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KANSAS FARMER.

Established in 1863.

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116 West Sixth Ave., Topeka, Kans.

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J. G. Cooper, breeder of Poland-Chinas, of Altoona, Wilson County, in a recent letter says: "We have had a fine rain here and most of our wheat is in the shock and is fine. Corn is doing splendidly."

The first Kansas firm to advertise oil direct to the consumer is K. C. Dalley & Co., Benedict, Kans., whose

"Premium oil" should surely find a place on account of the low price at which it is sold—in barrel lots at Benedict, Wilson County. To Dalley & Co.'s price at Benedict add for transportation 28 cents a barrel for 50 miles, 32 cents a barrel for 100 miles, 38 cents a barrel for 150 miles, 40 cents a barrel for 200 miles, or 50 cents a barrel for 300 miles anywhere in Kansas. Let Kansans patronize Kansans when they can, especially when the advantages are so manifest as those advertised by K. C. Dalley & Co.

What a condition of soil is presented for plowing for alfalfa! Very soon the small grains will be out of the way. If the reaper or the header can be followed within a few days by the disk, theft of moisture can be greatly retarded. Plowing may then be done with ease to the teams. The plowed land, if well harrowed immediately after plowing and again after each rain, will retain most of its moisture and most of that it shall receive, for the benefit of the alfalfa. If Kansas should, this season, double her area of alfalfa, her assurance of increased prosperity would be unquestionable. What other crop yields so great value, or is so certain?

Kansas was getting anxious and was beginning to use the word drouth and to complain of the winds, when the rains descended without floods and refreshed all vegetation. The "corn is saved" for this time. Cultivation with a view to preventing evaporation would enable the corn to appropriate much of this moisture which if the cultivation be omitted will go to the winds. Not every farmer will be able to give to his corn the late cultivation recommended by intensive farmers. Harvesting wheat, oats, and hay claims attention. If extra help and extra teams could be procured for this busy season, the farmer of many broad acres might find it profitable to incur the expense and give an extra shallow cultivation to his corn. About all that a good many can at present do in this regard is to think about it. Of course the town farmers can tell of a lot that it would be profitable to do if it were possible of accomplishment.

RUBBER FROM KANSAS OIL.

It is now claimed that Kansas oil contains a substance which is an excellent substitute for rubber. Common rubber is from the sap of a tree. The great increase in the use of rubber has created a demand which has greatly raised the price. Some apprehension has been felt least the supply shall fail. If, however, the great Kansas oil-field shall supply an acceptable substitute, people may go on with the manufacture of automobiles and other rubber-tired vehicles, may wear rubber boots, rubber supports for their false teeth, etc., etc.

Just how much rubber may be obtained from a given quantity of crude oil has not been stated. It is certain, however, that those who are laboring at the problem of utilizing oil for fuel will be willing to spare the rubbery substance which does not burn. If as

valuable as rubber, a very small portion of it will compensate for separating it from the oil. The heavy ingredients on the one hand and the gasoline on the other may well be spared from the fuel oil.

PEACE NEGOTIATIONS.

The end of the great war in the far East seems almost in sight. Both Japan and Russia have replied favorably to President Roosevelt's suggestion for a meeting of plenipotentiaries to discuss terms of peace. Some difficulty seemed imminent in selecting the place of meeting. Roosevelt suggested The Hague. This was acceptable to Russia, but Japan objected. No place outside of the United States could be agreed upon. Finally, it was decided to hold the conference at Washington. The meeting will, it is thought, begin some time in August. After other preliminaries shall have been completed an armistice will be arranged. The suggestion is that this be done by the commanders-in-chief of the two great armies, viz., Marshall Oyama on behalf of Japan and General Linevitch on behalf of Russia.

At present the preliminary events of a great battle appear to be transpiring. General Linevitch, who succeeded to the command soon after the last great land battle, is reported to be confident that he can change the record of the unbroken line of defeats for Russia. Oyama seems ready to give battle. The world shudders, but expects the old Jap commander and his braves—fanatical in their patriotism, glad to live, but willing to die—to administer a defeat more crushing than any of its predecessors, except the defeat at sea with the destruction of the Russian navy.

It is hard for observers to understand why Russia courts this further humiliation.

AN ABUSE OF TRUST FUNDS.

The inability of most mortals, unrestrained, to use great power without abusing it has received fresh illustration in the exposure of some of the proceedings of an insurance magnate. At the expense of the company, with money at some time drawn from persons who had paid it in consideration of provision for the comfort of dependents, this magnate gave an entertainment which for lavish expenditure has seldom been equalled. Thousands of dollars that somebody had earned by hard work and saved by self-denial were poured into the lap of luxury and charged to the expense account of the insurance company.

The commotion that followed the exposure of this wanton waste shook Wall Street and led to the exposure of a menace to the business of the country. The insurance company has an accumulation of hundreds of millions of money. This money is made to earn more by loaning it. So far all is well. But these millions of loanable capital are an engine of financial power in the hands of manipulators. Persons with great schemes to finance found it convenient to become directors of the insurance company. With this mountain of money they could make doubtful schemes go, at least until their ap-

parent solidity had attracted the attention and the dollars of the investing public; they could make good propositions fail by a feigned wariness, and could then buy up the wreck of the good proposition at a bargain.

Doubtless there will have to be additional safeguards around the care and use of these great accumulations of trust funds.

THE WEB-WORMS.

There are numerous complaints of the web-worm. This pest is especially fond of corn but is not averse to sweet-potato vines and other good things. Its liking for lamb's-quarters is nothing against the worm but may be the cause of its perpetuation even after some method shall have been ascertained for protecting crops. The web-worms arrived in great numbers last week at several points in Kansas. In every case they had their appetites with them. They ate large and numerous holes in leaves and covered the plants with their webs. It is said that wet weather is detrimental to their health. Paris green strong enough to destroy potato-bugs has little, if any, effect on the worms.

The KANSAS FARMER has sent samples of web-worms and their work to several entomologists, but up to the time of going to press has received no replies to its requests for remedies.

COMMENCEMENT AT THE AGRICULTURAL COLLEGE.

Success is writ large over the Kansas State Agricultural College. The visitor from a distance is impressed with the development and growth of this institution as he never could have been in its earlier history. The commencement exercises of the week ending June 15 were the culmination of the most successful year's work ever known to this successful institution. This, the forty-second annual commencement, showed to the visitor the completion of a number of new buildings, the inauguration of new courses of study, the raising of requirements for admission, the institution of a summer school in domestic science and the completed registration of nearly 1,500 students who represent 98 counties of Kansas and 5 other States. Indeed there are but seven counties in Kansas that did not have representatives in attendance at the Agricultural College during the year just completed, and these counties are located in the thinly settled portions of Western Kansas.

The graduating class of 1905 numbered 103, and was the largest class in the history of the college. These students go forth with a training that is practical in every sense and that fits them for the business of living. It is a noteworthy fact that of the hundreds of graduates which have gone forth from this institution since its establishment in 1863, nearly all have been conspicuously successful in their chosen fields of work and none have been failures. Secretary Wilson, during a recent visit to the college, stated that there were more graduates and former students of the Kansas Agricultural College now in the Govern-

(Continued on page 654)

Agriculture

Intensive Agriculture.

ARNOLD MARTIN, DUBOISE, NEB., BEFORE
THE KANSAS CORN-BREEDERS' ASSO-
CIATION.

Having attended a good many farmers' institutes during the past three years, I have heard many talks on the breeding and selecting of seed-corn, but very little about cultivating corn after the farmer has laid the corn by and it is too tall to go through it with the two-horse cultivator.

We have often seen our corn-fields about the 4th of July in a fine condition, and had hopes of a good crop. We often have good rains afterwards and see the farmers come to town with happy-looking faces; but if it does not rain within two or three weeks, we see the same farmers looking up to the passing clouds for rain. I have lived in this country for sixteen years, and was one of the number of sky-gazers part of that time when I rented from 80 to 120 acres of land and had from 60 to 75 acres of corn. I do not wish to mention my ups and downs and how much I made; as it would not encourage any one to do likewise. The same methods and practices are found to-day, and crops without profits are often the result. We find mines are closing, and the wheels of factories stopping when they cease to yield a profit; but the farmer keeps on.

At present I own and live on a farm of twenty acres. The question of how much land a man in Kansas or Nebraska ought to have to make a little more than a living for his family is unsettled and unsolved. A man may start on twenty acres; forty acres may do; eighty acres are enough; one hundred and sixty acres, an abundance; three hundred and twenty acres, a misfortune; and six hundred and forty acres, a calamity.

I read a while ago that our cultivated land produces, on the average, only one-fifth of what it is capable of producing. I have proven for the last seven years not by telling or writing, but by nature's product, that a twenty-acre farm, perfectly and scientifically farmed, is as profitable as eighty or one hundred acres poorly farmed.

In the spring of 1903 I set apart five acres of good land for corn. In the early spring I disked and harrowed the land twice, and in the latter part of April I took the lister and drill and planted the corn (Reid's Yellow Dent), 16 inches apart. I had to do some replanting by hand. After every rain as soon as it was dry enough, I went over the field with a cultivator or weeder. From May 18 to June 10 we had a long, rainy, cold spell unfavorable for corn to grow. The corn looked yellow instead of having a nice, green color and the soil could not be worked for twenty-three days. As soon as it dried off (the corn was about ten inches high), I gave it a deep cultivation with a four-shovel cultivator, thus loosening up the soil for the roots to grow and letting in the air. I then followed twice with the weeder until the corn was two feet high. After this I used the Planet Junior small shovel-plow and kept up shallow cultivation until August 8; I used a single horse and cut off the singletree to 14 inches (a long singletree will injure the corn-plant and cause smut). We had a long dry spell from July 5 to August 6. I went through the corn every week or ten days and it kept on growing. Fields of corn near-by which were not cultivated began to suffer; the lower leaves turned yellow; a crust formed on the surface; the ground cracked open; moisture was lost every day which could have been turned into corn if cultivation had been kept up, and the corn turned into live stock and then into dollars, which help pay for our necessities, for free and better homes, more satisfaction and more encouragement for future work.

From September 15 to 18 I cut the corn and put it into shocks; and after it was cured I husked it and put it into the barn. The fodder was fed to the milch cows, as it is one of the best

feeds we get on the farm if properly taken care of. In the fall I plowed up the ground and top-dressed with manure. The yield was ninety-two bushels of sound, solid corn to the acre.

One square rod of corn with a good stand along the creek made 73 pounds of corn in the ear. A second square rod (not as good a stand), made 49 pounds of corn to the square rod. Four square rods about the average stand of the field made 172 pounds of corn in the ear or 43 pounds to the square rod, or 92 bushels per acre.

Six rows of the same corn were set apart for an experiment; cultivation was stopped July 6. The first half of the six rows was irrigated but never cultivated. As soon as the surface dried off, water was turned on again until rain came, August 6. The result was at husking-time the corn that was cultivated all summer up to August 8, made 92 bushels to the acre, or 43 pounds of corn to the square rod. The irrigated plot, which was never cultivated after July 6, made 63 bushels to the acre or 34 pounds of corn to the square rod. The other half of the six rows was never cultivated nor watered after July 6 and made 26 bushels to the acre or 17 pounds of corn to the square rod, an average crop which has never paid in the past nor at present, nor will it in the future.

We often complain about the lack of moisture; it is the lack of cultivation. Corn not only needs moisture but needs air as well. It will get air if the surface is kept loose as the loose surface will hold the moisture and not let it evaporate. I found during the hot days that the corn grew the best when the surface was kept loose and the air could enter the roots of the plants, together with the moisture and the elements from which the corn plant is to be made. That is the kind of evaporation we want to take place. It will help to pay off our debts. There are many without homes and many have lost their homes by letting the moisture evaporate beneath the growing plants and through the cracks on top of the surface by not keeping it broken up.

Our soil that has been in corn for the last fifteen to twenty years without a rotation of some leguminous plant is lacking in humus, and the less humus we have the less moisture-holding capacity we have. This can be supplied to some extent by frequent surface cultivation, but that will not hold out long; we must bring back the humus. We had plenty of rain the last two years, but our crops were not any better. Our towns are getting filled up with retired farmers, whom the increasing value of the land has made wealthy. If, when he left the farm he had kept up the fertility and taught his boys how, all would be well. On the other hand, if he did not, how will it be possible for the farm to keep two families where it kept one before? The past way of the American farmer was destructive. Some one has to make a sacrifice—it may be his own children.

Extensive farming in the past, and an over-balanced ration of work and ignorance of the true principles of scientific farming has caused many a man to break down, become hopeless and homeless and go from the farm to the city. Failures of crops made the farmer cut down the wages of the hired help; they went to the city and it is hard to bring them back. The only way to bring them back is to make farming more successful than we have in the past. They have to be shown that farming brings as good returns as working for a salary, or to be a tool for life for somebody else. The best thing a farmer can do if he has a hired hand is to take him along to the farmers' institute. That is the cheapest place to get him educated. He is the one you expect to do your work next summer. If he knows how, why, and when, he will be able to do it better.

I believe the practice of keeping the young rising generation in ignorance of the true principles of agriculture has been carried on long enough. The work carried on at our agricultural experiment stations is doing great good but it does not reach the masses of

people till we commence in earnest in our public schools. But where are the qualified teachers? The time will come when we will feel the need of an agricultural school connected with a piece of land in every county. We may start in our district school and teach them from books. That is all we can do for the first step. We should tell our children about the soil, the plants, the trees, the birds and the insects and what they live and feed on, but after a little we want to give them some practical demonstration and this could be given in the county agricultural schools. As a director of a school district I feel it my duty to advocate agricultural education.

Had I not received a better agricultural education twenty years ago than the children of to-day are receiving, I could not have appeared before you with this subject to-day. I am no more a citizen of Switzerland, but I still have a right to speak a good word for the Swiss schools, in which I have received the A B C of an agricultural education. I would like to see the time come when our American boys and girls shall be fitted with a good, sound agricultural education and shall be able to take this country as it is, and move on, and bring it up to its highest productiveness. We often tell our children what a great land and State we live in. We might better tell and show them the possibilities and how great it could be made.

I find the American farmer is the most enterprising man in the world, that is, he is the most eager to learn and to undertake whatever may better his lot. He is ever ready to change old ways and take up new ones. Tell him what another man has done in agriculture and he will say, "I can do it also." Show him of the success of a farmer on the other side of the globe and he will answer, "I can make the same success on this side, where conditions are equal or far better." It is true in every branch of agriculture, and in other industries, that he has done far better than the old-world competitors. In the making of agricultural implements, improvement of seed and fruit, breeding of horses and all kinds of live stock, building comfortable houses and barns and in a hundred other things he has not only done as well, but far better.

One thing the farmer of the Middle West in the corn-belt has not learned well and that is that a small farm perfectly tilled is more profitable than a large one poorly farmed. The most prosperous agriculture in the world is found in localities where the farms are the smallest. The French farmer with his six-acre farm is far more prosperous than the farmer of the great Russian estates. The agricultural people of the Channel Islands with their eight-acre farms are far more prosperous than the agricultural people of England or Ireland, only about one hundred miles away and of the same climate. We may take our country to illustrate this point. The farmer of New York who farms from thirty to forty acres of land is far more prosperous than the farmer in the same State who farms two hundred acres poorly. In 1893 while I was on the Western Coast, I found people in California and Oregon who farmed ten- to twenty-acre lots were far more prosperous than those on the great ranches which have since been broken up and sold out to colonies. I observed the same in Colorado last summer. I felt much safer at night on a small, irrigated farm than in Victor or Cripple Creek.

We need not look far back in history nor far around us in the world to prove that the deepest contentment and highest prosperity are ever found where the people are proprietors of small farms, each living upon and tilling his own soil. The small farmer has given character to agriculture and at all times he cultivates a smaller area, produces greater diversities of crops and practices a more intensive system of cultivation. As the farm is small, it is a home which he wishes to improve by growing fruit-trees, small fruits of all kinds, vegetables and so on. We find in history that it is upon

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small farms that many a young man and woman have found a chance to develop for higher and nobler duties and services of life. More and more people, who only have a small capital, ought to take up certain branches of farming. They might go into fruit-raising and bee-keeping, which work well together, or market-gardening, poultry-raising or seed-corn breeding. We can not all have and own 160 acres of land. There was a time when it could be had for the asking but nearly all of our fertile land has been taken up. Extensive farming (soil butchering) becomes more and more impossible. Intensive farming becomes a necessity, but no man can intelligently and profitably carry it on without an all-round agricultural education. The true principles of soil-culture can be worked out much better on a small farm than on a large one. It is not the many acres, but the proper care that they receive at the right time that pays. Average crops have never paid. The average land under cultivation produces only one-fifth of what it is capable of producing. Should this be only half true, what a large amount of wealth is lost to this country, partly due to a lack of knowledge concerning soil-culture. If these reports are true, can we say that we are a progressive State or Nation? Suppose we are able by teaching agriculture in our public schools, in the farmers' institutes, in our agricultural colleges, and by demonstrating to the people by practical work that farming may be made just three times as profitable as it now is, would we have as many without homes, would we have as many renters—who have to move every year from one place to another trying to better their condition? or would our cities have a chance to ruin the strong, pure, healthy, bright farmers' sons and leaving them broken-hearted, discouraged tramps, ruined forever to the world and themselves? May the day hasten when our thinking men and women shall study these problems in their true light, not trying to cure the disease but to remove the cause. The tide is turning; public sentiment is changing; now is our time to promote agricultural education. While we are doing this work the ambition of the young will be rising. It means less prison-cells, and that beautiful but sad song, "Where Is My Wandering Boy To-Night?" will not touch so many mothers' hearts.

With the small sum of \$275, which I accumulated in two years while renting 120 acres of land, I bought 20 acres of rough land at \$12.50 per acre in Pawnee County, Neb. Land near by sold from \$35 to \$60 per acre. My land was a little over half in small timber, brush and hilly ground; the remainder was in pasture. Two-thirds of the farm has an eastern slope and the rest slopes towards the north. There were no buildings of any kind, no well, no fruit-trees. I paid \$100 down; the remainder to be paid in five years or before with interest at 7 per cent. One hundred and seventy-five dollars was left for buildings and other improvements. People made the remark, "What is this man going to do on such a piece of land?" When I began to clear off the timber and brush during the winter days when nothing else could be done, they changed my name from Martin to Hazelbrush. In my boyhood I learned farming amid the narrow confines of the Swiss Alps along the River Rhine. I was raised on a six-acre farm and I was always a natural, sincere believer in intensive farming. I could see in

the 20 acres a chance for a man with his family who had not a great amount of money, to lead an independent, healthful and progressive life. I could see a snap and a fortune. I did not care how bad the people felt, about me. The more they talked about it, the more I made an effort to make it what it is to-day. Public sentiment has changed. Two years afterwards people made the remark, "That man makes as much as we do on our large farms."

Every display of farm-products in our own county fair has proved the possibility of what can be done on a 20-acre farm. From \$18 to \$24 in premiums was given to those products alone in one year. A year ago I went to the State Corn Show with forty ears of Reid's Yellow Dent corn; score 87½; \$32 was the premium. The same exhibit was awarded a gold medal at the World's Fair at St. Louis. Twenty ears of Reid's Yellow Dent corn from the 20-acre farm took a close second at the State Fair. In the Nebraska Corn Show, held this winter, the corn-exhibit from the 20-acre farm scored 90. The same is true of the fruit. The combined fruit-exhibit from the 20-acre farm was awarded the silver medal. A display of seven varieties of pears from an orchard planted three years ago took first prize at the State Fair at Lincoln last fall.

To make a small farm profitable, one has to have a true knowledge of the soil and plant that which is best adapted to the soil, brings him the most dollars and robs the ground the least of its fertility. He also must study the home market and everything that is shipped in and sells at a high price, and if he can grow it on his farm it is well to raise it; but always start slowly with something new.

I have about eight acres of north slope, on which I have a pear orchard of 750 trees from six to three years old, some having borne the third crop. The first year I planted 24 trees. A good many men told me they would blight and I would never see any fruit. One tree alone last year brought me over three bushels which sold at \$1.50 per bushel. When people saw those trees loaded with fruit they remarked, "Why did you not plant more the first year?" Sixty-two dollars and fifty cent's worth of choice fruit was sold to the Nebraska exhibit at St. Louis; the rest of the fruit sold well at home. I had pears from the last day of July to the middle of November. Trees planted in 1901-1902 have borne from 9 to 20 pears.

How did I make a living and improve on the place the last three years? It was done by raising potatoes and small fruits. Those two were my prime money-makers.

In 1897 I harvested from three acres of timber land 678 bushels of potatoes which sold at 50 cents per bushel, and the early ones at \$1 per bushel. I also planted corn between the potato rows and produced a crop of corn on the same piece of land. In 1898, I produced from five acres 930 bushels of potatoes which sold at 45 cents a bushel. Part of this money was spent in building an addition to the house and in planting more fruit-trees. In 1899, I produced 1,085 bushels of potatoes from seven acres of land. These sold at 35 cents per bushel. I also raised a crop of corn between the rows of potatoes. That year the mortgage was paid off, and from then on it was like traveling on level road. In 1900, I produced 1,260 bushels of potatoes from ten acres which sold at 40 cents per bushel. The high water went over part of my potato-field and on May 17 I planted corn which yielded 82 bushels per acre.

During the last three years I have had no forage crops so I sowed some clover and alfalfa. I built a shed with a board roof for a stable. I had a few trees bent together and covered with slough-grass, but I was not satisfied to have my animals housed that way.

