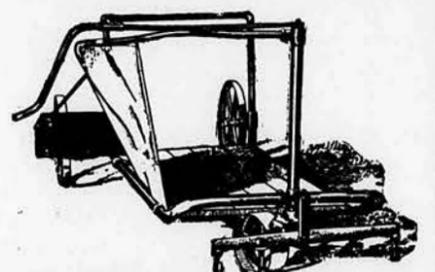
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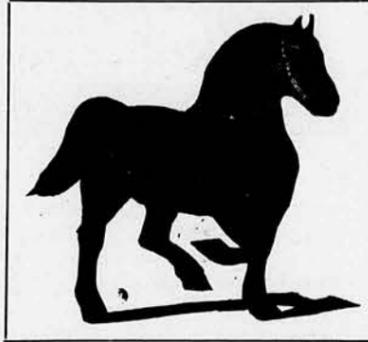
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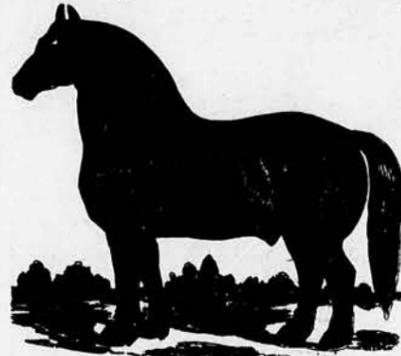
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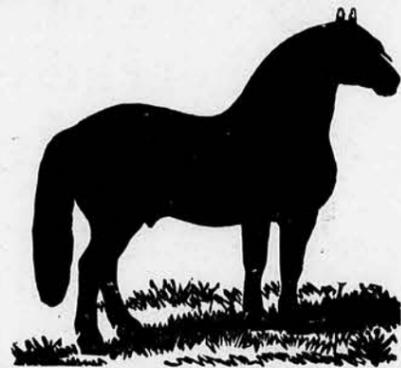


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Original Stocks & Sons
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Three of them, 3 years old, balance 10 to 20 months, in good, serviceable condition, by Cruick-
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...OF...

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**Lincoln (Nebraska) Fair Grounds
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During the Nebraska State Fair, when 75 head of strictly first class cattle
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All farmers and breeders are invited to attend the sale and inspect the
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