In the spring of 1901 I planted 250 pear-trees and five acres of potatoes. With only 3½ inches rainfall (during the last days of April) I was able, by keeping up cultivation during the long dry period, to harvest 142 bushels of potatoes from each acre. These I sold direct from the field at \$1 per

bushel and up. Every load would bring from \$46 to \$52. It proved what can be done on a small farm in a dry year by keeping the surface loose, and also that we have to a certain extent control over the elements instead of being slaves. We often hear a man say of failures of crops, "I have done all I could." He may so far as he knows. We often call it bad luck or good luck and believe when things work in a certain way no one could help it. I believe life is what we make it, and crops also. Any tiller of the soil who does not work so well that he learns how to do better, does not receive a full reward. In agriculture we get our reward for the work that we do, and the reward is the pleasure and the happiness we get out of it, and the ability that it gives us to do more, and the dollars and cents that come without worry about them.

The potato-crop and the crop of small fruit in 1901 brought me \$687 from 5½ acres. In the winter of 1901-1902 I built a good barn 18 by 24 with stone basement 9 feet high and 10 feet above basement for hay and grain. I put in the best material I could get. I paid off the fruit-tree bill of \$145 and bought another 450 pear-trees to be planted in the spring of 1902. In 1902, I harvested 1,600 bushels of potatoes from five acres which sold at 25 cents per bushel in the fall. I received \$1.60 per bushel for the early ones. The profit of the 1902 crop went to pay for fruit-trees, a well and windmill, and an irrigation plant to irrigate in dry seasons, but the latter has not proved as profitable as I thought it would.

Cultivation is cheaper than irrigation. Try to store the moisture in all seasons by keeping the surface loose. Plow the potatoes as long as the vines are green; plow the corn as long as it grows and is making ears. It not only helps the growing crop, but it is also a help for the next year's crop. Fall-plowing also helps conserve the moisture and the frost will pulverize the soil much cheaper and better than you or I can do it.

In 1903, 680 bushels of potatoes were harvested and sold at 75 cents to \$1 per bushel. One-half acre of land produced 142 crates of strawberries, 14 crates of raspberries and 42 crates of blackberries. Potatoes and small fruit alone from about six acres brought \$833. Where did that money go? It went into a new cook-stove and sewing-machine. A new road-wagon was wanted to haul the products to market and another new farm-wagon and other machinery were wanted. The rest of the money was put in the bank and with the help of the 1904 crop I built a new house.

I had a call from the University at Lincoln, Neb., to become connected with that college and start a model farm of 20 acres along the same plan as the one in Pawnee County, and prove to the students what can be done on a small piece of ground. I had a call two years ago but refused, but for the interest of the boys I could not refuse the second time. I took hold of the work in the middle of March. I rented part of my place but kept the orchards and small fruit. By May 18, I returned to the 20-acre farm and took some of the ground back in addition to the orchard and practiced a more intensive system of farming than I ever did before and with good results. My youngest brother looked after the work while I was in Lincoln. I put in my crop and went to building a foundation 12 by 22, doing most of the work myself. With the help of last year's crop I finished the building besides taking two trips—one to Wyoming to visit my parents and one to Colorado to study farming in the irrigated districts. I came to the conclusion, during my travels, and in trying to better my condition by finding a better place, and in looking over my past six years, having been offered \$100 per acre for my farm last fall, to "Let well enough alone." I believe and know by experience that farming is the grandest form of life and the highest and noblest occupation. This is yet the poor man's country if he knows how to make use of its resources which are so abundant. We must commence to farm the old farm as if it were to be in the family for

generations; not to make it ready for sale. Plant trees, build good houses and barns, save the straw, dam up the draws and seed down the hillsides; keep stock, do not waste the richness of your farm in a single generation. Educate the boys. We ought to quit that wandering habit, going from place to place trying to better our condition. The American people must yet learn a lesson from European-born citizens whose families have had the experience of countless generations on old farms. The old cultivated farm passing from father to son brings better farming, better farmhouses, a better class of citizens and it will bring better roads, better schools. Public improvement will be so attractive that none will want to rent or sell or move to town.

Blessed is agriculture if a man has not too much of it.

Hogs Destroy Alfalfa Worms.

In writing to Secretary Coburn, one of Kansas' lady farmers, Miss Mary Best, of Medicine Lodge, gives valuable experience in the destruction of the troublesome alfalfa worms. She says:

"Last year many people in our district had their alfalfa crop much hurt by worms. One neighbor, M. S. Williams, sent some of the worms to Manhattan and learned they were from the moth that is present in such numbers at times. I was the only one to escape the invasion, or at least, I was not damaged and did not notice any worms and no one could account for it, but think now I know the reason. Three of my neighbors have this spring followed my example by hog-fencing their farms and turning hogs into the alfalfa, and the hogs are just clearing the fields of the worms; especially they follow the windrows where the hay was laid, and you can see the hogs pull up every worm. I have always a good number of hogs on my fields all the year and it must be that they keep down the pests.

"I thought this might be of interest. M. S. Williams, my next neighbor, is a careful observer and is quite satisfied that hogs will clear up the worms.

Can He Thrash Alfalfa With a Flail?

EDITOR KANSAS FARMER:—I will be glad to have some one who knows tell me about thrashing alfalfa with a flail and cleaning the seed with a fanning-mill. Does it separate easily from the husk or does it, like red clover, require a huller to knock out the seed and to clear it from the husk? I have a ranch in Northwest Kansas which had a couple of acres of fine alfalfa when I purchased it two years ago. It looks very promising and I thought I would save the last crop this season for seed. As the crop will be so small and no other alfalfa thrashing in the locality to make it pay to bring a thrasher to handle it, I thought I would try the plan of thrashing it out during the crisp, cold weather in the winter with a flail and cleaning with a fanning-mill. In this way if it can be handled as above, small patches where there are no facilities for machine thrashing can be made to furnish seed for extending the acreage very cheaply.

A SUBSCRIBER.

Johnson County, Nebraska.

Cow-Peas.

EDITOR KANSAS FARMER:—Cow-peas are an excellent crop to raise after oats or wheat is harvested. Disk or plow the ground as soon as wheat or oats are harvested, plant one-half bushel of cow-peas to the acre with common corn-planter, by double-listing; this makes rows about twenty inches apart. Last year our cow-peas thus listed after oats (about the first of August), made one ton of cow-pea hay per acre, which is as valuable to feed to all kinds of stock as clover or alfalfa. Cow-peas also benefit the soil, making it possible to produce at least ten bushels more corn or oats per acre the following year. This year I shall plant fifteen bushels on oat-stubble as soon as I can prepare the ground, about July 10, if possible. By all means plant cow-peas.

Labette County. C. E. HILDBETH.

RUB ON
Painkiller
and the Rheumatism's gone.

BOOK FREE FARM TELEPHONES. How to put them up—what they cost—why they save you money; all information and valuable book free. Write J. Andrus & Sons, 823 W. Water St., Milwaukee, Wis.

STARK FRUIT BOOK
shows in NATURAL COLORS and accurately describes 216 varieties of fruit. Send for our terms of distribution. We want more salesmen.—Stark Bros., Louisiana, Mo.

FIELD POST Made where used. No freight charges. Simple of construction. Excels in beauty, convenience and strength. Costs little more than oak or locust, will last for all time. Renders universal satisfaction. Reliable men wanted who can work territory. Descriptive matter free. Address with stamp. **ZEIGLER BROS., Hutchinson, Kans.**

Well Drilling Machinery
Portable and drill any depth by steam or horse power. 48 different styles. We challenge competition. Send for Free Illustrated Catalog. **KELLY & TANEYHILL CO., 33 Chestnut St., Waterloo, Ia.**

THE LARGEST AND BEST LINE OF WELL DRILLING MACHINERY in America. We have been making it for over 20 years. Do not buy until you see our new Illustrated Catalogue No. 41. Send for it now. It is FREE. **Austin Manufacturing Co., Chicago**

\$10.00 Sweep Feed Grinder. **\$14.00** Galvanized Steel Wind Mill. We manufacture all sizes and styles. It will pay you to investigate. Write for catalog and price list. **CURRIE WIND MILL CO., Topeka, Kansas.**

HAIL INSURANCE.
Farmers insure your crops in the Kansas State Mutual Hail Insurance Association. **CHAS. A. WILBUR, Agent for Shawnee Co., 111 W. 6th St., TOPEKA, KANS.** Successor to R. A. Richards.

Farmers' Portable Elevators
will elevate both small grain and ear corn. For prices and circulars, address **NORA SPRINGS MFG. COMPANY, NORA SPRINGS, IOWA**

Goodhue Wind Mills
Our hand-some free booklet explains their many advantages, and tells about our new **INDESTRUCTIBLE TOWERS.** It gives much valuable and practical information that should be in the hands of every farmer. Send for it to-day and ask about our **Windmill Insurance Policy.** **APPLETON MFG. CO., 19 FARGO ST., BATAVIA, ILL.**

BUSINESS EDUCATION
—135—**FREE**
SCHOLARSHIPS

Clip this notice and present or send to **DRAUGHON'S PRACTICAL BUSINESS COLLEGE**
Kansas City, Muskogee,
Fort Scott, St. Louis,
Oklahoma City, or Fort Smith,
and receive booklet containing almost 100 misspelled words explaining that we give, ABSOLUTELY FREE, 135 scholarships for PERSONAL instruction or HOME STUDY to those finding most misspelled words in the booklet. Most instructive contest ever conducted. Booklet contains letters from bankers and business men giving reasons why you should attend D. P. B. C. Those who fail to get free scholarship will, as explained in booklet, get 10 cents for each misspelled word found. Let us tell you all about our educational contest and our **GREAT SUMMER DISCOUNT** (Clipped from Kansas Farmer Topeka, Kan.)

Horticulture

Renewing the Strawberry Beds.

PROF. ALBERT DICKENS.

In the matter of renewing strawberry beds the principle to be observed is that of leaving only sufficient number of the plants to ensure growth of new plants for the production of next season's crop.

The easiest way is usually to "set over" the beds. This is accomplished in small patches by use of garden line and hoe. If some care is taken to fill in where the row is narrow the new row may be almost as straight and even as the old ones.

We usually leave the row after cut down to six inches wide, then set the plants so that they stand twelve inches apart. Care should be taken to leave the strongest and most vigorous plants and those not affected by leaf spot.

They must be given thorough cultivation. This is not an easy matter in some soils, especially where the picking season has been a wet one and the ground is packed closely in the tramping of the pickers.

In large beds the plow may well be used and it is frequently good practice to throw the earth out and then back or with some cultivator, work the ground after the cut has been made with the plow.

After this is done the bed is approximately in the same condition as a new one and should receive the same cultivation that the new one would be given.

Fire Blight.

Fire blight is a bacterial disease affecting the pomaceous fruits, especially the pear and apple, for which reason it is sometimes called the "pear and apple blight." This name is easily confused with the "pear leaf blight," a distinctly different disease, so should not be used. The fire blight is caused by myriads of minute organisms, "Micrococcus Amylovorus," living in the bark and the cambium just beneath it. The disease has been known for over a hundred years, but its true cause has been known only since 1878 when it was discovered by Professor Burrill of Illinois. The blight affects the tree in various ways and is hence known as "twig blight," "flower blight" and "branch or trunk blight," according to the part of the tree affected.

The twig blight causes the leaves to turn brown and the smaller twigs to die. The dead leaves remain on the tree during the following winter, giving the tree the appearance of having been scorched. The organisms generally enter the twigs through the growing tips. In the flower blight the flowers are infected through their stigma and nectar glands and, with the undeveloped fruit, remain on the tree through the winter. The trunk blight is more common in the pear than in the apple and causes whole limbs to turn brown. The younger growth is affected first and brown spots appear on the bark. Later it is found to have tiny drops of sap exuding all over the diseased area and the disease spreads to the larger limbs. The exuded sap is alive with the organisms which produce the disease. It is easy to see from this, one means of dissemination. Bees and other insects feed on this sap and carry away the bacteria clinging to their mouth parts. These are forced into a healthy flower and the organisms left there to cause flower blight. It has been proved that fire blight is found more frequently around beehives than in portions of the orchard remote from them, thus giving practical evidence in proof of this theory of dissemination.

Another means of dissemination is supposed to be high winds. One of the most easily avoided modes of infection is that of the pruning instrument. Cutting through diseased and then through healthy tissue without sterilizing the instrument after the first cutting carries the germ into the tissue of the second limb. After cutting through diseased tissue the instrument should be sterilized by passing through a

flame, wiping with a cloth saturated with kerosene, immersed in a 5 per cent solution of carbolic acid or otherwise thoroughly disinfected.

Since the cause of the disease is below the outer coat of bark, spraying is useless as a preventive or remedy. Careful and persistent pruning is the only means found effective in combating this pest. All affected parts should be cut off just before the trees come in bloom. Some authorities strongly recommend painting the cut ends of the limbs where the vascular bundles are exposed as the germs can enter and infect the trees through any wound in the bark. In case of twig and flower blight, which occurs most frequently in the apple, this painting is not practicable but in the pear where it is most frequently the larger limbs that are affected this may be practiced. The diseased tissue should be cut away several inches below all discoloration as the disease spreads down the branches and the organisms may be present in apparently healthy tissue. The second pruning should be done about two weeks after blooming, by which time the affected flowers will have turned brown. The trees should be examined a third time just before the leaves drop in the fall and all affected tissue removed. The diseased parts which have been cut away should be at once carefully collected and burned to prevent their serving as a source of further infection.

The ineffectiveness of pruning complained of by some is largely due to the carelessness with which the work is done and to the fact that it is not done at the proper time. The organisms are thus given a chance to spread and multiply.—K. Elizabeth Sweet, in Kansas Agricultural Review.

The Brown-Tailed Moth.

Through the courtesy of Secretary Coburn, we are able to present the following warning of the probable invasion of a detestable pest.

Mr. F. D. Coburn: Dear Sir—I wish to call your attention to one of the worst pests that we have in the country and one that will reach your State before many years if not taken in hand by the General Government. The female lays the eggs in August and they hatch out and grow to one-quarter inch in length and make a little nest that looks like a dried leaf. Here they will winter and will stand 40° below zero. In the spring, about April 1 or as soon as the leaves start, they are ready for business. They will strip a tree as bad as canker-worms, and then when they are grown they go down and turn into millers. Both male and female are millers and can fly a long distance like the Kansas grasshopper.

It will be only a question of time before you will have the privilege of having the brown-tail itch and a chance to scratch. These brown-tail moths are covered with hairs (that is, the caterpillars), and they are very liable to break off and blow about. They are poisonous and will make great blotches where they touch.

I send a clipping of a paper to show how thick we have them. We got 118 nests from one medium-sized pear-tree, and ten of the nests would furnish caterpillars enough to strip the tree. This clipping shows one week's work of the boys in gathering nests. Our city of 15,000 people will spend about \$2,000 on the shade-trees of the city, beside what the citizens have to do with their own trees.

I have written this to you so that the State of Kansas may know the danger that threatens her orchards. If the moths once get located in Kansas, the value of the orchards will decrease very fast. Nobody will plant apple and pear-trees here at present, and of the moth makes its appearance, those large nurseries of the West would soon be out of business. The only sure way is rid the trees of the nests in winter and burn them, and what a job on a 1,000-acre orchard.

The trouble to get anything done towards exterminating them is that at present they are here in the eastern part of Massachusetts and a small part of New Hampshire and on the coast of Maine; and as long as the people are not troubled they will do

nothing; but if you could see the trees here, you could judge what your State will be like when they get there. I have been West—was west of the Missouri River from 1865 to 1871. I helped build the Union Pacific Railroad. I graded 421 miles of the road and have been the whole length of it, and I saw the potato-bugs out there. They did not arrive here till about 1876, but they came all the same and we now have to fight them. I have seen large grain-fields and large corn-fields, and that is what makes me interested, as I can realize something of what the damage to large orchards will be when the brown-tail moth arrives in Kansas. EBEN SMITH, Newburyport, Mass.

Following are the newspaper clippings mentioned in Mr. Smith's letter:

"Waltham, June 4.—The brown-tail moth caterpillar is causing many residents extreme personal discomfort and to strongly hope for its speedy extinction. Not alone are trees infested, but the pest is climbing upon houses.

"There are not a few cases of poisoning, and one family is so annoyed by the house being literally spotted with the caterpillar that the family will vacate the house at once.

"The members of the family have been poisoned by the fine hairs which the caterpillar scatters. These hairs exude a poisonous substance, which coming in contact with the human flesh causes a great irritation.

"The house to be vacated belongs to parties who failed to respond to the action of the board of health, taken last spring, with a view of having owners look after their trees and remove the brown-tail moth nests before the young caterpillars emerged."

BOYS PROVE INDUSTRIOUS IN GETTING AFTER THE BROWN-TAIL MOTHS.

"Yesterday afternoon was another strenuous time for Tree-Warden Upton, whose residence on Market Street swarmed with the indefatigable collectors of the nests of the brown-tail moth. A hundred or more boys and a few girls were on hand at 5 o'clock after the promised reward, and the candidates for prizes were there with big collections to increase their standing in the contest. In all there were 88,200, which represented in money about \$62. In all sorts of receptacles they came, bags, boxes, carts and sleds, but one boy representing a syndicate, brought in 23,000 in a push-cart.

"This proved too much for Mr. Upton's capacity, for he hasn't had any previous training for expert counting and so arrangements were made to count them afterwards. The boys are doing good work but Mr. Upton does not intend to be imposed upon as some boys have attempted to do by not giving an honest account of the number they have.

"The tree-warden and men are still at work on the shade-trees on High Street."

Amatite
FREE SAMPLE

Ever since the day of Noah, Pitch has been used to resist water. Water is absolutely powerless against it. Thus, an AMATITE roof, which consists of two layers of Pitch between sheets of tough felt, with a mineral surface on top, is absolutely weather-proof. Rain, wind, heat or cold do not effect it. Send for Free Sample and booklet.

BARRETT MANUFACTURING COMPANY
New York Allegheny Cleveland Chicago Kansas City St. Louis Minneapolis Philadelphia New Orleans Cincinnati

IRRIGATION
MEANS
CROP INSURANCE
—350,000 Acres—
of Irrigated Land in the
Lethbridge District
OF SOUTHERN ALBERTA
at \$15.00 per Acre
In 10 Annual Installments

These lands are particularly adapted to growing **WINTER WHEAT** and Alfalfa. Both these crops give big yields and have proven extremely profitable. The Winter Wheat grown in this famous district is of the highest quality and will grade No. 1 Hard the same as Manitoba Wheat. Remember these lands are all within easy access of the railroad and are the cheapest irrigated lands on the market to-day. Write us for detailed information, maps, etc. Address

G. A. MAGRATH,
Land Commissioner

LETHBRIDGE, ALBERTA

OR
OSLER, HAMMOND & NANTON
WINNIPEG, MANITOBA

We also own and offer for sale 650,000 acres of excellent Farming and Ranching lands, in tracts of 160 to 50,000 acres at \$6.00 per acre on same terms as above.

The Kansas State
Agricultural
College

A **TEN** weeks' summer course in Domestic Science and Art for teachers began May 23, 1905. The regular spring term of the college begins March 28th. All of the common school branches are taught each term, and classes are formed in all of the first year and nearly all of the second-year studies each term. Write for catalogue.

PRES. E. R. NICHOLS,
BOX 50. MANHATTAN, KANS.

DEATH TO HEAVES
Guaranteed
NEWTON'S Horse, Cough, Hoarse, Sore, and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. Strongly recommended. \$1.00 per can, of dealers, or Exp. prepaid. The Newton Remedy Co., Toledo, Ohio.

The Stock Interest

THOROUGHbred STOCK SALES

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

September 1, 1905—Poland-Chinas at Bennington, Kans., C. N. White.
October 18, 1905—Fancy Poland-Chinas at Osborne, Kansas, by F. A. Dawley, Waldo, Kans.
Oct. 24, 1905—Jno. W. Jones & Son, Delphos, Duroc-Jerseys.
February 15-17, 1906—Third Annual Sale of the Improved Stock Breeders Association of the Wheat Belt at Caldwell, Kans., Chas. M. Johnson, Sec'y.
Dec. 12 and 13, 1905—Imported and American Herefords. Armour-Funkhouser sale at Kansas City, Mo., J. H. Goodwin, Manager.
Nov. 16-18, 1905—Registered stock at Arkansas City, Kansas by the Improved Stock Breeders' Association of the Wheat Belt. Chas. M. Johnson, Sec'y, Caldwell, Kans.
February 21-23, 1906—Percherons, Shorthorns, Herefords and Poland-Chinas at Wichita, Kans. J. C. Robison, Manager, Towanda, Kans.

Live-Stock Advertising.

T. W. MORSE, IN AGRICULTURAL ADVERTISING.

They have all been pastured—some rather closely—the fields of live-stock advertising, for not every "stock paper" proves a good tenant, and strives as good tenants should, to "make glad the solitary places, and the wilderness to blossom as the rose."

Pasturage alone has satisfied this and that one, and theavings of a neighbor's crop, the other, while the owners of the fields (the advertisers of pure-bred horses, cattle, hogs, etc.) secure but a scant rental. Here and there on fertile corners the claim-jumper has stopped tilling indifferently, harvesting whatever crop was in sight, and leaving behind him only the weeds of disrepute. But happily, this report is on the minority.

For the most part, the live-stock press are honest farmers and through their "field men" have plowed well and faithfully according to the instructions and opportunities given by the "breeders" for whom they work. Indeed, these instructions are more often supplemented by helpful suggestions on the part of the agent, who frequently gives his best service when left alone to plan the advertising campaign himself. And this calls for a definition of the central figure in this unique corner of the advertising world—the "field

man." He is paid by the paper he represents, but in his most capable form he is at once the solicitor for his paper and the adviser of the man he solicits, serving almost equally, as to time employed, the two. He must be a practical stockman and is often the purchasing agent of his advertiser client. He is an artist and an author—a designer of advertisements and composer of advertising literature. As a fearless critic, he sometimes serves the advertiser best, but only a born diplomat can play this role and hold his job.

The field man has been, and still is, in places, the missionary of publicity among the men who are making the country richer by improving its barn-yard population. To many a business farmer he has taught the rudiments of getting his goods before the public—and then has shouldered the heaviest work of putting his teachings into practice.

In this wise progress has been made, but the development of the business to follow the plowing of fields yet unplowed, devolves more upon the breeder himself. A few are really studying the science of advertising and making its practice purely a business proposition, but many who pay liberally each year for space are strangers to key lists, correspondence systems, mailing lists, catalogues, circulars, etc., the A, B, C of the commercial advertiser's business. With these helps, and others which his natural judgment and ability will suggest as he studies the matter, the advertiser of fine stock can vastly increase returns from the liberal service given him by the better class of farm papers. Herein lies the plowing yet to do.

I just came from a small public sale of pure-bred cattle—which was not a great success. About one hundred dollars had been spent in advertising. One consigner complained that he could not see where it had paid. I asked the manager if he had any inquiries for catalogues. "Yes," he said, "quite a number. There must have been some misunderstanding for we did not get out any catalogues at all." The secretary of the association,

THE JAYHAWK STACKER

THE BEST STACKER MADE

Entirely Up-to-Date. Easy on a Team.



The only stacker made that allows approach to stack from any direction and that places the hay in any desired spot on a rack of any shape or size. Gives an even distribution all over stack, leaves no loose spots to settle, take water and spoil. No dragging by hand over top of stack. No stakes to drive. No guy ropes to stretch. Spot your stack—pick up a rakeful of hay and keep building. You have been using improved machinery to handle your wheat and corn crops for years. Why not adopt a labor and money saving machine for use in your hay field?

The Jayhawk Stacker keeps four buck rakes busy without killing the man on the stack. Give it a trial. Sold under strict guarantee. It will build a Stack 20 feet high. We also manufacture sweep rakes that will leave the hay on Stacker Fork and not scatter it when backed out. Write for Descriptive Circulars.

The F. Wyatt Mfg. Co., Box 100, Salina, Kansas

too, remembered getting some inquiry but had been too busy to make answer. This, of course, is an exaggerated example of one important lack. Catalogues at public sales are the rule, but beyond these and printed letter-heads, the machinery for increasing the efficiency of such "ads" is more rare than plentiful. The men who had not learned the necessity of a catalogue had yet to learn what good goods are—and along with a few other beginners in the business were honestly trying to sell some things, the counterpart of which, in other lines of trade, would have to go for junk.

Argument and accurate description have not reached the use in fine stock advertising their value justifies. Occasionally, a daring field man injects a few "reasons why" and a little originality into a "Breeder's Card," but too many are conservative and stereotyped to the point where they fail to attract attention. By accuracy, I mean truth in illustration as well as description. The practice of overdrawing animal portraits for publication is one of the worst evils of the business.

The greatest and most easily practical field, perhaps, is in the compiling and use of literature to help in selling. Such literature need not be expensive, but should be fresh, carefully prepared and reliable. Once a year, at least, the breeder needs a new pamphlet list of stock for sale, if not a catalogue, and it should set forth briefly all the points of interest about the herd likely to appeal to prospective buyers.

This can not reach its fullest effect without a well-revised mailing list to supplement the usual run of inquiry. A courteous and commendable practice among breeders is to send catalogues to all their associates in business. This is good as far as it goes, but Montgomery Ward & Co. would hardly limit their catalogue list to Sears, Roebuck & Co., John M. Smyth, and the other mail-order houses. Every old customer, every prospective customer, and every customer of the other fellow (if you have their names) should get your printed matter while your advertisement in the live-stock papers is hunting for new customers you never heard of.

Of course, to the commercial advertiser, all this is rudiment and axiom, but in many fields of live-stock advertising, it is unturned sod.

Weight of Feeding Stuffs.

The quart measure is much used on the farm and especially in measuring the rations of concentrated feeds for farm animals. For purposes of calculating rations it is frequently desirable to know the weight of the quart of

common feeds. The following figures, which are to be printed in an Agricultural Department bulletin, will be handy for reference:

	One qt. weighs,	One lb. measures,
	lbs.	qt.
Barley meal.....	1.1	0.9
Barley, whole.....	1.5	0.7
Corn-and-cob meal.....	1.4	0.7
Corn bran.....	0.5	2.0
Cornmeal.....	1.5	0.7
Corn, whole.....	1.7	0.6
Cottonseed-meal.....	1.5	0.7
Linseed-meal (new process).....	0.9	1.1
Linseed-meal (old process).....	1.1	0.9
Mixed feed (bran, middlings).....	0.6	1.7
Oat middlings.....	1.5	0.7
Oats, ground.....	0.7	1.4
Oats, whole.....	1.0	1.0
Rye-meal.....	1.5	0.7
Rye, whole.....	1.7	0.6
Wheat bran.....	0.5	2.0
Wheat, ground.....	1.7	0.6
Wheat, middling (flour).....	1.2	0.8
Wheat middlings (standard).....	0.8	1.3
Wheat, whole.....	1.9	0.5

American Royal Show Notes.

There will be no classification for car-lots of native, or grain-fed feeding cattle at the American Royal Live Stock Show this year. This was one of the results of a meeting of the directors in this city yesterday. At a previous meeting it had been agreed to abolish the dividing line between native and range-bred feeding-cattle, which was the 98th meridian. Recently it was decided to do away with all distinctions between feeding-cattle in car-lots save those of breeding and age. There will be two general divisions in the car-lot exhibit—fat cattle, 15 head to constitute a car-lot; and feeding cattle, 20 head to constitute car-load.

The classifications in the car-lot division will be the same for each of the four breeds, Hereford, Shorthorn, Angus and Galloway—but, as heretofore, each breed will compete by itself. There will be but one class for fat cattle in each breed, and this for all ages. Three premiums will be offered. For breeding cattle there will be three classes with three premiums in each. The classes will be 2-year-olds, yearlings and calves. In each of the four breeds \$900 will be offered on car-lots. In addition there will be a number of specials and trophies, making the total premiums for car-lots upwards of \$4,500.

Feeding cattle are defined as cattle that have never had any grain, cottonseed-meal, oil-cake, gluten meal, or like concentrated food. Fat cattle for the competition may be fed on any kind of food in any manner, and at any place.

Yesterday's meeting was attended by President A. M. Thompson; Vice-President Eugene Rust, Secretary T. J. Wornall, Superintendent of Publicity John M. Hazelton, Charles Gudgeon, J. W. Rouse, B. O. Cowan, George Steven-



Manager Heath and his missionaries are now in the field favoring advertisers by accepting their contracts for the Kansas Farmer, Topeka, Kans. A limited amount of space is still available in the Kansas Farmer wagon for 1905.

son, Jr., and H. W. Elliott. Col. O. P. Updegraff, superintendent of the horse department, William McLaughlin, and J. C. Robison, of the committee in charge of this department, reported the horse classification, which was finally adopted. It calls for premiums aggregating \$8,000.

The following judges for the horse department were selected: Prof. C. F. Curtiss, Ames, Iowa; Prof. W. J. Kennedy, Ames, Iowa; and Col. R. B. Ogilvie, Chicago. Dr. D. V. Luckey, State Veterinarian of Missouri, and Dr. T. W. Hadley, of Kansas City, Kans., were appointed official veterinarians.

Four assistant superintendents were appointed, one to have charge of each of the four cattle divisions, as follows: J. W. Rouse, Kansas City, Herefords; B. O. Cowan, Chicago, Shorthorns; George Stevenson, Jr., Waterville, Kans.; Angus, and Charles Gray, Chicago, Galloways. Rules and regulations were adopted, and will be published in the official premium list now in press.

Fattening Cattle.

HERBERT W. MUMFORD, CHIEF IN ANIMAL HUSBANDRY, AND LOUIS D. HALL, FIRST ASSISTANT IN ANIMAL HUSBANDRY, UNIVERSITY OF ILLINOIS.

Of the 509 correspondents from whom replies were received in this inquiry, 53 per cent are mere feeders, who buy all the cattle they finish for market; 12 per cent are breeders, carrying all their cattle from birth to maturity or, as in a few instances, disposing of them as feeders instead of finishing; 35 per cent are both feeders and breeders, but in more than seven cases out of ten of these, only a small fraction of the cattle are raised, most of them being purchased to fatten. This circular is a report only of that part of the investigation dealing with the fattening of cattle for market as distinguished from maturing them from birth. Subjects closely related to the fattening process, such as the kinds of feed used, their preparation, and feeding equipment, as well as other phases of beef production, will be reported in following numbers of the series.

MARGIN REQUIRED.

"What margin over cost price do you consider necessary in order to make your feeding operations come out even, on a basis of 35 cent corn and \$8 hay, under average conditions of buying and selling your cattle; that is, that you shall neither gain nor lose by the enterprise?"

Three hundred and eighty-eight replies to this question give answers varying from 50 cents to \$2.50 per hundredweight; 40.5 per cent name \$1 per hundredweight; 60.5 per cent of all the replies lie between 75 cents and \$1.50; 18.3 per cent are below 75 cents, and 12.2 per cent above \$1.50.

"What margin over cost price will give you a satisfactory profit?"

Three hundred and sixty-five replies to this question give answers varying from 50 cents to \$3 per hundredweight; 5 per cent of these name 75 cents per hundredweight or less; 34 per cent name \$1 per hundredweight; 30 per cent name \$1.50; 16.4 per cent name amounts between \$1 and \$1.50; 3 per cent name \$1.75; 9 per cent \$2; and 2.6 per cent from \$2 to \$3. The question of margin required in fattening steers appears not to be well understood by many feeders. For a full discussion of the problem the reader is referred to Bulletin No. 90 of this station.

SEASON PREFERRED.

Forty per cent of our correspondents state they can fatten cattle to the best advantage and with the most profit in summer; 26 per cent favor the fall season; 20 per cent prefer spring; and 14 per cent, winter.

In order to avoid misleading conclusions, such as might be drawn from the above summary, the further question was submitted, "Have you found winter feeding profitable?" Sixty-one per cent answer affirmatively, 39 per cent negatively.

A question as to the time of year at which cattle are put on full feed

brought forth replies for each month in the year. September, October and November lead with a total of 51.5 per cent of the replies; March, April and May follow with 23.8 per cent; the remainder being scattered throughout the other months. It is noticeable that the number of replies for each month increases regularly from June to October and from January to April, while a regular decrease is noted from October to January and from April to June. Less regularity is found in the time of year preferred for finishing cattle. Thus 14 per cent aim to finish in December, 13 per cent in January, 9.5 per cent in February, 10 per cent in March, and from 5.7 to 7.7 per cent, or an average of 6.7, in each of the remaining months of the year. In other words, 46.5 per cent are marketed between December and March, inclusive, and 53.5 per cent are rather evenly distributed throughout the remainder of the year.

TIME REQUIRED TO GET CATTLE ON FULL FEED.

One-third of our correspondents take thirty days for getting cattle on full feed. About one-third take 15, 20, or 25 days. About 12 per cent take 35 or 40 days. Twelve per cent take less than 15 days, and 8 per cent more than 40 days. The shortest time mentioned is 1 day, this method being followed by 7 out of 416 correspondents. The longest time noted is 100 days, only 1 correspondent recommending this starting period, and only 2 others give more than 60 days.

LENGTH OF FATTENING PERIOD.

Two inquiries were made on this point. In reply to the question, "How long do you plan to feed?" 26.5 per cent of our correspondents answered 6 months; 23.5 per cent, 5 months; 12.5 per cent, 4 months; 12 per cent, 7 months; 9 per cent, 8 months; 9 per cent, more than 8 months, and 7.5 per cent 3 months or less. The longest period mentioned is 15 months. Only 1 per cent of the replies mention 12 months or more, and only 1 per cent less than 3 months.

"As a result of your experience what do you consider the best length for the fattening period? (This refers to the number of days on full feed.)" Twenty-seven per cent favor a period of 5 months; 21 per cent, 4 months; 17.5 per cent, 6 months; 16.5 per cent, 3 months or less; 10.5 per cent, 7 months; 7.5 per cent, 8 months or more. Only 1 per cent favor more than 10 months, and only 3 per cent less than 3 months.

NUMBER OF FEEDINGS PER DAY.

In response to an inquiry as to the best number of feedings per day for steers in the feed lot no correspondent mentions other than two feeds per day.

AMOUNT OF FEED PER HEAD ON FULL FEED.

The results pertaining to the kind of feed used and its preparation will be reported in full in a following circular. The following is a summary of the amounts fed to yearlings and 2-year-olds in summer and winter respectively.

1. Yearlings in winter.

Of the 139 replies, 25 per cent report feeding all the corn the cattle will eat; 14 per cent feed less than one peck of corn or its equivalent; 25 per cent feed one peck of corn or its equivalent; 15 per cent feed $\frac{1}{2}$ bushel, 8.5 more than one peck and less than $\frac{1}{2}$ bushel; 4 per cent feed $\frac{1}{3}$ to 2-5 bushel; 2 feeders recommend $1\frac{1}{2}$ pounds shelled corn or its equivalent per 100 pounds live weight; 8 men mention feeds other than corn, as follows: $\frac{1}{8}$ bushel corn and oats; $\frac{1}{4}$ bushel corn and oats; $\frac{1}{4}$ to $\frac{1}{2}$ bushel corn and oats; $\frac{1}{4}$ bushel corn, 3 pounds bran; $\frac{1}{4}$ bushel corn, 4 pounds cottonseed-meal; $\frac{1}{4}$ bushel corn and some bran; all the corn, oats and bran they will eat; all the corn and oats they will eat.

2. Yearlings in summer on grass.

Of 76 correspondents 17 per cent feed less than one peck of corn or its equivalent; 45 per cent feed one peck; 8 per cent feed $\frac{1}{2}$ bushel, 12 per cent feed $\frac{1}{3}$ to $\frac{1}{2}$ bushel; 12 per cent feed

all they will eat; 5 correspondents mention feeds other than corn as follows: 1-5 bushel corn, 3 pounds cottonseed-meal; 1-5 bushel corn, 6 pounds bran or oats, 4 pounds oil-meal; $\frac{1}{4}$ bushel corn and some bran; $\frac{1}{4}$ bushel corn, oats and bran (2 parts corn, 1 part oats and bran); $\frac{1}{2}$ bushel corn and oats, 5 pounds oil-meal.

3. Two-year-olds in winter.

Of 219 correspondents, 5 per cent report "All they will eat;" 2 per cent, less than one peck of corn or its equivalent; 5 per cent, one peck; 5 per cent, more than one peck and less than $\frac{1}{2}$ bushel; 20 per cent, $\frac{1}{2}$ bushel; 17 per cent, more than $\frac{1}{2}$ bushel and less than $\frac{1}{2}$ bushel; 39 per cent, $\frac{1}{2}$ bushel; 1 feeder gives $1\frac{1}{4}$ pounds corn per 100 pounds live weight of cattle; 11 correspondents mention feeds other than corn, as follows: $\frac{1}{4}$ bushel corn, 6 pounds cottonseed-meal; $\frac{1}{4}$ bushel corn, 6 pounds oats or bran, 6 pounds cottonseed-meal; $\frac{1}{4}$ bushel corn and oats ($\frac{1}{2}$ corn); $\frac{1}{4}$ bushel corn, 4 to 7 pounds bran; $\frac{1}{2}$ bushel corn, 5 pounds cottonseed-meal; $\frac{1}{2}$ bushel corn, oats and bran ($\frac{1}{2}$ corn); $\frac{1}{2}$ bushel corn, 15 pounds oats, 2 pounds oil-meal; $\frac{1}{2}$ bushel corn, 5 pounds bran; $\frac{1}{2}$ bushel corn, 2 pounds bran; all they will eat of corn oats and bran ($\frac{1}{4}$ corn); all the corn they will eat, 5 pounds bran, 5 pounds oil-meal.

4. Two-year-olds in summer on grass:

Of 154 correspondents, 3 per cent feed less than one peck of corn or its equivalent; 19 per cent feed one peck; 9 per cent feed more than one peck and less than $\frac{1}{2}$ bushel; 21 per cent feed $\frac{1}{2}$ bushel; 16 per cent feed more than $\frac{1}{2}$ and less than $\frac{1}{2}$ bushel; 17 per cent feed $\frac{1}{2}$ bushel; 13 per cent feed "all they will eat;" 5 feeders mention grains other than corn, as follows: $\frac{1}{2}$ bushel corn, 10 pounds oats, 3 pounds oil-meal; 1-5 bushel corn, 6 pounds oats or bran, 6 pounds cottonseed-meal; $\frac{1}{4}$ bushel corn, 4 pounds cottonseed-meal; $\frac{1}{2}$ bushel corn, oats and bran ($\frac{1}{2}$ corn); $\frac{1}{2}$ bushel corn and oats.

In considering the above summaries it should be borne in mind that many of the feeders who do not mention other grains than corn use supplementary grains, and that the replies are in most cases expressed as the equivalent of the ration in corn. Also, many who name the approximate weight of feed used follow the practice of giving such amounts as the cattle will eat, and the figures given are in most cases estimates of the amounts actually eaten.

It is seen that in general heavier feeding is practiced in winter than in summer on grass. This difference is much less marked, however, in the case of yearlings than with older cattle. It is apparent that the common rule "a half bushel of corn to a full feed," places the average much higher than that followed in common practice.

DAILY GAIN ON FULL FEED.

Two hundred and sixty correspondents report the average daily gain of cattle on full feed. The average of all replies for cattle in summer on grass is 2.7 pounds per day. In winter the average is 2.23 pounds per day.

FEED REQUIRED FOR 100 POUNDS GAIN.

It is a common saying among cattle-feeders that a bushel of corn will produce five pounds of beef. In order to place our correspondents on record in this matter they were asked, "How much grain and how much hay do you estimate it takes on the average to produce 100 pounds of gain on (1) calves in winter, (2) calves in summer on grass, (3) yearlings in winter, (4) yearlings in summer on grass, (5) 2-year-olds in winter, (6) 2-year-olds in summer on grass.

The most striking features of the replies to this, as to many of the questions here discussed, are the wide variation in the replies. The need of more careful observation and more systematic methods in feeding is here strikingly shown. For calves in winter, the average amount of corn named in 41 replies is $11\frac{1}{4}$ bushels, the highest amount 20 bushels, and the lowest 4 bushels. For the same time in summer, the average amount named in 31 replies is 10.3 bushels, the highest 16

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Sure relief for Pink Eye, foreign irritating substances, clears the eyes of Horses and Cattle when quite milky. Sent prepaid for the price, \$1.
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The "Dipping Proposition"—a book on the common ailments of animals and a Simple Remedy—with a sample of the remedy, Carbolic Dip, sent free. Sample will demonstrate that the Dip is a sure cure. Book will save you money.
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who declare it to be the "Best remedy on earth" for Spavins, Ringbones, Splints, Curbs and all forms of lameness. Your experience will be the same if you try it.
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Guaranteed to cure the lameness for good—may or may not take off the lump. Easily used by anybody, and a single 45-minute application usually does the work—occasionally two required. Write for Free Home Book before ordering. It gives all the particulars, and tells you what to do for other kinds of blemishes.
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bushels, and the lowest 4 bushels. For yearlings in winter, the average amount named in 47 replies is 15.3 bushels, the highest 30 bushels, and the lowest 5 bushels. For the same in summer the average amount in 37 replies is 13.1 bushels, the highest 25 bushels, and the lowest 5 bushels. For 2-year-olds in winter the average calculated from 110 replies is 18.5 bushels; the highest 40 bushels, the lowest 4½ bushels. For the same in summer, the average of 85 replies is 14.6 bushels, the highest 37 bushels, and the lowest 6 bushels. Stating the above results in other terms and using the averages given above, a bushel of corn fed to calves in winter produces 8.88 pounds gain, calves in summer 9.97 pounds, yearlings in winter 6.53 pounds, yearlings in summer 7.6 pounds, 2-year-olds in winter 5.4 pounds, and 2-year-olds in summer 6.8 pounds.

It is clear that in the majority of cases more than 5 pounds of gain are expected from a bushel of corn. We find that younger cattle in general return relatively a much larger gain for the feed consumed than older cattle. It is also seen that a bushel of corn is more efficient in producing gain in summer on grass than in winter.

Turning to the figures relating to the amount of hay required for 100 pounds gain, when fed with the amount of corn named above, we find for calves in winter an average of 378 pounds, the highest amount mentioned being 1,000 pounds and the lowest 150 pounds. For calves in summer on grass the average amount is 267 pounds, the highest amount 1,000 pounds, and the lowest 50 pounds. Only 8 replies give the amount of hay fed to calves in summer on grass. For yearlings in winter the average amount is 517 pounds, the highest 1,600 pounds, and lowest 100 pounds. For yearlings in summer on grass the average amount is 219 pounds, the highest 750 pounds, and lowest 50 pounds. Only 8 correspondents state the amount of hay fed to yearlings in summer on grass. For 2-year-olds in winter the average amount is 473 pounds, the highest 1,100 pounds, and lowest 100 pounds. For 2-year-olds in summer on grass the average is 128.4 pounds, the highest 400 pounds, and lowest 15 pounds. Only 16 replies were received to the latter question.

Much greater variation is found in the replies upon which these averages are based than in the case of the amounts of grain as reported above. It is much more difficult to estimate the weight of hay than of grain. As it is usually fed in large quantities, in racks or mangers, kept before the cattle continually, and with more or less waste, no large number of exact replies to such a question as this is to be expected. So far as these averages can be relied on, no definite relation is shown between the age of the cattle and the amount of hay eaten for 100 pounds gain in winter feeding, excepting that the calves clearly require less relatively than older cattle. In summer on grass the calves seem to receive more hay for 100 pounds gain than yearlings, and yearlings considerably more than 2-year-olds. The small number of estimates given on the latter point makes the average of doubtful value. It is noteworthy, however, that hay is fed along with grass and grain in quite a number of cases.

In general it may be said that the amounts of feed named here as being required for 100 pounds of gain on cattle are somewhat less than the amounts commonly stated. Thus, a frequently repeated rule for calculating the cost of gains on fattening steers in the feed-lot is 1,000 pounds of grain and 500 pounds of rough feed. The reports here summarized on this point give an average of 924 pounds of grain and 428 pounds of hay.

REGULATING THE ROUGHAGE.

Ninety-two per cent of our correspondents allow the steers all the roughage they will eat during the fattening period. Only 8 per cent limit the amount of roughage.

Forty-one per cent of those who reply make a practice of varying the kind of roughage in order to make the

steers eat a large amount. The remainder, 59 per cent, do not follow this practice.

NUMBER OF CATTLE FED TOGETHER.

"How many steers do you run in a feed-lot together?"

Of 417 feeders who answer this question, about one-third feed from 25 to 50 head in one yard, and one-third from 50 to 100; of the remainder, about one-half keep less than 25 and one-half more than 100 head in one yard. It should be added that the replies in most cases correspond to the total number of cattle handled by the correspondent. That is to say, as a rule all the cattle are fed in one yard, and the exceptional instances are those in which more than 100 cattle are fed, in which case the number recommended is usually 100 head or less. One of the most successful cattle-feeders in Illinois reports that two carloads should be the maximum number fed in one lot, and that one load is preferable, his thought being that cattle are more quiet in small numbers and in uniform grades.

Paralysis of Hogs.

Within the past year a large number of reports have come to this office from different parts of the State of what appears to be a paralysis of the back and limbs of hogs. The young pigs are the ones most generally affected. The cause has been found to be from over-feeding young, growing pigs on an exclusive diet of corn and water. Fat is put on the pigs too rapidly, with the result that the weak bones of a growing pig can not support the rapidly-put-on flesh. The first symptoms noticed are that the pigs refuse their feed and walk rather stiffly, continuing to grow worse until they can barely raise themselves upon their front legs. The pigs die of starvation, as they can not drag themselves to the trough.


Treatment.—To prevent young pigs getting sick, a very small amount of corn should be fed them while nursing their mothers. Then gradually increase the amount of corn. When weaned, feed ground feed of bran, shorts, corn, and a little bone-meal mixed with sufficient milk to make a thin slop.

After young pigs are paralyzed, it is best to take all corn away from them and see that they are placed at a trough of milk in which has been stirred bran and the following tonic, which is recommended by the Bureau of Animal Industry as a preventive against hog-cholera and swine-plague, and which is also a very good tonic for hogs:

	Pounds.
Wood charcoal.....	1
Sulfur.....	1
Sodium chloride.....	2
Sodium bicarbonate.....	2
Sodium hyposulfite.....	2
Sodium sulfate.....	1
Antimony sulfide (black antimony).....	1

These ingredients should be completely pulverized and thoroughly mixed. The dose of this mixture is a large tablespoonful for each 200 pounds weight of hog to be treated, and it should be given only once a day. When hogs are affected with these diseases they should not be fed on corn alone, but they should have at least once a day a soft feed, made by mixing bran and middlings, or middlings and cornmeal, or ground oats and corn, or crushed wheat with hot water, stirring into this the proper quantity of the medicine. Hogs are fond of this mixture; it increases their appetite, and when they once taste of food with which it has been mixed they will eat it though nothing else would tempt them.

Animals that are very sick and that will not come to the feed should be drenched with the medicine shaken up with water. Great care should be exercised in drenching hogs or they will be suffocated. Do not turn the hog on its back to drench it, but pull the cheek away from the teeth so as to form a pouch, into which the medicine may be slowly poured. It will flow from the cheek into the mouth, and when the hog finds out what it is, it will stop squealing and swallow. In our experiments, hogs which were so sick that they would eat nothing have



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Mr. E. A. James, of Ewart, Iowa, writes as follows:
 Iowa Stock Food Co., Jefferson, Iowa.
 Gentlemen: I have been feeding Iowa Stock Food for four years to the amount of about 2,000 pounds yearly. I have tried my cattle with and without Stock Food and am confident I get a larger profit out of the Stock Food I feed than out of any other part of the ration.
 I find Iowa Stock Food the equal in every respect of any Stock Food I have fed, and cheaper on account of its superior strength.


WHAT IOWA WORM POWDER WILL DO.

Perry Henderson, of Litchberry, Ill., writes as follows.
 Gentlemen: The Iowa Worm Powder you shipped me by express December 24, 1904, I received on December 25th. I went to feeding right away and there was no end to the worms that came from my hogs.
 I had 80 head of shoats and they were in bad shape. Since feeding the Worm Powder I have been feeding Iowa Stock Food and I never had shoats do any better than mine are doing now.
 I had some of my neighbors use some of the Iowa Worm Powder and they got the best of results from it. I got a man to use it who was using another worm remedy. He now thinks the Iowa Worm Powder the only worm remedy, and says he will not use the other any more. I wish you could have seen the worms that passed from his hogs. It was a sight. I advised him to feed Iowa Stock Food to keep his hogs gaining better.

Write us, care of Dept. E, and get our Special Offer.

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BLACKLEGIDS

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

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commenced to eat very soon after getting a dose of the remedy, and have steadily improved until they appear perfectly well.

This medicine may also be used as a preventive of these diseases, and for this purpose should be put in the feed of the whole herd. Care should of course be taken to see that each animal receives its proper share. In cases where it has been given a fair trial it has apparently cured most of the animals which were sick and has stopped the progress of the disease in the herds. It also appears to be an excellent appetizer and stimulant of the processes of digestion and assimilation, and when given to unthrifty hogs it increases the appetite, causes them to take on flesh and assume a thrifty appearance.

WORMS IN HOGS.

Hogs affected with worms in the intestines run down in condition, become very thin and lank, back is arched, eyes dull, refuse feed, walk stiffly, and appear lifeless. The worms may be very numerous, in bad cases completely filling the intestines. The pigs die if not treated. To secure the best results, affected hogs should receive individual treatment. Twenty-four hours before administering treatment very little feed should be given them. Then give the following medicine as a drench, to each one-hundred-pound hog; larger or smaller hogs should receive a dose in proportion:

Oil of turpentine, drams.....	4
Liquor ferri dialysatus, drams.....	½
Raw linseed oil, ounces.....	6

If necessary, repeat the dose in four days. After worms have been removed, give the tonic recommended above, to put the pigs in condition.

TUMORS ON PIGS AFTER CASTRATION.

Causes.—Bunches form on the cords of pigs after castration as a result of infection from dirty instruments or hands, etc., during the operation; or from leaving the cord too long, thus increasing the liability of its becoming infected. These tumors continue to grow, and in the worst cases attain the size of a man's head.

Treatment.—Cut down on the tumor the same as in a simple case of castration. Separate the skin from the tumor

and then follow up the cord with the hands. Cut the cord off as high up as possible. The wound may be healed by the use of any of the common disinfectants. A teaspoonful of carbolic acid in a quart of water may be used once daily until the pigs are healed. Pigs should be kept in a clean pen after the operation. C. L. BARNES.

A Kansas Cattle Feeder's Method.

In regard to handling the cattle I sold recently at Kansas City at \$6.80 per cwt. I will say that in the winter of 1903-04 I purchased 125 head of long yearlings, mostly Shorthorn-Hereford cross. They were wintered through on a stalk-field and on alfalfa hay weighed 700 pounds on grass in the spring.

On July 20 I sold 30 head of the tail-end cattle. In September I sold 22 head of the poorer kind. On October 18 the remaining 73 head were brought in off grass and put in the feed-lot; they then weighed 1,073 pounds. I began feeding ear-corn and alfalfa hay. After 50 days' feeding I sold 33 head, sorting them out and keeping back the best, leaving one 40 head in the feed-lot. These cattle that I sold up to this time paid out but did not make me any money. I fed these 40 head two months on ear-corn and alfalfa hay, then began feeding ear-corn, shelled corn and corn-chop in equal parts, using alfalfa hay for roughness. I continued feeding this way the remaining time I fed, which was four months.

In January last, I sold 20 head of the lighter cattle. On January 18 the remaining cattle, 20 head, weighed, 1,529 pounds, the first time they had been weighed separately. On February 18 they weighed 1,513 pounds. I shipped these cattle April 24. Their home weight at this time was 1,682½ pounds. At Kansas City the next day they weighed 1,599½ pounds.

I am 35 years old and have been feeding cattle for 12 years.

I use no stock foods of any kind. I do my own feeding and feed regularly morning and evening.

Regularity in feeding has a great deal to do with good gains.

These cattle were fed in an open feed-lot with some trees for protection.

(Continued on page 650)

Miscellany

This Writer Would Socialize all industry.

EDITOR KANSAS FARMER:—Having read your valuable paper for several years I am impressed with its good qualities and progressiveness, and note with satisfaction your desire to be impartial and just and your encouragement to reforms. To put in the proper light several things which seem to be misunderstood, this article is written. Foremost among these is socialism. The great fear at the present time is that socialism is destructive of law and order, or that it is paternalism.

A casual look into any dictionary will disabuse the mind of the idea that it destroys law and order. The most paternal form of government possible would be cooperation. We have paternalism to a certain extent now and to extend its functions to all industries would simply mean cooperate ownership and control of all things useful to man. Is there more incentive to labor when performed for another than in work for one's self? Is it better to rent land than to own it and also its product? If the profit system is just, it is wrong to evade it and where there is a system of profit there must be some one to pay it. We were born without our consent into conditions which we did not make. We were consumers before we could produce, and each one of us possesses labor power which must be used or there can be no product. This labor power must be used in some way, and the profit derived depends largely on the person who can control labor. When you expend your labor power on your own farm you get all of the product, but when it is expended on the farm of another you obtain only a part of the product. So it applies to all things useful to man. It is simply a question of the ownership of the means by which labor is productive. Would it dwarf any of man's higher and nobler qualities to be joint owner, joint director, and joint sharer of all things produced? Have we not learned lessons of mutuality from the trusts and combines?

The present conditions in the oil business in Kansas have been brought about by the fact that the sources of oil were owned and controlled by men who sought to obtain the raw material at a low cost and, by possessing the supply, fix the price of refined oil high. This, of course, left a wide margin of profit. Yet the oil business does not approach in magnitude the losses sustained by the people through the beef trust and other trusts. A few gallons of oil a year is usually the farmer's purchase whereby he possibly may lose a dollar, while the beef trust may rob him of hundreds. Yet the oil trust is given the prominence. Candidly, is not this oil agitation and subsequent State refinery bill a protest against the profit system?

Let us reason it this way: Ten men control the cattle business and can fix the prices both to the producer and consumer while thousands raise cattle to sell and tens of thousands eat beef. Because of the ten men's control, the cattle-raisers receive from \$5 to \$10 less per head than formerly and the consumers pay from 10 to 20 per cent more for beef. Now it is plain that both parties have contributed many thousands of dollars to these ten men and neither party has been benefited. Furthermore, farmers have lost this money which would have been used at home and would have been a benefit to the community, and the consumers have also lost money they need to spend at home.

Is it just that we should allow a condition where a few men can compel millions to pay tribute? If it is not just, how are you going to avoid it when we perpetuate the profit system which fosters it? What brought the trusts into existence? Desire for more profit. By what means? The ownership of the means of production or its product. Whenever a man, or com-

pany of men, owns more of the means of production than he can apply his labor to, he simply owns it to exact tribute from those who must have access to it. If we can and do operate a twine-plant and a proposed oil-refinery, why can we not own and operate a machinery-plant and beat the harvester companies, the coal mines, and the railroads and control all things useful to man?

If the object is to produce oil at cost, and twine also, and if it is better for the people to retain for their own use the money now paid to trust magnates, why not socialize all industries? It is hard for the people to understand that socialism would simply mean the elimination of the profit which only a few obtain, and the substitution in its stead of a system of labor at cost exchange which is really all anything is worth. We have to pay now cost plus profit whenever we buy, and in selling it is cost minus profit. To every person who adds value to anything used in the economy of man should be paid just that added value. We do not object to paying for value received but we do object to paying an actual value for a fictitious one.

Hoping the above may perhaps be of some benefit to man in his struggle for existence and trusting the future will hold greater opportunities for man's progress than the present, I pin my faith in the people. L. A. WELD, Grant County, Oklahoma.

Geology and Underground Water Resources of the Central Great Plains.

For the past eight years Mr. N. H. Darton, of the United States Geological Survey, has been studying the geology and underground water resources of the Central Great Plains. Although the investigation is by no means completed, it has been thought desirable to prepare some of the results for preliminary publication. In Professional Paper No. 32, Mr. Darton accordingly gives all available information regarding the deep wells that have been bored in this region and discusses the geology of the area with particular reference to the bearing it has on the prospects for further water-supply.

The area to which this report relates includes the greater portions of South Dakota, Nebraska, and Kansas, and the eastern parts of Colorado and Wyoming, a territory of about one-half million square miles. On account of its size, the region presents relatively diverse geologic conditions, but comprises comparatively few formations, most of which are widespread. The question of water-supply, both underground and overground, is of great interest to the people in this district, and although considerable progress has been made in some sections in developing well-waters, there are vast areas in which the present supplies are inadequate even for local domestic use. In order to understand the relations of the underground water it has been necessary to investigate the geology, especially the structure and stratigraphy of the water-bearing and associated formations. This part of the work has required a very large amount of special field study, and the present results show that extended investigation will be necessary before many important questions of geology can be fully understood.

After describing the geography of the Central Great Plains, Mr. Darton takes up the geology of the Black Hills region, of the Bighorn Mountains, of the north end of the Laramie Range, of the Hartville uplift, of the Laramie Front Range, the Paleozoic and Mesozoic geology of Eastern Colorado, the geology of Eastern South Dakota, of Eastern Nebraska, and of Central and Western Kansas, finishing this part of his subject with an outline of the geologic history of the Central Great Plains region. The deep wells and well prospects in South Dakota, Nebraska, Kansas, Colorado, and Wyoming are next described.

Not the least interesting part of the report are the final chapters, devoted to the economic geology of the region. Deposits of coal, petroleum, natural gas, salt, gypsum, cement, fire clay,

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soda, granite, fuller's earth, limestone, bentonite, volcanic ash, gold, iron ore, silver, lead, copper, tin and manganese are succinctly described by Mr. Darton.

This report is beautifully and elaborately illustrated with 72 photographic plates and 2 diagrams, cross sections, sketch maps, etc. Two of the plates—one showing the Gateway of the Gods, west of Colorado Springs, Colorado, and the other the Devil's Tower, south of Hulett, Wyoming—are

in colors. The report covers 433 pages and, although preliminary in character, is an important work containing a vast deal of new information. It is published for general distribution and may be obtained, free of charge, on application to the Director of the United States Geological Survey, Washington, D. C.

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Condition of Wheat, June 1, 1905, Compared with Former Years—Compiled from Official Reports of the United States Department of Agriculture.

	Winter wheat.				Spring wheat.			
	Average condition June 1—				Average condition June 1—			
	1905.	1904.	1903.	For 10 yrs.	1905.	1904.	1903.	For 10 yrs.
Maine . . . . .	..	..	..	..	..	..	..	..
New Hampshire . . . . .	..	..	..	..	101	98	99	99
Vermont . . . . .	..	..	..	..	..	..	..	..
Massachusetts . . . . .	..	..	..	..	89	98	74	92
Rhode Island . . . . .	..	..	..	..	..	..	..	..
Connecticut . . . . .	..	..	..	..	..	..	..	..
New York	94	71	76	84	..	..	..	..
New Jersey	91	77	80	83	..	..	..	..
Pennsylvania	94	75	89	85	..	..	..	..
Delaware	95	80	78	87	..	..	..	..
Maryland	91	81	83	89	..	..	..	..
Virginia	87	82	80	83	..	..	..	..
North Carolina	85	86	66	85	..	..	..	..
South Carolina	79	82	70	88	..	..	..	..
Georgia	85	85	74	87	..	..	..	..
Florida . . . . .	..	..	..	..	..	..	..	..
Alabama	80	82	89	90	..	..	..	..
Mississippi	79	79	91	88	..	..	..	..
Louisiana . . . . .	..	..	..	..	..	..	..	..
Texas	76	72	87	78	..	..	..	..
Arkansas	80	87	74	84	..	..	..	..
Tennessee	81	83	76	82	..	..	..	..
West Virginia	89	68	90	81	..	..	..	..
Kentucky	92	72	84	80	..	..	..	..
Ohio	96	55	87	71	..	..	..	..
Michigan	95	54	86	71	..	..	..	..
Indiana	94	58	84	67	..	..	..	..
Illinois	80	81	75	69	..	..	..	..
Wisconsin	94	84	88	75	96	92	95	95
Minnesota . . . . .	..	..	..	..	92	92	95	95
Iowa	95	80	90	82	93	95	91	96
Missouri	84	85	70	78	..	..	..	..
Kansas	78	84	83	78	96	84	80	80
Nebraska	93	85	94	83	90	88	92	90
South Dakota . . . . .	..	..	..	..	92	96	100	96
North Dakota . . . . .	..	..	..	..	95	94	99	95
Montana . . . . .	..	..	..	..	97	95	95	95
Wyoming . . . . .	..	..	..	..	98	96	92	98
Colorado . . . . .	..	..	..	..	98	94	87	95
New Mexico . . . . .	..	..	..	..	103	61	98	90
Arizona . . . . .	..	..	..	..	97	72	92	87
Utah . . . . .	..	..	..	..	101	102	94	98
Nevada . . . . .	..	..	..	..	103	104	96	100
Idaho	104	97	90	90	101	95	94	92
Washington	96	98	85	95	97	92	89	94
Oregon	93	96	86	95	96	93	87	94
California	78	80	76	80	..	..	..	..
Oklahoma	75	67	93	85	..	..	..	..
Indian Territory	90	78	74	75	..	..	..	..
United States	85.5	77.7	82.2	79.2	93.7	93.4	95.9	94.4

The Young Folks

CONDUCTED BY RUTH COWGILL.

June.

June's glorious sun unclouded shines
And not a bud unopened lingers;
The roses laugh, and 'mid their vines
The golden petaled eglantines
Tangle their fragrant fingers.

The epauletted blackbird sings
His love song in the velvet meadows;
The oriole on flaming wings
Flits through the orchard openings
And glides into the shadows.

Afar the lake, a silver sheet.
Girded by swells of green lies sleeping
The brooks that in its bosom meet
We see not, but their foam-shod feet
We hear the ledges leaping.

Along the fir-fringed mountain peaks
The fragrant vapors drift and double;
The doubting dove its lover seeks;
Faint heard the distant surf bespeaks
The city's toll and trouble.

Leave your dull haunts, ye human moles,
Blindly for sordid treasures mining,
By verdant parths seek brighter goals,
And weave around your jaded souls
The garland June is twining.
—Frank H. Gassaway, in Field and Stream for June.

The Girl Who Lives at Home.

There are many girls who are dull and stupid and unattractive, simply because they are "home girls." The home life of the average girl does not offer the vigorous exercise and the fresh air that are necessary to keep the body and the mind in good condition. Only a few muscles are brought into play, and even they in a slow and monotonous way, and usually the same close air of the house is breathed over and over again, only the upper part of the lungs being used at all. No one can be truly alive under such conditions. To truly live means vigor, alertness, quickness of mind and feeling and these things depend to a marvelous degree upon physical health. As said at first, the girl at home has little aid in the way of necessary exercise. What she does have is often hard and wearisome, so that she goes about it sluggishly and heavily, and when it is done she wants to rest. She drops into a chair or upon a couch like a dead weight. From hour to hour and from day to day, she feels no rebound, no relaxation. If she would be willing to spend a half-hour's less time in inaction, using it instead in deep-breathing, a brisk bath, and the exercise of unused muscles, she would feel herself a different girl. The following advice on the subject is good:

"What can a home girl do to develop herself physically?" asked a girl of the woman who boasts of having developed more women athletes than any other woman in the world. "I do not want to become an athlete, or to join a gymnasium."

The teacher glanced at the well-built figure and answered: "You are too stout, to begin with. Before you can be developed, you must reduce your weight."

"The home girl," the teacher went on, "suffers from many things which do not affect the business girl, the society woman and the girl athlete. She has what physical culture teachers might call hometies. It comes from staying in the house too much."

"The home girl may be active, but it is the wrong kind of activity. She eats, but she eats the wrong food. She breathes the air, but is the wrong kind of air. She lives in the wrong way."

"The home girl is worse off from a physical-culture outlook than the girl who has to work hard out of doors. Window cleaners, women who sell papers on the corners, those who canvass from house to house and those who do other work of an out-door nature get the fresh air at least. But the home girl does not always succeed in obtaining the same treat."

"Recently we had a pupil, a girl who wanted to become better in shape and general health. She was a home girl."

"On being questioned she confessed that she sewed three long hours every day, helped in various ways and dislodged the dust from the bric-a-brac for an hour of the day and took care of the children. The remainder of the time, some six or eight hours, she devoted to reading."

"She was fat, poor in complexion and round shouldered. She walked horribly, and she had indigestion."

"The average home girl has to overcome a liking for sweets and a tendency to indigestion. She has a poor figure, is inclined to stoop and has a distaste for fresh air and walking. She also has a set of brittle teeth, very dull hair and heavy looking eyes."

"In addition, the home girl has to overcome a tendency to sleep too much. You see, she has many things to contend with, this home girl."

"Well, her first duty must be to learn to wear the right kind of shoes."

"It is not flat shoes you want, nor high-heeled shoes, nor shoes with curved insteps, nor any other one kind of shoes. But you want shoes that fit your feet. Experiment until you find a shoe that reaches every part of your foot without pressing upon any particular joint or sensitive place. Then, when you have found this kind of shoe, wear it."

"Wear different shoes on different days. A woman who walks a great deal and is always comfortable has her Monday shoes and her Tuesday shoes and her shoes for other days. She never has tired feet and never a corn. She wears different shoes on different days, with the result that the pressure comes always upon a different part of the foot."

"The home girl need not go out to walk. She can take her walking exercise right in the house."

"To walk properly put on a loose suit. Let out all your bands before you begin to walk. Loosen your collar. Loosen the tops of your shoes if they are tight."

"Now the next thing is the right position. To walk properly and well, you must hold your head erect. To be sure you are holding your head as you should hold it, lift a light chair and carry it on top of your head. This will insure a correct carriage of the head and will develop the muscles of the neck and arms."

"Breathe deeply as you walk. Start off with a firm, erect carriage. Stride along. Move gracefully, if you can. And remember that if you walk as you should walk, grace will surely come to you. Walk about a room like this daily and you will soon see the good result."

"The home girl is looking for economical exercises. I know one girl who developed her chest by doing stunts with the piano stool. She played leap frog over it, she jumped over it, putting one foot on it, going over it as though she were jumping a hedge."

"Then this girl practiced a diving movement. Standing erect in the seat of a chair, she would put the palms of her hands together and pretend to dive forward. She would lift her hands very high, touch the tips of the fingers together, dive forward, and just save herself from falling."

"Home girls and home women who are too fat must do these things."

"Breathe deeply three times a day, fifty breaths each time."

"Open the window, top and bottom, while breathing, so as to get a pure-air supply."

"Walk five miles a day, if only around the center table. March at least an hour around the table, making it in two instalments of half an hour each time."

"Practice simple athletics with a light chair."

"Practice diving, jumping, bending and stretching."

"And finally, teach the muscles! Ascertain which are your weak muscles and teach them to do their work."

The home woman must not eat too much candy. She must not eat too rich food. She must get out and exercise after her middle meal. And she must learn what foods agree with her."—N. Y. Sun.

Statistics show that more people live to be one hundred years old in warm climates than in Northern countries. In Mexico there are many centenarians, for in towns not forty miles from the capital are not a few men and women beyond the one-hundred-year line. Germany reports 778 centenarians, France 213, England 146 and Spain 401, and the population of Spain is relatively small.

For the Little Ones

A Gentleman.

I knew him for a gentleman
By signs that never fail:
His coat was rough and rather worn,
His cheeks were thin and pale;
A lad who had his way to make,
With little time for play;
I knew him for a gentleman
By certain signs to-day.

He met his mother on the street;
Off came his little cap.
My door was shut; he waited there
Until I heard his rap.
He took the bundle from my hand,
And when I dropped my pen,
He sprang to pick it up for me,
This gentleman of ten.

He does not push and crowd along;
His voice is gently pitched;
He does not fling his books about
As if he were bewitched.
He stands aside to let you pass;
He always shuts the door;
He runs on errands willingly
To forge and mill and store.

He thinks of you before himself;
He serves you if he can;
For in whatever company
The manners make the man.
At ten or forty 'tis the same,
The manner tells the tale;
And I discern the gentleman
By signs that never fail.
—Margaret E. Sangster, in Harper's Young People.

Angela's Wanderings (Concluded.)

As I was saying, there was a great confusion of frog voices down there by the creek, so great that Angela could scarcely hear herself think. But there was one loud and insistent voice that kept saying the same thing over and over again, and before long she began to make words out of the strange sounds.

"Uh—Uh—Uh—how do you do? How do you do?" it said, with queer little breaks between some of the words.

As soon as Angela understood what it was saying, she looked down at the frog and said, "Oh, I beg your pardon! I did not understand you at first!"

Then she heard another one saying, "W—w—wel—come to our midst, fair maid; w—w—wel—come to our—midst." And presently she saw that they were all saying things to her. They were all very friendly and cheerful. Some talked about the weather and some about the creek which was nearly dry; some about each other, and some about Angela herself. But each one said only one thing and said that over and over again.

At first, Angela stood at the edge of the creek where she had first come, too annoyed to go further. But now she began to move forward right into the water. Suddenly she thought of her dress and her shoes and stockings, and how wet they must be getting. She stopped and looked down, and behold! her feet had no shoes on, and a thin web had grown between her toes,

like frog's feet. Her dress was changing to a dark, dull, waterproof affair, not at all pretty, but very serviceable. So she could go right into the water, without fear of even hurting her clothes.

She made her way slowly through the sand and ooze, stopping almost every step to speak to some old frog or pat some little one on the head and tell him to be a good boy.

"You must always be good and mind your mother and never go wading!"—she began to say to one tiny little fellow who sat close by his mother. But she could say no more for all at once every frog there began to shriek at her in tones of anger and contempt—

"Never go wading;
Wo-ak! Wo-ak!
"Never go wading;
Wo-ak! Wo-ak!"

She did not understand why they were all shouting this queer song at her, so she went on:

"No, my dear little frog, you must never go wading for you will get your nice clothes all muddy, and cause your mother much trouble."

She knew this was a good thing to say to little folk, because a lady had said it to her one day. But the frogs did not like her teaching. They grew angrier and angrier and shrieked at her,

"Fiddle-sticks and molasses,
Knee-deep! Knee-deep!
Fiddle-sticks and molasses,
Knee-deep! Knee-deep!"

She began to understand that they were not so friendly as they had been at first, and to feel rather uncomfortable. So she said, "I'm afraid it is going to rain, so I will go back home, if you please," and she turned and ran as hard as ever she could. And it began to thunder and lighten and blow, but through all the noise of the storm as she ran, she heard the frog voices calling after her,

"Fraid of the water!
Oh, ho! Oh, ho!
"Fraid of the water,
Oh, ho! Oh, ho!"

Then there was a big crash of thunder and somebody's voice said, "My little girl had better go in out of the rain," and she opened her eyes wide, and there was her father standing beside her, and she was in the old chair on the porch.

"I believe you have been dreaming," said her father. But from the distant creek below the orchard she heard the croaking of the frogs and she was pretty sure their shrill voices were still saying something, if she could only make it out. But her own little toes were as pink as ever and just like any other little girl's toes, and her dress was not wet at all. So she believed that maybe she had been dreaming. But it was a queer dream, wasn't it?

(The end.)

SEVEN WONDERS

of the American Continent: Yellowstone National Park; The Great Shoshone Falls; The Columbia River; Mount Hood; The Big Trees of California; The Yosemite; Luc's "Cut-Off" across Great Salt Lake

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The Home Circle

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In the Last Days.

As we grow old, how softly, slowly close
The doors of sense, and shut us from
the world.
Like tender petals of some ling'ring rose
That, of a frosty night, have inward
curled!

Dim as the figures in a dream now pass
Those glitt'ring shows that stirred our
youthful hearts,
Poor, hurrying shadows in a misty glass,
Each but a moment seen ere it departs.

Nor sight, nor sound, nor taste of earth's
delights
Can longer please; these things are
past and gone.

The soul will put her quiet house to
rights,
And in the upper chamber watch the
dawn.

—James Buckham.

Household Economics.

JENNY SHELLY BOYD, BEFORE WELLSVILLE
FARMERS' INSTITUTE.

PURVEYING FOR A HOUSEHOLD.

The supply of food to a family should be based on the continuous demand of the body for nourishment. The animal organism is subject to a perpetual process of wear and repair, that necessitates a constant appropriation of new material that the body may maintain its integrity of composition and be supplied with energy for the physical and psychical activities of life. The adult must eat and digest a daily ration of food to keep himself in a condition of health. In such case the purpose of food is to repair the wastes of the body. In addition, it serves as the source of animal heat, muscular power, and nervous energy. The child who is increasing in weight and stature, uses a portion of his daily ration to build the new tissues formed during growth.

Man is urged to partake of food by the sensation of hunger. Appetite is very much under the influence of habit. A child will learn to like cod-liver oil. Certain foods are never relished until a taste for them has been developed by usage. Unusual preparations of food are intolerable to an eccentric taste. Some people will not eat eggs; others find milk disagreeable; others dislike certain kinds of meat and even delicious fruits are rejected by some tastes. Nevertheless, it is true that the majority of people have well-developed appetites for the ordinary standard wholesome foods. Appetite is modified by temperature. During cold weather, there is an increased desire for animal foods, specially fats. Cornmeal, beans, pork, and the rich pudding and cake make acceptable dishes for the winter table. In summer, lean meats, salads, frozen desserts, green vegetables, and fruit are preferred.

The family diet depends, mainly, on three objects—health, pleasure, and economy. They are not necessarily inconsistent with one another, yet under different conditions, either may claim first consideration. The individual who has created a persistent desire for alcoholic and narcotic stimulants, has no basis for his daily drink and cigar, in either health or economy. The person who has incurred disease by improper diet, must make health the primary basis of any food he may indulge in. To the family with a very limited income, economy must be the first consideration in the purchase of table supplies.

FOOD INGREDIENTS.

Nature has been lavish in her offerings of food to mankind. Animal food, vegetables, cereals, and fruits are each found in great variety. They vary with the climate, season of the year, and commercial facilities of the country. Chemical analysis has revealed that the various animal and vegetable foods are composed of certain nutritive elements. They are usually divided into four classes—protein, fats, carbohydrates, and mineral matters.

Water and inorganic salts are not usually considered food. That these substances are necessary to life has

been proven by scientific experiment as well as by the experience of daily living. Water is a very large portion of all food products. It permeates all the parts of the body. The desire for water is more imperative than the demand of the system for food. The water and mineral matters are not transformed in the body as are protein, fats, and carbohydrates. Hence, they need not be taken into account in estimates of nutritive value.

The protein is essential to the maintenance of life. Different varieties of proteins are found in animal as well as in vegetable foods. Their chemical composition is approximately the same. They are supposed to have equal nutritive value, outside of difference in digestibility. In meats, from 2 to 3 per cent, in milk from 6 to 12 per cent, in vegetables from 10 to 40 per cent of the proteins escape absorption. The protein compounds are the principal tissue-builders. They also serve as a source of heat and energy. While the protein may be converted into muscular power, the fats and carbohydrates can not take the place of protein in building and repairing the tissues.

The carbohydrates include the starches and sugars. Their nutritive value is due to the fact that they are destroyed in the body and liberate a certain amount of energy. Under fats, animal and vegetable oils are included. Their use is substantially the same as that of the starch and sugar. They are of special interest because the animal organism stores up its reserve of food material in the form of fat. The carbohydrates may be transformed into fat by the process of digestion. Fat is a more concentrated source of heat than starch and sugar. In excessively cold climates, it is the main fuel-giving food. In comparing food materials, the chemist finds that one pound of protein and one pound of carbohydrates will yield an equal amount of heat and mechanical power, while it will require over two pounds of either to equal one pound of fat.

The nutritiveness of food depends upon digestibility and concentration. Food is digestible when it yields readily its constituents to the digestive process, so that the food may be easily prepared for absorption and assimilation. The principal medium by which nutrient is carried through the absorbent membrane of the digestive canal is water. Hence the removal of water from viands impairs their digestibility. Drying, salting, over-frying and over-roasting render food less nutritious. Milk is an ideal food because it contains all the alimentary matters in right proportion to meet the nutritive demands of the system more readily than other food products.

Food is more or less concentrated, according as a given weight contains more or less matter capable of supporting life. It may be too concentrated as in nuts which are very rich in oil and protein. The almond contains 23.5 per cent protein and 50 per cent fat, while the best beef steak contains 18.5 per cent protein and 20.5 per cent fat. The nuts are very palatable, yet are used as a mere delicacy because the food is so concentrated that it is indigestible. (If the nut food preparations prove to be palatable and digestible foods, nuts may, in part, take the place of meat on the table.)

NUTRITIVE VALUES.

In reference to the nutritive value of various foods, scientists mention frequent experiments illustrating the fact that no single one is capable of supplying all the material necessary to maintain life and health. The normal appetite demands a varied diet and the markets supply abundant resources. It is usually safe for men in health to follow the appetite with regard to quantity and the tastes in regard to variety. It is with hesitancy that I submit a food list to intelligent readers. Believing the first consideration should be healthful nourishment, I have selected such food as would furnish nutritive matters in right proportion. Authorities differ as to what constitutes a daily ration. Of necessity they must as the needs of the physical organism depends so much upon its environment. Exercise, climate,

health, size, exposure, occupation—anything that affects the individual—will also modify the quantity of food required for his sustenance. In every particular, we can only claim for the food list an approximate accuracy. The chemical analysis is correct for the piece of food under observation, but may not be for another specimen of the same kind of food. Professor Atwater's ration for a man at moderate muscular work has been chosen as the basis for my calculations. Dietary for one man is given as .28 pound protein, .28 pound fat, and .99 pound carbohydrates. A family of five would require 1.4 pounds protein, 1.4 pounds fat, and 4.95 pounds carbohydrates. A family of five would need in thirty days 42 pounds protein, 42 pounds fat, and 148.5 pounds carbohydrates. The following list of food will yield the amount of protein, fat, and carbohydrates required by a family of five for one month:

Food	Amt. lbs.	Cost. \$	Protein. lbs.	Fat. lbs.	Crh. lbs.
Beef	58	7.12	9.3	9.7	
Ham	11	1.38	1.7	3.9	
Chicken	22	1.54	3.9	.3	
Turkey	112	1.14	1.9	.7	
Mutton	6	.75	.7	1.7	
Fish	7	.87	.9	.4	
Milk	120	3.00	4.3	4.8	5.6
Butter	15	3.00	1.5	12.7	.1
Eggs	18	1.80	2.7	1.9	
Lard	2	.20	..	2	
C'm cheese ..	8	1.20	1.1	1.4	.1
Bread	60	2.50	5.3	.9	33.7
Flour	15	.30	1.6	..	11.2
Graham	15	.30	1.8	.3	10.7
Cornmeal	5	.05	.4	.2	3.6
Oatmeal	4	.20	.6	.3	2.7
Crackers	4	.40	.4	.3	2.7
Potatoes	90	1.50	1.8	..	16.1
S. potatoes ..	20	.40	.3	..	5.2
Rice	3	.20	.2	..	2.4
Beans	4	.20	.9	..	2.3
Green peas ..	12	1.20	.5	..	1.9
Green corn ..	6	.30	.2	..	.8
String beans ..	6	.30	.1	..	.5
Cabbage	6	.25	..	..	.3
Tomatoes	6	.30	..	..	.2
Onions	1	.05	..	..	..
Fruit	120	10.00	.6	..	16.8
Sugar	25	1.25	..	..	24.4
Maple syrup ..	8	.65	..	..	5.8

CONDIMENTS.

To the above list of nutritive foods must be added tea and coffee, pepper, vinegar, mustard, spices, flavoring extracts, and other articles of this class. They have no decided influence on nutrition. Tea and coffee serve as a stimulant to the nervous system. I think the nervous system should be taught to do without stimulants. However, because their use is so universal and good authority believes a moderate amount of coffee to be a real aid to the digestion, they must have a part in the expense of the food supply. It is said of coffee that it relieves fatigue and increases mental activity; that habitual use renders coffee almost a necessity; that it produces persistent wakefulness; that the use of coffee permits a reduction in the quantity of food below the standard which would otherwise be necessary to maintain health.

The condiments and flavoring articles may promote the secretion of the digestive fluids. However, their principal use is to render food more palatable. Salt should be excepted as it is one of the mineral matters essential to right nutrition.

To the expense of purchasing food must be added the cost of preparation in fuel and service. We would then have the cost of feeding a family of five for one month as follows:

Nutritive foods.....	\$42.35
Coffee and tea.....	1.00
Condiments, etc.....	1.00
Fuel and ice.....	6.00
Servants' wages.....	8.00
	\$58.35

In reference to the prices quoted in the above list of food, I should say that I have used Western village retail prices, purposing to give an average for the year. As to fruit, the cost depends so much on the yield of a season that the estimate given has been based on the price of fancy stock in canned goods. My experience is that the season's variety of fruit may be canned at home, furnishing fruit for the winter table in much better quality and at much less cost than can be purchased ready to serve.

The cost of bread can also be reduced as well as its quality improved by baking it at home, always assuming that the cook is skilled in all the arts of cookery.

Nearly all of the foods in the list can be bought throughout the year. If vegetables can not be secured fresh, they can be bought in cans. However,

Nervous Women

Their Sufferings Are Usually
Due to Uterine Disorders
Perhaps Unsuspected

A MEDICINE THAT CURES



Can we dispute the well-known fact that American women are nervous?

How often do we hear the expression, "I am so nervous, it seems as if I should fly;" or, "Don't speak to me." Little things annoy you and make you irritable; you can't sleep, you are unable to quietly and calmly perform your daily tasks or care for your children.

The relation of the nerves and generative organs in women is so close that nine-tenths of the nervous prostration, nervous debility, the blues, sleeplessness and nervous irritability arise from some derangement of the organism which makes her a woman. Fits of depression or restlessness and irritability. Spirits easily affected, so that one minute she laughs, the next minute weeps. Pain in the ovaries and between the shoulders. Loss of voice; nervous dyspepsia. A tendency to cry at the least provocation. All this points to nervous prostration.

Nothing will relieve this distressing condition and prevent months of prostration and suffering so surely as Lydia E. Pinkham's Vegetable Compound.

Mrs. M. E. Shotwell, of 103 Flatbush Avenue, Brooklyn, N. Y., writes:

"I cannot express the wonderful relief I have experienced by taking Lydia E. Pinkham's Vegetable Compound. I suffered for a long time with nervous prostration, backache, headache, loss of appetite. I could not sleep and would walk the floor almost every night.

"I had three doctors and got no better, and life was a burden. I was advised to try Lydia E. Pinkham's Vegetable Compound, and it has worked wonders for me.

"I am a well woman, my nervousness is all gone and my friends say I look ten years younger."

Will not the volumes of letters from women made strong by Lydia E. Pinkham's Vegetable Compound convince all women of its virtues? Surely you cannot wish to remain sick and weak and discouraged, exhausted each day, when you can be as easily cured as other women.

the resources are many times greater than the list of foods given. The principle of combining various foods is the most important thing about the combination made. The purpose has been to choose food of good quality, of sufficient quantity, and in pleasing variety.

In reference to the quantity of food, where small children are three members of the family, there is probably an excess of food required. A servant could easily be fed. Where the three children are grown, the occasional guest could be entertained without extra outlay. As there is an inevitable table waste, the list will be allowed to represent approximately the needs of the family.

It will be observed from the table that a daily dietary for five will include three pounds of meat (edible portion, there is a loss of twenty-four pounds in the 114 pounds given), two pounds of bread, one-half pound of butter, three pounds of potatoes, four pounds of milk, thirteen ounces of sugar, four pounds of fruit, two pounds of vegetables and yet other foods to add an occasional variety. There are in variety, six kinds of meat, ten kinds of vegetables, four kinds of cereal products and such variety of fruit as would be desired, besides there would be all the possible variety of cooking and serving.

PREPARATION OF FOODS.

With our food purchased the next problem is to prepare it for ingestion and digestion. The application of heat to animal and vegetable substances changes the character of the food, making it more palatable and more digestible. In cooking vegetables and cereals, the most important care should be taken that the starch be well cooked. The starch cells absorb wa-

ter and the greater number of them burst while being cooked. This disintegration of the starch cells is essential to the perfect digestion of starchy foods.

In cooking meat, it is necessary that the external albumen be quickly coagulated by heat so that the juices and flavor of the meat be retained. Hence broiling and roasting are the simplest, most economical, and daintiest method of cooking tender beef, mutton and veal. In fried and boiled meat, there is a loss of both digestibility and nutriment. If tough meat must be prepared for the table, minced meat in stews, hamburger steaks and meat-loaf, are probably the most desirable preparations. Fowls and pork should be cooked until well done. Frying and roasting are the most favored methods, though stewed chicken and boiled ham are very acceptable dishes. When frying meat or vegetable, it is important that the fat be hot enough so that the fried food may come out of its immersion in fat golden brown in color, crisp, and free from fat.

The stewing of vegetables, broiling and roasting of meat are the most hygienic method of serving such food. They are also the most economical in reference to the food in hand, because its nutriment is best preserved and most easily digested. But the markets often furnish tough meat and not perfectly flavored vegetables. The art of cooking is needed to make them tender and palatable. A good sauce with a boiled vegetable and a rich gravy with a fried steak helps the hurt the palate feels at loss of a perfect dish.

The main use of the flour is to be converted into light, wholesome bread. A dainty, flaky pie, a light cake, and rich pudding may occasionally grace the table. The most economical thing to do with a tough pie-crust, soggy cake, and heavy, dark bread is to use them for fuel. To feed them to a family is to invite the expense and anxiety of ill-health.

The milk and eggs and sugar and fruit will be used in preparing desserts. Milk will be used to drink. Eggs will often appear on the table in place of meat and both be used to prepare dishes out of the vegetables and cereals provided.

The simplest in serving when finest in quality is the elegant method of feeding a family. Where simplicity in cooking is the rule, children over 3 years thrive well on the food served at the family board. They need meat, bread and butter, vegetables, fruit, eggs, and milk. The very rich, highly-spiced, elaborate dishes are not best for either adult or child, but are most injurious to children.

We feel the evils of our present system of industry, when buying provisions for the household. Every family should have an income that would secure them good, wholesome food. Yet in the necessity for making a small amount of money secure a large amount of nutriment, we are offered impure foods and food preparations, that have as their only purpose reduction in price. The farmer in growing food, the packer in storing it, the manufacturer in preparing it, the grocer in selling and the cook in serving should all cooperate to make our food perfect in quality. As it is, the producer desires above all else to realize money on his product, while the consumer's main object is to save money on his purchase. Could there be placed back of the consumer a good income, there would be such a demand for pure food, that food investigators and pure-food agitators would lose their calling.

But this is a digression. We must feed our families on the return in wages the men can receive for their industry. It is estimated that the majority of the families in America do not have over \$500 as a yearly income. Half of this or more than half is used to feed the family. There is another considerable number who have \$800 to \$1,000 a year.

Any family with an income less than \$1,000 could hardly afford to live in accordance with the food list already given. We submit another list of food that will yield in nutriment the de-

sired 42 pounds of protein, 42 pounds of fat, and 148 pounds of carbohydrates.

NUTRITIVE FOOD \$30 A MONTH.

Food.	Amt. lbs.	Cost.	Pro. lbs.	Fat. lbs.	Carb. lbs.
Round Steak	50	\$5.00	10.2	5	...
Bacon	10	1.00	1	8.3	...
Ham	10	1.25	1.7	3.9	...
Chicken	8	.75	1.9	2	...
Lard	7 1/2	.75	...	7.5	...
Eggs	18	1.80	2.7	1.9	...
Butter	7 1/2	1.50	...	5	...
Milk	120	3.00	4.3	4.8	5.6
Skim-Milk Cheese	5	.50	1.9	3	...
Bread	75	3.00	6.6	1.3	42.2
Crackers	8	.80	...	7	5.5
Flour	20	1.00	1.1	1	7.4
Corn Meal	20	.25	1.8	7	14.1
Oatmeal	8	.40	1.2	5	4.7
Rice	6	.30	...	4	4.7
Beans	8	.40	1.9	1	4.7
Peas	6	.60	1.6	1	3.4
Potatoes	120	1.50	2.5	...	21.5
Apples	60	1.00	...	...	8.4
Sugar	25	1.25	...	...	24.4
Syrup	2	.10	...	...	1.5

The food in the above list is wholesome and nourishing. By using a cheaper quality of coffee we would have a living at the following expenditure of money:

Nutritive food	\$25.25
Condiments, Etc.	.50
Coffee	.75
Fuel and Ice	4.50
Total	\$31.00

From such resource of food we would have as a daily basis: 2 1/2 pounds meat, 4 pounds milk, 4 pounds potatoes, 1 1/4 pounds bread, 1 pound apples, and 13 ounces sugar. There is then left eleven varieties of articles from which could be prepared a daily variety in the additional dishes required to make out the daily menu.

The grade of meat is inferior to that given in first list, yet there is no more nutriment in the protein and fat of sirloin than in that of round. The dry vegetable products, as beans, rice, oatmeal, and cornmeal have been increased in quantity because of their great nutritive value and low cost. The green vegetables and fruit are very much less, but on the whole a highly nutritious diet is offered for the month from which a skilled cook could serve very palatable meals.

At still smaller outlay of money the 42 pounds of protein, 42 pounds of fat, and 148 pounds of carbohydrates can be secured from the following class of foods:

Food.	Amt. lbs.	Cost.	Pro. lbs.	Fat. lbs.	Carb. lbs.
Bacon	15	\$1.50	1.3	12.4	...
Beef	60	3.60	10.2	8.2	...
Butter	10	1.50	1	8.5	...
Lard	6	.60	...	6	...
Skim-Milk Cheese	5	.50	1.9	3	...
Sugar	20	1.00	...	...	19.6
Syrup	3	.15	...	...	2.1
Beans	80	3.00	13.8	1.2	35.5
Corn-meal	30	.25	2.7	1.1	21.2
Oatmeal	20	.80	3.1	1.5	17.6
Flour	50	1.00	5.5	...	37.5
Potatoes	60	.75	1.3	...	10.7

Our monthly expense for food would then stand:

\$20 A MONTH.	
Nutritive food	\$16.15
Coffee	.45
Pepper and salt	.10
Fuel	3.00
Total	\$19.70

The beef is such as can be bought for six cents a pound, and the butter at fifteen cents. There are two and one-half pounds of meat for each day but a large per cent of the protein is derived from the cereals and vegetables. The main defect of the diet is the want of fruit and fresh vegetables. The daily food furnished would be a tolerable diet for the winter. During the summer, the private garden would furnish vegetables at no extra cost, where the requisite labor could be found in the home. When apples are cheap, they can be added to the list.

A number of experiments in combining food would possibly yield a better list of foods at the same or even less cost. Of the tables submitted, this can be said, that they are such combinations of pure food as are required by five persons in one month.

WASTE.

The common sayings that "the average American family wastes as much food as a French family would live upon" and that "the wife throws as much food out at the back door as the husband can bring in at the front door" are exaggerations of a very disagreeable truth. Could we collect all the food wasted in each month for one year, it would prove to be large beyond all expectation.

In our endeavor to please the palate,



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notable for bright beautiful patterns.
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we pay high prices in the market, instead of making delightful menus by skillful cooking and tasteful service.

The remedy of our extravagance in buying and handling food must be sought in education regarding the nutritive value of foods and in training of those who are to prepare the food for the table.

However justly we may lament real waste, it is not so disastrous to bodily vigor as a deficiency in food. It is an unthrifty thrift which imperils vigor of mind and body to affect a pecuniary saving. There can be no doubt of the value of a highly nutritive diet. The under-fed child is not active in play, will not respond to intellectual training, and is an easy victim of disease. It is the well-fed children that have so much physical and mental energy that they exhaust the resources of the ordinary individual who undertakes to keep them busy for one day. The cry of hunger is most pitiful in children, yet it saddens one to see the strength and intelligence of men and women wasting away for want of sufficient nourishment.

Waste of food is no better explanation of starvation than laziness is of unemployed labor. The problem of household economics is one with the greater problems of social economy.

Nature is bounteous in her return for labor. She grows a wonderful variety of delicious and nutritive foods. She is prodigal with her supplies and wastes more than the housekeepers. Let men solve the problem of distributing her yield of good things. Then women, unhampered by petty economy, may feed the family with such care as to quality and nutrition, that the race will not only improve its physical vigor but will manifest a higher intellectual and moral character.

Club Department

OFFICERS OF THE STATE FEDERATION OF WOMEN'S CLUBS.

President.....Mrs. May Belleville Brown, Salina
Vice-President.....Mrs. L. H. Wishard, Iola
Cor. Secretary.....Mrs. N. I. McDowell, Salina
Sec. Secretary.....Mrs. W. D. Atkinson, Parsons
Treasurer.....Mrs. H. B. Asher, Lawrence
Auditor.....Mrs. Grace L. Snyder, Cawker City

Our Club Roll.

Mutual Improvement Club, Carbondale, Osage County (1896).
Give and Get Good Club, Berryton, Shawnee County (1902).
Women's Literary Club, Osborne, Osborne County (1902).
Women's Club, Logan, Phillips County (1902).
Domestic Science Club, Oage, Osage County (1896).
Ladies' Crescent Club, Tully, Rawlins County (1902).
Ladies' Social Society No. 1, Minneapolis, Ottawa County (1888).
Chaltee Club, Highland Park, Shawnee County (1902).
Cultus Club, Phillipsburg, Phillips County (1902).
Literature Club, Ford, Ford County (1903).
Babeau Club, Mission Center, Shawnee County, Route 2, (1899).
Star Valley Women's Club, Iola, Allen County (1902).
West Side Forestry Club, Topeka, Shawnee County, Route 8, (1903).
Fortnight Club, Grant Township, Reno County (1903).
Progressive Society, Rosalia, Butler County (1903).
Pleasant Hour Club, Wakarusa Township, Douglas County (1899).
The Lady Farmers' Institute, Marysville, Marshall County (1902).
Women's Country Club, Anthony, Harper County (1902).
Taka Embroidery Club, Madison, Greenwood County (1902).
Mutual Improvement Club, Vermillion, Marshall County (1903).
Prestis Reading Club, Cawker City, Mitchell County (1902).
Cosmos Club, Russell, Kans.

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

PROGRAM OF FAMOUS WOMEN.

Queen Esther.

Roll-call—Great women in the Bible.
I. Xerxes and his story in Babylon.
II. The story of Esther, rendered from the biblical account.

III. Character of Esther.

The Bible is called the library of the best literature of the world; and it is to this library that we must go for most of the information about this heroine of the Hebrews.

The Ahasuerus who was king in the book of Esther is supposed to be the Xerxes of Greek history, who went down to Babylon on a mission of conquest. The story of his stay there will be found in narratives of Greek history.

The book of Esther is a piece of as fine dramatic literature as can be found. Condensed and put into forms of modern expression it will make a story of surpassing interest. The character of Esther must be judged from the part she took as the heroic deliverance of her people. One who has the ability to read between the lines of a bare account can make of this a very effective piece of character-drawing.

The Year's Work in the Cosmos Club.

FLORENCE SHAW KELLOGG.

The Cosmos Club is doing very nicely and has just elected officers for the new year, as follows: President, Mrs. Frances L. Dawson; vice-president, Mrs. Allie E. Brock; secretary and treasurer, Mrs. Zoa E. Hoover; critic and parliamentarian, Mrs. Florence Stephens. The membership is reduced from 50 to 28; but as it is the workers who are left, while those who joined from curiosity, fancy, or for the social part, have dropped out, there is little real loss. During the season just closed, the program was diversified, there being three "musicals," one evening being devoted to "latest things" in science and literature. There was a "Nature" evening, a "St. Louis Fair" evening, an "Emerson" evening, and a "Japan" evening, an "American art" a "Fiction," two "Shakespearean" evenings, an "Eminent women of America" evening, a "Housekeepers" evening, a "Riley and Field" evening, two social evenings, and another evening without special title, for which Mrs. Walbridge, an occasional contributor to the KANSAS FARMER, presented a fine paper on the "Privilege of Being a Woman," and the writer another one on "Educated Motherhood."

I have seen none of the papers for the different evenings, excepting Mrs. Walbridge's, but I am told they had many very fine, earnest papers; and the interest and enthusiasm were well sustained and the season's work was very beneficial to all who shared it.

The coming season, they are to take up the study of English literature from Chaucer down, omitting the Shakespearean era, as they have already made quite a study of that period. The meetings begin the latter part of September and continue until the last of May, occurring fortnightly.

The persistence of the Jul. Andrae & Sons, 823 W. Water St., Milwaukee, Wis., in advertising their farm telephone systems during the past four years has met with such remarkable success that the Andrae people are now advertising in over 150 agricultural publications, whereas, four years ago they started advertising their farm systems in only nine agricultural papers. The Andrae people advertise throughout the entire year and make a very liberal proposition to farmers. They send a large catalogue which explains fully how farm telephones are put in, what they cost and how they are operated, absolutely free to any one who will write for it.

For Delightful Coast Country Homes.

For fertile rice lands, sugar lands, truck lands, Matagorda County, with three railroads, rapidly developing with good people, schools, churches, the land of opportunity, address Board of Trade, Bay City, Texas.

COMMENCEMENT AT THE AGRICULTURAL COLLEGE.

(Continued from page 643)

ment employ at Washington, than from any other institution of any kind in the United States, and a large number of them are to be found as teachers of agriculture and agricultural science in the State institutions of other States.

The exercises of commencement week began on Sunday, June 11, with the delivery of a baccalaureate sermon in the new college auditorium by the Rev. T. H. McMichael, president of Monmouth College, Monmouth, Ill. This was followed by a recital by the music department on Monday evening, class day exercises on Tuesday evening, the alumni address by Prof. F. A. Waugh, of the Massachusetts Agricultural College, Amherst, Mass., on Wednesday evening, and the annual address by Governor Hoch on Wednesday morning, followed by the military drill and band concert in the afternoon and the alumni banquet in the evening.

Professor Waugh is a graduate of this institution, and his address before his fellow alumni was the best that has been delivered in many years. The KANSAS FARMER will print this address in an early issue.

The climax of the week was reached on the morning of Thursday in the delivery of the annual address by Governor Hoch and the presentation of diplomas to the graduates. Governor Hoch's address was a masterpiece and served not only to bring him in closer touch with the people of the State through the 3,000 students and visitors who heard him, but the occasion gave him an opportunity to become better acquainted with one of the most important educational institutions in the State. With the Governor's permission the KANSAS FARMER expects to print this address in the near future to the satisfaction of all who listened to him, as well as the pleasure and instruction of those of our readers who were unable to be present.

There were perhaps 5,000 people in attendance upon the exercises of commencement day and it was noticeable that a large proportion of them had come from a distance. The completion of the new auditorium with its large seating capacity insured the visitors a place to sit in comfort during the exercises and the announcement that Governor Hoch would deliver the annual address served as a powerful attraction to visitors who might not otherwise have attended the exercises.

The writer has had a more or less intimate acquaintance with this institution for the past twenty-six years and desires to say that the exercises of commencement week this year were characterized by the largest crowd and the greatest evidences of successful work by the college that has come to his notice. Whatever may be said about weakness in any department of the college (and there are doubtless weak departments) it must be admitted that the success of the institution as a whole largely overshadows the weak places, and when the institution is on dress parade, as it always is during commencement week, the visitor finds little to criticize and much to commend.

Endowed by the Nation and maintained by the State, this great institution has for its prime object the training of the youth of Kansas in those fields of usefulness which make for good citizenship. It is an industrial school in which some training in the elements of the arts as well as the sciences is given, but its whole object is to make men and women who shall be good citizens and not mere tradesmen.

Connected with this great institution is the experiment station which is the advanced school for the older men and women of the State who have passed their school days and whose experience has left them in need only of new facts and new knowledge which are thus provided for them by the Nation and which they could obtain in no other way so easily and so cheaply.

As it is the purpose of the KANSAS

FARMER to give its readers a complete report of the workings of both the Agricultural College and Experiment Station, together with the results accomplished and the problems that are now being solved, we confine ourselves at this time to a brief statement of the facts concerning commencement week and desire to congratulate the faculty, the students and the people of Kansas and the Nation on the success of which these commencement exercises were an index.

Herewith we give the class-roll and theses of the graduates of 1905 who now go forth to win success, equipped with all that could be given them by the largest agricultural college in the world.

Harvey Adams, "Construction and Test of an Electric Clock." Edward E. Adamson, "Arc Lamps." Elva Veola Akin, "Power of Habit." Pearle Akin, "The History of Music." Nellie Wilhelm Baird, "The Relation of the Physical Body to the Mental Body." Walter Raymond Ballard, "Poisonous Insects." Jessie Mary Ballou, "Textile Weaving, Primitive and Modern." Frank Everett Balmer, "Farm Buildings and Location." Asa William Barnard, "Efficiency Tests of a Twenty-Horsepower Avery Traction Engine." Atwood N. H. Beeman, "The Counter Reformation in the Catholic Church (16th Century)." Herbert F. Bergman, "The Winter Habit of Plants." C. Paul Blachly, "Test of Type H, Form 'C,' General Electric Transformer." Helen Elizabeth Bottomly, "Violet and Pansy Culture." Walter J. Brant, "The Design of a Twenty-Five Horsepower Gasoline Traction Engine." Harvey A. Burt, "Inductive and Non-inductive Tests on Type A. T. B., Form 'E,' General Electric Company Generator." Eva Maggy Burtner, "Meat—Its Cookery and Digestion." Ray Arthur Carle, "Arc Lamps." August Belmont Carnahan, "Efficiency Tests of a Twenty-Horsepower Avery Traction Engine." Albert F. Cassell, "Pus Organisms." Joseph Griffith Chitty, "Crops Adapted to the Arid Regions." L. Ethel Clemmons, "Household Inventions." Mary Margaret Cole, "The Modern Cottage." Andrew D. Colliver, "The Purity and Vitality of Grass Seed." Mary P. Colliver, "The Bacteria of Yeast." Gertrude Matilda Conner, "The Mental and Moral Aspects of Manual Training." Forrest Leslie Courter, "Comparative Rentals of Land." Bertha Cowles, "Dietary Studies of Three College Girls." Charles William Cummings, "Relation of Habit to Thinking." Jules Cool Cunningham, "Nursery Stock and Its Effect Upon the Orchard." Mamie Grace Cunningham, "Jelly Experiments." Edith Nellie Davis, "Condiments and Spices—Their Dietetic Value and Adulterations." Guy R. Davis, "The Study of Draft Problems." Minnie Estella Deibler, "The Planning of Country Home Grounds." Ula May Dow, "Catering for Two Hundred." Olive B. Dunlap, "The Bacteria of Cooked Meats." Mary Josephine Edwards, "The Farmer's Small Fruit Plantation." William K. Evans, "Economical Rations for Beef Production with Feeds Adapted to Western Kansas." Scott Stuart Fay, "Relative Calorific Value of Coals on the Kansas Market." Lathrop Weaver Fielding, "Test of Type H, Form 'C,' General Electric Transformer." Lena Finley, "The Economic Value of Domestic Science." Frances Walker Fish, "Food Adulterants." Charles Wesley Fryhofer, "Temperature Effects Upon the Bacterial Flora of Milk." Robert Anson Fulton, "Inductive and Non-inductive Load Tests on Type A. T. B., Form 'E,' General Electric Company Generator." George W. Gasser, "Relation of Fraternities to Educational Institutions." William H. Goodwin, "Birds and Flowers in Tennyson's Poetry." Herbert Revere Groome, "Pyogenic Bacteria." Margaret Helen Haggart, "Cereal Breakfast Foods." Otto Albert Hanson, "Insect Parasitism." William H. Harold, "Inductive



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and Non-inductive Load Tests on Type A. T. B., Form 'E,' General Electric Company Generator." Henry P. Hess, "A Modern Telephone Exchange." Frederick Earl Hodgson, "Tests of a Single-Phase Motor." Jessie May Hoover, "Starch." Charles Frederick Johnson, "Bacteria Producing Tubercles on the Roots of Leguminous Plants." James Johnson, "Tests of a Single-Phase Motor." Winifred Mae Johnson, "The Farmer's Front Yard." George Henry Kellogg, "Kansas Forestry." Mildred I. Kirkwood, "Olympic and Modern Games." Nina H. Kirkwood, "Plans for Front-Yard Planting." George Otto Kramer, "The Sheep Industry in Kansas." William C. Lane, "Test of General Electric 75 K. W. Generator, Type A. T. B." Daniel Andrew Logan, "Establishing the National Boundaries." Ed. Logan, "Quantitative Analysis of the Bacteria Found in the Air of a Dairy Barn and in the Milk Under Varying Conditions." Rhoda C. McCartney, "The Evolution of a College Student." Nellie Reeder McCoy, "Bacteria of Long Skirts." Frede E. Marty, "The Mental Aspect of Housekeeping." Richard Meyer, "Comparative Study of Soils." Mary Mudge, "Libraries and Their Uses." Lewis J. Munger, "Kansas Feeds for Sheep." Rachel Gertrude Nicholson, "Kitchen Gardening." Jens Nygard, "Relative Fuel Value of Coals on the Kansas Market." Nell Paulsen, "Planning and Furnishing of the House." Leonard Marion Peairs, "Protective Coloration in the Coleoptera." Luther B. Pickett, "Grapes for Home and Market." Charles Holcomb Popenoe, "The Kangaroo Rats." Fanny E. Reynolds, "Hygienic Disposal of Household Wastes." Arthur J. Rhodes, "Tests to Determine Form of Lath Tool to Remove Maximum Metal with Minimum Power from Gray Iron." Kate L. Robertson, "Intellectual Aspect of Manual Training." Garfield Shirley, "Farm Hygiene." Walter Emory Smith, "Comparative Study of Soils." Crete Spencer, "Home Architecture." William Wesley Stanfield, "A Study of Leguminosac Bacteria and Experiments Relative to Adapting Them to Non-leguminous Plants." Blanche Stevens, "A Boarding-House Dietary." Effie L. Stewart, "The Psychology of Music." Mary Catherine Strite, "The Origin, Government and Doctrines of the Leading Protestant Churches in England and the United States." Jessie A. Sweet, "Comparison of Pasteurized and Non-pasteurized Milk." Charles Bartholow Swift, "Quantitative Analysis of the Bacteria Found in the Air of a Dairy Barn and in the Milk Under Varying Conditions." Charles L. Thompson, "A Study of the Adaptation of Cereals and Forage Crops in Kansas." John Bert Thompson, "Some Observations on the Propagation of Plants from Hard-wood Cuttings." Roger S. Thompson, "Efficiency Tests of a Twenty-Horsepower Avery Traction Engine." Claude B. Thummel, "Tests of Kansas Cements and Concretes." Alonzo F. Turner, "Two Insect Pests of the Forest Tree." Grace E. Umberger, "Cleanly House-

keeping." Harry Umberger, "Soil Moisture in Its Relation to Crops." Fred VanDorp, "Practical and Theoretical Feeding of Laying Hens." Rebecca Rees Washington, "Adulteration of Foods." Earl Wheeler, "Test of General Electric 75 K. W. Generator, Type A. T. B." Inez Wheeler, "Yeast." Clarence H. White, "Tensile Strength of Wool." Wayne White, "The Percheron Horse." William J. Wilkinson, "An Architecture Hall for the Kansas State Agricultural College." Frederick W. Wilson, "Conformation of a Horse in Relation to Gait and Draft." George Heber Willson, "The Advancement of Education in Agriculture." George Wolf, "A Modern Telephone Exchange." (Mrs.) Grace Enfield Wood, "Adolescence, with Special Reference to Distinctions of Sex." Jay G. Worswick, "The Extermination of Prairie-Dogs in Kansas."

GRADUATE.

Bessie Belle Little, B. S., 1891, "Function of Leucocytes and Their Diagnostic Significance in Pathological Processes." Walter E. Mathewson, B. S., 1901, "The Wheat Proteids."

WASHBURN COLLEGE COMMENCEMENT.

Washburn College, Topeka, Kans., celebrated its fortieth anniversary last week. It graduated a fine class of twenty-six young Kansans whose training along lines that, in the past, have produced great men will not fail to give results of which the State will, doubtless, be proud. These young men and women have not learned trades or professions but have devoted their labors to the acquisition of general knowledge and to the development of their powers preparatory for the "strenuous life" and the "square deal."

Many parents and many young people feel that they can not afford the time nor the expense to acquire education other than that which may be applied to a useful purpose. This view is entirely correct for those who, for any reason, can not take both the general and the special education. Professional schools are indispensable. The training and development which they give are beyond valuation in dollars and cents. But the young person who has been able to precede this special training with a general course, while he may be later in life in finding his true measure with his fellows, is likely to attain the greater usefulness and eminence.

The moral and religious (non-sectarian) elements in education possess values to the individual and to society which are likely to receive greater appreciation as necessity compels closer study of social conditions and their tendencies and the forces which act upon them. In their attention to this part of the education of the young, the denominational colleges of Kansas are doing a great work. At Washburn, this element of education is conducted on broad lines and without fear in consideration of any of the questions which arise in rational minds.

The closing exercises of the year

PILES

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were characterized by several able addresses by eminent men from various parts of the United States. Of these none was more appreciated than that of President King, of Oberlin College, Oberlin, Ohio, to the graduating class. In simple language this address traced the relations of thought to action with especial reference to the completion of thought by action and the effect of action upon the mental and moral powers.

The "college spirit" gained a distinct impetus at the alumni banquet. Formerly, this annual banquet was participated in by the graduates of Washburn College only. This year the invitation was extended to graduates of all colleges, their wives and husbands. The alumni of the several institutions were grouped as much as possible. About 300 sat down in the elegant dining-room of the Throop Hotel. The old college songs and the yells made the occasion a lively one. Several Kansas colleges were represented. The largest delegation, aside from that of Washburn, was from the University of Michigan.

The toasts displayed loyalty to each alma mater and a generous rivalry. Those who participated in the festivities will, without doubt, favor many returns of the annual alumni banquet at the capital city.

HAYING BY TELEPHONE.

Mr. A. H. Bates, whose farm is five miles west of Topeka, relates how, with the help of Uncle Sam's weather service, the telephone, and, perhaps, other modern conveniences, he succeeded in getting his first crop of alfalfa all in the barn before the rain began to fall last Thursday evening. He had read Observer Jennings' forecast of "probable showers to-night," and was rushing the hauling as rapidly as possible. Just as the first load after noon had been placed in the barn, the hook which attached the horsefork pulley under the comb of the barn roof broke. If a man were sent to town for a new one, so much time would be consumed that it would not be possible to get all of the hay in before night. But Mr. Bates stepped to the telephone and asked the dealer in Topeka to send out a boy with the desired hook, "and send him quick." By the time the wagons were again loaded the hook was at the barn. While the last forkful of the last load was passing through the door a loud clap of thunder broke overhead and just as the fork dropped its load the heavy drops of rain beat upon the roof.

The telephone paid for itself that day.

Crop Conditions June 1, 1905.

Preliminary returns to the Chief of the Bureau of Statistics of the Department of Agriculture on the acreage of spring wheat sown indicate an area of about 17,613,000 acres, an increase of 472,000 acres, or 2.8 per cent, over the estimate of the acreage sown last year.

The average condition of spring wheat on June 1, was 93.7, as compared with 93.4 at the corresponding date last year, 95.9 on June 1, 1905, and a ten-year average of 94.4.

The average condition of winter wheat on June 1 was 85.5, as compared with 92.5 on May 1, 1905, 77.7 on June 1, 1904, 82.2 at the corresponding date in 1903, and a ten-year average of 79.2.

The total reported area in oats is about 27,688,000 acres, an increase of 42,000 acres, or two-tenths of 1 per cent, in the area sown last year.

The average condition of oats on June 1 was 92.9, against 89.2 on June 1, 1904, 85.5 at the corresponding date in 1903, and a ten-year average of 90.1.

The acreage reported as under barley is less than that sown last year by about 172,000 acres, or 3.4 per cent.

The average condition of barley is 93.7, against 90.5 on June 1, 1904, 91.5 at the corresponding date in 1903, and a ten-year average of 89.9.

The acreage under spring rye shows a reduction of 3.8 per cent from that sown last year.

The average condition of rye is 93.6, against 86.3 on June 1, 1904, 90.6 at

the corresponding date in 1903, and 88.9, the mean of the corresponding averages of the last ten years.

R. W. Furnas Is Dead.

The following graceful tribute to the memory of Nebraska's Grand Old Man is taken from the Breeder's Gazette and is here reproduced with the assurance that it will have the hearty endorsement and heartfelt "Amen" of every one who knew the man and his work:

Ex-Governor R. W. Furnas, for twenty-one years secretary of the Nebraska State Board of Agriculture, died at Lincoln on June 1, aged 81 years. He was one of the remarkable characters produced by the wonderful development of the West. Born in Miami Co., O., his early life as teacher, printer and farmer was not especially marked by the acquisition of wealth which ordinarily stands as evidence of a successful career, and in the spirit of a pioneer he landed at Brownville, Neb., as a comparatively young man with only a few cents in his pocket. Perceiving the wonderful possibilities of the country he set to work to make himself useful with a determination, industry and intelligence that won him high rank among the pioneers to whom the West owes so much of its greatness. As a farmer (his specialty being horticulture), as an Indian fighter, Governor of the State, organizer and officer of horticultural, agricultural, historical and educational associations, Gov. Furnas left an indelible impress for good on the State. He possessed peculiar ability as an organizer and especially of exhibits of the products of the soil. His genius in this direction found expression at such expositions as that at New Orleans and the Columbian at Chicago, where Nebraska's resources were set forth before the world in very impressive fashion. The long and creditable record of the Nebraska State Fair under what at times seemed quite adverse circumstances is largely due to the indomitable energy, the industry and tact of Secretary Furnas. He knew how to use men as well as to display products, and his personality was so cordial and charming that he numbered as friends nearly all with whom he came in contact.

"Governor Furnas was one of the youngest old men ever in public life. Possessed of pronounced bodily vigor, he was even more noted for his perennial activities of mind. He never fell into the fixed habits of mind that usually mark old age, but was ever youthful and alert mentally. Governor Furnas was spared far beyond the allotted span of life to round out one of the most useful careers to agriculture, education and the State ever permitted to a man. He died full of years and honors, a grand old man, simple in his life, unselfish in his ambitions, unflagging in his industry and ever loyal to the highest interests of his time."

BLOCKS OF TWO.

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

Special to Our Old Subscribers Only.

Any of our old subscribers who will send us two NEW SUBSCRIPTIONS at the introductory rate of fifty cents each, will receive any one of the following publications as the old subscriber may choose, viz., "Woman's Magazine," "Western Swine Breeder," "Vick's Family Magazine," "Blooded Stock," "Kimball's Dairy Farmer," or "Wool Markets and Sheep."



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After years of experimenting we have formulated a paste, which when applied to any portion of the body, suffering from rheumatism will immediately relieve, and eventually cure the most persistent case of rheumatism. If you are a sufferer, and among the first to answer this announcement, we will send you, by prepaid mail, a box of this wonderful oil, all that is asked in return, is the privilege of referring to you (when cured) in corresponding with prospective customers in your locality.

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You will find it a better machine oil than anything you have been buying for 35 cents to 45 cents per gallon. Premium oil is a natural oil, greenish black in color. There is no made oil that is superior to Premium oil for engines, shafting, shops, elevators, thrashing machines, and farm machinery. It will not gum, has good body, not affected by hot and cold weather as most oils are. If a farmer you say you will not need as much as a barrel. Get your neighbor to take half of it. But remember \$3.50 for a 50-gallon barrel, and the empty barrel is worth at least \$1.00, gives you oil at less than 6 cents per gallon at your railroad station. You can use 6 cent oil in a dozen ways where you would use 35 cent oil in one. For instance, use it for "mite" killer, paint your moldboards, cultivator shovels to prevent rust. The following table gives the freight rate from Benedict, Kans., to points in Kansas:

If within 50 miles not over.....	28 cents per barrel
If within 100 miles not over.....	32 cents per barrel
If within 150 miles not over.....	38 cents per barrel
If within 200 miles not over.....	40 cents per barrel
If within 300 miles not over.....	50 cents per barrel

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Do Your Own Thrashing.

It is a great point to be able to thrash from the shock. It saves grain and saves handling. This is sufficient to account for the growing popularity of the small or individual thrasher as against the job thrashing outfit with its long train of helpers to be housed and fed. Another point that argues strongly with all farmers who own small thrashers is the matter of time. They thrash just when they are ready, whenever the grain is just right, when the weather is fine. Their neighbors must wait until the thrashing outfit comes their way and go into the job with the weather just as it happens to be. For these reasons there is a constantly widening field for the excellent small thrashers manufactured by the Belle City Mfg. Co. of Racine Junction, Wis. This line of machinery has become so well known as hardly to need any words of commendation. Individual farmers or neighborhoods wanting to avail themselves of such advantages and such machinery can not do better than to get in touch with the Belle City people. A letter of inquiry to the company will bring catalogue and all particulars.

\$12.50 to Buffalo, N. Y.

and return, via Nickel Plate Road, from Chicago, July 8th, 9th and 10th, with extreme return limit of August 4th, by depositing ticket. Stopover allowed at Chautauque Lake points. Also lowest

rates to Ft. Wayne, Cleveland, Erie and other eastern points. Three trains daily, with first class equipment. Meals served in Nickel Plate dining-cars, on American Club Meal Plan, ranging from 35c to \$1.00; also service a la carte. No excess fare charged on any train on the Nickel Plate Road. If contemplating an eastern trip, write John Y. Calahan, General Agent, 113 Adams St., Room 293, Chicago, Ill. Chicago Depot, corner Van Buren and LaSalle Sts.—the only passenger station in Chicago on the Elevated Railroad Loop.

\$21.35 to Asbury Park, N. J., \$21.35

and return, via Nickel Plate Road. Tickets good via New York City. Dates of sale, June 29 and 30 and July 1 and 2, with extreme return limit of August 31, by depositing ticket. Chicago City Ticket Offices, 111 Adams St. and Auditorium Annex. Depot, LaSalle and Van Buren Sts., on Elevated Loop. No. 8.

A Valuable Reminder.

Eastview, Mo., Sept. 2, 1904.

The Lawrence-Williams Co., Today I happened to find some circulars in my office from you, and they called to my mind the use of one bottle of GOMBAULT'S CAUSTIC BALSAM on a horse that had ring-bone. It was a bad case, but that one bottle cured him. I would like to get the agency for it.

M. E. BIRD.

In the Dairy

Cook's Barn.

Replying to an inquiry in the National Stockman and Farmer, Mr. H. E. Cook, of Lewis County, New York, gives the following valuable suggestions about his barn:

The stable is ventilated by the King system of ventilation, credit for which is due Prof. F. H. King, formerly connected with the State University at Madison, Wis. It is the only known method whereby air currents can be kept under control. The air is taken out through a flue or flues running from near the floor of the stable to the highest point of the barn, with an opening in these flues near the ceiling equal in area to the opening at the bottom, the air to pass out of the lower end in the coldest weather and near the ceiling in the warmer days. In this way the temperature can be nearly equalized regardless of outside conditions. These flues must be large enough to provide a square foot of area for each five or six cows. In other words, these flues must be in every way like a chimney without flaws or cracks but not made of metal—wood is preferable because it is a non-con-

ductor of heat and the vaporized air passing out does not condense by reason of cold flue walls. This moisture-laden air, warm when it starts from the stable, must not cool to the condensing point until it reaches the outside air. The insulation necessary for the protection of these flues will depend upon locality; where I live we must contend with as low temperatures and as protracted as any dairy section in this country. Our flues are built upon the sides to the eave plate and then follow the roof independent of it and the space between the flue and roof is packed with straw. These flues from each side join at the ridge and pass out as a single flue. The material is two thicknesses of matched lumber breaking joints with tar paper between. That portion above the roof may be built of galvanized iron and surely will be more attractive but it should be double, with air chamber and in severely cold sections this air-space stuffed with straw. If not insulated, the inside will get frosty and melt when the sun shines or temperatures rise, running down somewhere; if the flue is water-tight the water will find its way back to the stable. This is very objectionable. If people would consult the house chimney, where wood is the fuel, they would learn the basic principle of stable ventilation. If a chimney were open or the pipe long and horizontal passing through cold rooms, condensation would result. Tight chimneys, perpendicular pipe and more rapid circulation would stop the trouble. The flue should be covered outside to keep out rain and snow. The intake flues must be located upon every side of the room, taking air if possible five feet below ceiling of stable, carrying it into the room and then upward, letting the flues open near ceiling. In the colder sections one can expect a flue four inches in diameter, where the barn is exposed to wind pressure, to furnish air for three to five cows, depending upon how much air gets into the room from other sources. The secret of securing perfect air movement is to provide that nowhere in the room shall there be dead air. If a recess or L is attached to the main room, intake flues must there be built, no matter how small this projection may be.

People usually say that if a damp spot is found there should be an outtake flue. No, nothing of the kind; that spot must have an intake in order to start the air in motion. In sections warmer than here more cold air flues and larger ones would be necessary. These flues could be made say 6, 8, or 10 inches in diameter if provided with dampers for opening and closing. It is very difficult indeed to say just where a hill leaves off and a mountain begins, so it is hard to give any precise and definite measurements without some knowledge of prevailing winter temperatures. I could give an opinion with a fair degree of safety if provided with thermometer records during the winter months.

Now the insulation of the room itself is mandatory. Do you think it would be possible to maintain even temperatures and dry air in your homes if the walls were single-boarded or even double-boarded? Why, no, you would say that house is a wind-break, not a home. We are up against the same proposition in the cow home. We must have insulation to keep the inner wall warm so that moisture will not condense. For the same reason double or storm windows are necessary. I have been criticised for stuffing these air spaces with straw because of trouble from rats and mice, lice, etc. I have always qualified the practice by coupling with it cement floors and whitewash. Plank floors are an abomination and trouble of all kinds will come. No ventilation known will remove the "cowy smell" from such a stable. To a degree the same may be said of the side walls. They must be made so that they can be kept clean and whitewashed. There must be no rough places for the lodgment of filth or for the breeding of bad odors.

I have a pig pen built upon the same

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And it not only does this the first year, in which it saves its cost, but goes on doing it for fully twenty years to come. In the face of these facts buying trashy "cash-in-advance" separators, or any other than the best, is penny wise, dollar foolish. Such machines quickly lose their cost instead of saving it, and then go on losing instead of saving.

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THE CREAM CHECK SYSTEM

Will make your cows pay more money in actual cash than you can realize by any other system.

It Is Done This Way:

Use one of our separators bought on easy payment plan and deliver your cream to one of our 500 cream receiving stations. In return you get our check two times a month with a complete statement of your account attached.

At each of our stations you can see your cream weighed, sampled and tested. Our butter-fat prices are quoted in advance of delivery and the test of each delivery of cream enables you to know at once the actual cash value of each can delivered. If you need money before checks are due we advance cash on your account. If you can't reach one of our stations you can ship direct. If you have no separator and want one, write us for information about the De Laval and we will tell you how a little cream each month will pay for one.

Ask us any question you please about any phase of the dairy business.

THE CONTINENTAL CREAMERY CO. TOPEKA, KANSAS.



CLEVELAND

This Cleveland Cream Separator is sold on the fairest and squarest plan ever devised. A fair trial on your own farm under your own conditions. The easiest to clean, the easiest to run, the best skimmer. We can save you from \$20.00 to \$30.00. Write and we will prove it to you. We will also send you a free book, telling just how the Cleveland is made and how it is sold. Write to-day. The Cleveland Cream Sep. Co., 34 Michigan St., Cleveland, O.

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GREAT AMERICAN DESERT SEEDS

Russian Proso, the quickest maturing grain and forage crop known. Hog Millet. Now is the time. Can be matured after a crop of rye or barley. Order at once.

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HOXIE, KANSAS

WHEN WRITING ADVERTISERS PLEASE MENTION THIS PAPER.

plan and we could have fed the people and held the institute there as well as in the cow-stable and had no more odor. I would not have said so before the meeting, because of a lack of corroborative evidence, but nearly all of the 400 people who attended the meeting visited the piggery and will vouch for my statement. A gentleman visited our place a few days ago who attended the institute. He said in discussing the matter with the farm manager, Mr. Crook, "Why, I thought you had things fixed up for the meeting. I did not expect to find it the same to-day. One could eat here to-day as well as before. I am surprised." No surprise about it. The construction is right in the first place and Mr. Crook is clean in the next place, and there is nothing impractical or too expensive for any one to adopt.

The whole trouble with protection for live stock is that our point of view has been wrong. We have been only one degree removed from the old system of outdoor exposure. Just think of a home for the cows, chickens, etc., like your own home, the heat derived, however, from the animals instead of a stove, and conserved the same, and you have the whole problem solved.

Experimenting with Dairy Cows.

Excerpts from Bulletin No. 125, Kansas Experiment Station, by D. H. Otis.

(Continued.)

Per Cent of Butter-Fat vs. Profit.—Dairymen, and especially creamery patrons, are often carried away with the idea of a high test, and not infrequently they class the highest-testing cow as the best in the herd. It should be borne in mind that the test is only one factor in the element of profit. Frequently more depends upon the pounds of milk than upon the test. This is shown in Tables XLVII to XLIX, which give the results of some of our low, medium, and high-testing cows.

TABLE XLVII.—Low-testing cows vs. yield of butter-fat.

Cow No.	Milk for one year, lbs.	Average test, per cent.	Butter-fat for one yr. lbs.
62.....	7,220.9	3.36	243.37
128.....	7,967.5	3.03	242.13
166.....	8,517.0	3.31	282.75
61.....	6,152.7	3.68	226.93
33.....	7,524.8	3.67	276.49
Averages....	7,476.5	3.41	254.33

TABLE XLVIII.—Medium-testing cows vs. yield of butter-fat.

Cow No.	Milk for one year, lbs.	Average test, per cent.	Butter-fat for one yr. lbs.
20.....	9,116.0	4.21	383.70
72.....	7,782.3	4.26	331.76
130.....	7,577.4	4.43	336.00
131.....	7,598.8	4.35	330.53
241.....	6,790.0	4.12	280.32
Averages....	7,772.9	4.27	332.46

TABLE XLIX.—High-testing cows vs. yield of butter-fat.

Cow No.	Milk for one year, lbs.	Average test, per cent.	Butter-fat for one yr. lbs.
246.....	4,558.0	5.53	251.9
242.....	5,346.4	5.75	307.74
58.....	3,330.6	5.03	167.65
46.....	2,964.7	5.07	150.5
11.....	3,475.0	5.14	178.6
Averages....	3,934.9	5.36	211.27

It will be noticed that cow No. 20, with a test of 4.2, produced 383 pounds of butter-fat, and that cow No. 11, with a test of 5.1, produced only 178 pounds of butter-fat, a difference of 205 pounds in favor of the medium-testing cow. Figuring butter-fat at creamery prices, No. 20 brings an income of \$40.37 over cost of feed, while No. 11 brings \$7.60 over cost of feed. The experience of the Kansas Experiment Station, together with that of dairymen who have kept individual records, lead us to the conclusion that it is not always the highest nor the lowest-testing cows that give the most profit. The medium-testing cow that gives a large flow of milk may be classed among the most profitable.

The Test of Whole Milk Delivered to Various Creamery Systems of the State.—While experimenting with dairy cows and studying some of the causes of variation in the quality of milk, the station has also been collecting data as to the tests of milk delivered to creameries in various parts of the State. These data, submitted in tables L to LIV, are both interesting and instructive in showing the variations that take place in the different months of the year and in different sections of the State.

It Makes the Most Dollars for You. That's the Easy Running EMPIRE Cream Separator

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EMPIRE CREAM SEPARATOR CO., Bloomfield, N. J. Branch Office, 311 Temple Bldg., Kansas City, Mo.

TABLE L.—Average test of whole milk delivered by patrons of the Continental Creamery Company, Topeka, for one year.

Summary of Skimming Stations, 1902 and 1903														
Name of System	Number of skimming stations in system.	1902					1903							
		June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	
Abilene	28	3.76	3.65	3.68	3.98	4.10	4.02	4.05	3.86	3.76	3.66	3.57	3.59	
Wichita	41	3.84	3.88	3.93	4.23	4.35	4.17	4.18	4.08	4.04	3.89	3.77	3.73	
Topeka	37	3.62	3.67	3.59	3.83	4.04	4.09	4.14	3.95	3.72	3.66	3.60	3.61	
Salina	46	3.67	3.67	3.72	4.02	4.19	4.14	4.46	4.52	3.89	3.83	3.63	3.71	
Great Bend.....	33	3.55	3.66	3.69	3.99	4.25	4.18	4.22	4.37	4.19	3.70	3.72	3.71	
McPherson	26	3.65	3.64	3.64	3.84	4.01	3.85	3.93	3.78	3.61	3.56	3.46	3.52	
Belleville	58	3.72	3.74	3.87	4.16	4.34	4.33	4.34	4.12	3.93	3.93	3.74	3.83	
Beloit	28	3.66	3.66	3.68	4.20	4.18	4.11	4.12	3.90	3.89	3.75	3.52	3.53	
Council Grove..	17	3.82	3.82	3.86	4.18	4.46	4.20	4.24	4.19	4.00	3.95	3.72	3.83	

The territory covered by the different systems is as follows:

Abilene System.—Skimming stations in Dickinson, Clay and Cloud Counties.
Wichita System.—Skimming stations in Cowley, Butler, Sedgwick, Sumner, Kingman and Harper Counties.
Topeka System.—Skimming stations in Jefferson, Shawnee, Osage, Riley and Wabaunsee Counties.
Salina System.—Skimming station on main line of Union Pacific and Lincoln branch of Union Pacific, west of Salina, all in Kansas.
Great Bend System.—Skimming stations on Denver line Missouri Pacific west of Holsington, in Kansas, and main line of Santa Fe west of Great Bend, in Kansas.
McPherson System.—Skimming stations in Marion, Dickinson, Morris, McPherson, Rice and Reno Counties.
Belleville System.—Skimming stations on Rock Island west of Belleville, in Kansas.
Beloit System.—Skimming stations on Central Branch of Missouri Pacific from Greenleaf west.
Council Grove System.—Skimming stations in Morris, Lyon, Greenwood, and Chase Counties.

TABLE LI.—Number of patrons and average test of whole milk delivered to the Clyde Creamery, Clyde, for five years.

Month.	1902.		1901.		1900.		1899.		1898.	
	No. patrons.	Av. test.	No. patrons.	Av. test.	No. patrons.	Av. test.	No. patrons.	Av. test.	No. patrons.	Av. test.
January	272	4.09	304	4.13	220	4.03	255	4.01	245	4.00
February	224	4.06	306	4.09	230	3.96	280	4.03	262	3.91
March	235	3.80	315	3.89	299	3.79	325	3.91	290	3.83
April	261	3.65	309	3.83	339	3.65	325	3.71	308	3.77
May	406	3.62	427	3.64	400	3.59	453	3.71	422	3.70
June	489	3.74	508	3.69	430	3.62	604	3.73	440	3.71
July	488	3.80	451	3.65	386	3.54	511	3.71	428	3.74
August	475	3.76	419	3.80	387	3.61	433	3.72	362	3.78
September	428	4.09	351	4.09	346	4.01	360	4.02	288	3.97
October	331	4.27	304	4.26	295	4.17	288	4.31	216	4.23
November	289	4.27	289	4.24	267	4.27	234	4.21	212	4.27
December	256	4.41	274	4.29	271	4.23	219	4.15	206	4.01
Averages	346	3.89	355	3.85	323	3.80	356	3.85	307	3.86

TABLE LII.—Average test of whole milk delivered to five stations of the Forest Park Creamery Co., Ottawa, for four years.

Month.	1902.	1901.	1900.	1899.	1898.
January	4.53	4.11	4.21	4.21	4.13
February	4.11	4.14	4.23	4.13	4.07
March	3.94	4.00	4.20	4.07	3.89
April	3.95	4.25	4.13	3.89	3.83
May	3.73	3.91	3.85	3.83	3.83
June	3.69	3.78	3.68	3.83	3.91
July	3.73	3.79	3.83	3.91	3.88
August	3.72	4.02	3.78	3.88	4.06
September	3.99	4.03	4.16	4.06	4.12
October	4.13	4.24	4.41	4.12	4.36
November	4.10	4.41	4.55	4.36	4.38
December	4.36	4.54	4.39	4.38	

TABLE LIII.—Average test of whole milk delivered to the Hesston Creamery, Newton, for five years.

Month.	1902.	1901.	1900.	1899.	1898.
January	3.93	3.92	4.04	4.03	3.85
February	4.14	4.03	4.12	4.05	3.73
March	3.76	3.78	3.88	3.84	3.64
April	3.61	3.73	3.75	3.71	3.62
May	3.65	3.66	3.79	3.65	3.71
June	3.84	3.77	3.75	3.75	3.71
July	3.76	3.69	3.70	3.69	3.71
August	3.79	3.79	3.79	3.69	3.80
September	4.27	4.13	3.99	3.95	3.99
October	4.37	4.34	4.26	4.13	4.14
November	4.25	4.04	4.11	4.13	4.13
December	4.15	3.99	4.12	4.21	

TABLE LIV.—Average test of whole milk delivered to the Hillsboro Creamery, Hillsboro, for five years.

Month.	1902.	1901.	1900.	1899.	1898.
January	3.76	3.71	4.00	4.11	3.90
February	3.80	3.73	3.97	3.91	3.67
March	3.58	3.60	3.93	3.61	3.61
April	3.38	3.45	3.65	3.52	3.60
May	3.47	3.36	3.69	3.72	3.60
June	3.59	3.41	3.75	3.77	3.65
July	3.50	3.36	3.69	3.65	3.74
August	3.50	3.06	3.69	3.60	3.71
September	3.90	3.89	4.00	3.90	4.00
October	3.93	4.01	4.25	3.90	4.00
November	3.77	3.66	4.00	4.00	4.16
December	3.77	3.80	3.88	4.00	4.25

Keeping Milk Pure.

Bulletin 221 of the Michigan Experiment Station gives the following summary of rules for milking:

1. The cows should be sound—no disease should exist in the animal.
2. The feed should be good and free from aromatic substances. If these aromatic foods are used, they should be employed according to those methods which will not cause odors or flavors to appear in the milk.
3. The cow should be groomed and hair about the udder preferably clipped.
4. The udder should be moistened during milking.
5. The milker should be a neat, tidy person.
6. The milker should be free from disease and should not come in con-

tact with any communicable disease.

7. The milker's hands and clothes should be clean while milking.

8. The pail should be sterilized.

9. The stall should be such as to reduce the amount of disturbance of dust and dirt.

10. There should be good light, good ventilation and good drainage in the stable.

11. The stable should always be kept clean.

12. Feeding and bedding, unless moist, should be done after milking.

13. A dustless milking-room is desirable.

14. Milk should not stand in the stable.

15. If milk is aerated, it should be done before cooling and in pure air.

16. The sooner the milk is cooled after milking the better.

17. Keep the milk as cold as possible when once cooled.

\$12.25 to Niagara Falls and Return

via Nickel Plate Road, June 18, 19, and 20, with return limit of June 24, or by depositing ticket limit of July 14 may be obtained. Through vestibled sleeping-cars. Three through daily trains. No excess fare charged on any train on the Nickel Plate Road. Meals served in Nickel Plate dining-cars, on American Club Meal Plan, ranging in price from 35 cents to \$1; also service a la carte. For further information, write John Y. Calahan, General Agent, 113 Adams St., Room 208, Chicago, Ill. Passenger Station at Chicago, corner Van Buren and La Salle Sts., on the Elevated Loop. Chicago City Ticket Office, 111 Adams St. and Auditorium Annex, No. 10.

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To be a permanent benefit a Cream Separator must be durable. The improved

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will outwear any other. We'll tell you why. All the working parts are enclosed and protected from dust, grit and damage. Those moving at high speed run in oil on steel balls, which greatly reduce wear. All the steel, bronze and tin used is carefully inspected, and is of the highest quality money can buy.

Throughout the whole machine the parts are few, simple and easy to get at. Each completed machine is put to a thorough test before shipped.

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But the best proof of durability is what the machine has done in actual use. In our "Dairy Separator Catalogue" we have printed a few of the thousands of letters received from satisfied users. (Some of them have used the U. S. for ten years or over.) Their testimony is worth something to you. Write for this book now. It will interest you.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

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\$25.00 Cream Separator

FOR \$25.00 we sell the celebrated DUNDEE CREAM SEPARATOR, capacity 300 pounds per hour, 500 pounds capacity per hour for \$35.00, 800 pounds capacity per hour for \$44.00. Guaranteed the equal of separators that retail everywhere at from \$75.00 to \$125.00.

OUR OFFER. We will ship you a Separator on our 30 days' free trial plan, with the binding understanding and agreement if you do not find by comparison, test and use that it will skim closer, skim colder milk, skim easier, run lighter and skim one-half more milk than any other Cream Separator made, you can return the Separator to us at our expense and we will immediately return any money you may have paid for freight charges or otherwise. Out this ad out at once and mail to us, and you will receive by return mail, free, postpaid, our LATEST SPECIAL CREAM

SEPARATOR CATALOGUE. You will get our big offer and our free trial proposition and you will receive the most satisfactory Cream Separator ever heard of. Address, SEARS, ROEBUCK & CO., CHICAGO.

CHILD'S SO-BOS-SO KILFLY

MORE MILK MORE MONEY!

Cows will give 15 to 20 per cent more milk if protected from the torture of flies with

CHILD'S SO-BOS-SO KILFLY.

Kills flies and all insects; protects horses as well as cows. Perfectly harmless to man and beast. Rapidly applied with Child's Electric Sprayer. 80 to 100 cows sprayed in a few minutes. A true antiseptic; keeps stables, chicken houses, pig pens in a perfectly sanitary condition.

Ask dealer for Child's SO-BOS-SO or send \$1 (special price) for 1-gal can and Sprayer complete by express.

CHAS. H. CHILDS & CO., Sole Manufacturers, 18 LaFayette Street, Utica, N. Y.

May and June Excursions to the South

There will be cheap homeseekers' and settlers' tickets on sale to the South in the territory of the Southern Railway and Mobile & Ohio Railroad in May and June, and in other months this year. The May and June excursions will give you full opportunity to investigate the gathering of the gathering of early potatoes and many vegetable crops of early peaches and other fruits, of grasses and grains, and will show the homeseeker what Southern farmers, and especially what Northern settlers in that section are doing. Fruit and truck raisers make \$50 to \$600 an acre. Lands which enable them to do it can be had at from \$3 to \$15 an acre. Go down and see if this is not true. Excursion dates are May 16 and June 6 and 20. Information about Southern farm locations furnished by

M. V. RICHARDS, Land & Industrial Agent, Washington, D. C.

CHAS. S. CHASE, Agent, 622 Chemical Bldg., St. Louis, Mo.

M. A. HAYS, Agent, 225 Dearborn St., Chicago.

Largest Optical Mail Order House in the West
Eyes examined free accurately by mail. Any style glasses, \$1. Write for free examination sheet and illustrated catalog. Satisfaction guaranteed. R. H. Baker Optical Co., 624 Kansas Ave., Topeka

The Poultry Yard

CONDUCTED BY THOMAS OWEN.

Price for Hatching Chicks.

EDITOR KANSAS FARMER:—I have furnished eggs and a friend has set her incubator for me. What is the customary price for hatching chicks where eggs are furnished?

Anderson County. A SUBSCRIBER.

Answer.—The hatching of eggs in incubators for outsiders is so infrequent a transaction that there is no set price for it. It is generally an accommodation on the part of the owner of the machine to a friend or neighbor and the terms are generally understood between them. We have heard of several persons agreeing to give half the chicks for hatching them, and of others paying ten cents per chick to the operator of the machine.

Fowls Are Blind.

EDITOR KANSAS FARMER:—For two months we have been having trouble with our Plymouth Rock hens. They begin drooping around, and go blind in the right eye—finally going blind altogether. We have not discovered any other symptoms. Can you tell what is the matter and give remedy for it?

GEO. T. GORE.

Chaves County, New Mexico.

Answer.—Your description of the symptoms of the disease affecting your fowls is too indefinite for us to properly diagnose the case. Blindness is often a result of roup; a cure for which you will find in a recent copy of the KANSAS FARMER. Blindness is also caused by chiggers and fleas in certain sections of the country and we believe New Mexico to be one of these regions. A liberal application of insect powder on the hens and a sprinkling of lice-killer in the poultry-houses ought to remedy the evil.

Preserving Eggs.

A few weeks ago, at the request of a subscriber, we gave a recipe for preserving eggs. Now comes another correspondent asking what we know about the water-glass process of preserving eggs.

Covering eggs with a solution of water-glass is a most simple and efficient method of preserving eggs for several months. This preparation has been tested by various experiment stations and has proved to be the best method of preserving eggs yet discovered, except artificial cold storage. It is being used to some extent in a commercial way, as well as by many farmers and housekeepers who wish to pack away eggs when they are cheap and plenty for use in the fall and winter when they are scarce and high in price.

Strictly fresh, clean eggs are necessary to put down. Stale or dirty eggs will not keep well. Eggs should not be washed. They should be packed, preferably small end down, in a stone jar, or other suitable vessel, which should be placed in a cool, dark place. To ten or fifteen quarts of water, which has been boiled and cooled, add one quart of water-glass (sodium silicate) which may be obtained of most druggists. A good grade of water-glass should be used. The vessel should be kept tightly covered to prevent evaporation. If the preserved eggs are kept too warm, the silicate is deposited and the eggs are not properly protected. The solution may be prepared, placed in the jar and fresh eggs added from time to time until the jar is full, but be sure that there is fully two inches of the solution covering the eggs.

The eggs may be taken out from time to time as needed. They may be covered with a jelly-like solution which is easily washed off. All packed eggs contain a little gas and in boiling the shell will crack. This may be prevented by making a pin-hole in the large end of the egg before cooking. One farmer in the East reports preserving 6,000 dozen eggs last season by this method. He sold them in December and January and received

the same price that strictly fresh eggs sold for. While eggs preserved in this way are not as good as new-laid eggs, they are better than the usual run of fresh stock to be had at the stores.

Poultry Pointers.

At this season of the year lice are the great pest of the poultry-yard. Chicks that are infested with lice will not thrive, and it is essential that the poultryman must endeavor to rid his flock of the nuisance. Frequent applications of insect-powder to each chick and fowl and a thorough cleaning and disinfecting of the poultry-houses are necessary. A cheap disinfectant for the poultry-house is a whitewash, made by slaking fresh lime to the consistency of cream and adding a gill of crude carbolic acid to each pailful of whitewash. Spray into every crack and crevice of the house and you will soon be rid of lice.

Above all things else, do not compel or even allow your fowls and chicks to drink impure water. Now that warm weather is here, the drinking-water should be renewed frequently during the day. Keep the drinking-vessels scrupulously clean and in a shady place. A great deal of sickness in a flock will be avoided if this is attended to. It is a good plan to put a few drops of tincture of iron in the drinking-water.

The directors of the State Poultry Show held a meeting at the office of Adjutant General Hughes at the State House June 8. They decided to offer the same liberal premiums that were offered the past two years on all varieties of poultry. The first premium pen will receive \$10 in cash, the second \$5, and the third \$2. The first prize hen, pullet, cock, and cockerel will each receive \$2, the second \$1, and the third 50 cents. Last year the first-prize pen received a gold medal in lieu of \$10 in cash, and while all of those who received the medals were much pleased with them, there was a decided preference among the majority of breeders for the cold cash in place of the medals, hence the change this year. Secretary Hughes, although now Adjutant-General of the State, is abating none of his vigor and energy and predicts the largest show ever held in the West. E. C. Fowler, of this city, was elected a director in place of Geo. H. Gillies, resigned. The show will be held in the auditorium on the second week in January, 1906.

Poultry Notes.

When egg-production alone is the object in keeping fowls, no roosters are needed. The hens will lay as well without them while the eggs will keep three times as long.

No one kind of food will make the hens lay regularly but a judicious rotation of feeding the best kinds of food with pure water and dry, comfortable quarters are valuable aids.

The foods required for growth and egg-production are somewhat similar, inasmuch as each requires gluten and nitrogen. These elements prevail in oats, wheat, buckwheat, barley, milk, etc.

One of the best rations for fattening chickens is cornmeal mixed with boiling hot sweet skim-milk. The fowls not only relish it but it gives the flesh a fine, white appearance which adds to their market value when dressed.

Fowls always prefer the open air. They will not remain indoors no matter how clean and bright the poultry-house may be if the weather will permit their running out. If they can not be allowed free range, they should at least have the run of the yard.

Poultry-raising as an exclusive business has in a few instances proved a success, but the great mass of customers still depend, and probably always will, upon the farmers for their supply of eggs and poultry; and in no place other than the farm can they be produced so cheaply.

As a rule, during the summer while the fowls can be given free range on the farm it is rarely necessary to feed more than twice a day, early in the morning and late in the evening. The fowls will keep healthier and thrive better if compelled to hunt for a good portion of their food.

In summer fowls need more space than they do in winter, and crowding is more detrimental to health in summer than in winter. Better allow some of the fowls to roost out of doors rather than compel them to roost in a closely crowded house at night. Provide plenty of room, else market a sufficient number so that what are kept will have plenty of room.

Poultry-Raising.

P. H. JACOBS, IN FARM AND FIRESIDE.

WEIGHING THE FOOD.

If an experiment can be made in weighing the food and the chicks for a few weeks it will prove interesting. Select any number of chicks or ducklings, or even grown fowls (about ten), weigh them every week, keep an account of the exact amount of food consumed, and the matter of feeding will then be better understood. Experiments with different kinds of food could also easily be made, and chicks of several breeds could be used for comparison, with an expenditure of but little time.

FEEDING TOO MANY FOWLS.

Now that the hatching season is nearly over, there is no necessity for retaining the roosters, as the hens will lay without their presence, and their room is valuable, while they cost more for food than they are worth. It is well to retain the best of the early pullets, but all pullets that do not show evidence of thrift or of reaching maturity before winter should be disposed of. The young cockerels should be disposed of just as soon as they are large enough for market or the table. It is better to give the growing stock plenty of room than to crowd them. The poultry-house is usually a warm place in summer when well filled with birds, due to the animal heat of the bodies, and the flock should consequently be reduced to the lowest number consistent with the facilities.

PRICES AND QUALITY.

It is a disappointment to ship poultry to market and receive less than the prices anticipated. Frequently some rascally commissionman takes advantage of his opportunity to rob the farmer, while many other drawbacks are met, but it should not be overlooked by farmers that possibly they may sometimes be at fault. In April and May the highest prices are paid for chicks of marketable age, and even later during the year very good prices are obtained for choice stock. The highest quotations are for the best, and a great many fail to receive the highest prices because of lack of quality in the poultry. But it is not always an easy matter to convince the shipper that he might do better if he would. He should take time to make the birds fat and plump, ship them to market in good condition, and get them there as soon as possible. Crowding old and young birds of all sizes and breeds in small coops during warm weather, rendering watering very difficult, and expecting highest prices, will result in disappointment.

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SCOTCH COLLIES.

FOR SALE—Two litters of Scotch Collie pups and a few older dogs. All stock registered or eligible for registration. Burr Fleming, Kinsley, Kans.

FOR SALE—Pure-bred Scotch Collies; forty head pure-bred Shropshire ewes; registered Guernsey bulls. G. C. Wheeler, Mgr. Perkin's Farm, Harlem, Mo.

FOR SALE—Two male Scotch collies, nearly full grown. Eligible to registry, strong in the blood of Metchley Wonder. Price, \$10 each. Geo. W. Maffet, Lawrence, Kans.

SCOTCH COLLIE PUPS—Four more litters of those high-bred Collies, from 1 to 3 weeks old, for sale. Booking orders now. Walnut Grove Farm, H. D. Nutting, Prop., Emporia, Kans.

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Plenty of Hives and Sections—If you are in a hurry, send us your order. Can ship same day order is received. We have plenty of everything the bee or poultry-raiser could possibly need, such as Hives, Sections, Foundation, Frames, etc. In poultry supplies we keep in stock Cyphers Incubators, Brooders, Incubator and Brooder Lamps, and the celebrated Cypher's Chick Feed. To free your pen of vermin get some of our Lice Powder or Naporeqi—they never fail. Send for free catalogue.

POULTRY BREEDERS' DIRECTORY

Eggs From Prize-winning S. C. B. Leghorns that are mated to win. Pen No. 1, \$1.50 per 15; pen No. 2, \$1 per 15. Get prices on larger quantities. State number wanted. F. W. Boutwell, Route 3, Topeka, Kans.

BLACK LANGSHAN EGGS for hatching, \$1 per 15; \$5 per 100. Good stock. Address Mrs. Geo. W. King, Box 101, Solomon, Kans.

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

EGGS FOR SALE—S. C. W. Leghorns, W. Wyandottes; \$1 per 15. W. H. turkeys, \$1.50 per 9. Emmenten geese, 20c each. W. African guinea, \$1 per 17. All guaranteed pure-bred. A. F. Rutley, Route 2, Maple Hill, Kans.

PURE S. C. B. LEGHORN EGGS, 30 for \$1; 100 for \$3. New blood. F. C. Flower, Wakefield, Kan.

PURE S. C. B. Leghorn eggs, 30 for \$1; 100 for \$3. New blood. F. P. Flower, Wakefield, Kans.

BUFF LEGHORNS EXCLUSIVELY—Eggs \$1.75 per 50; \$3 per 100. J. A. Reed, [Route 3] Wakefield, Kans.

RHODE ISLAND REDS—A hardy, early-maturing, general-purpose fowl; original stock from the East. Eggs per 15, \$1.25; 30, \$2.00. Mrs. G. F. Kellerman, Vinewood Farm, Mound City, Kans.

R. C. W. LEGHORN EGGS \$1 per sitting; \$1.50 per two sittings; \$5 per hundred. Stock excellent. Mrs. A. D. Corning, Route 1, Delphos, Kans.

MAPLE HILL Standard-bred S. C. B. Leghorns champion layers, none better; cockerels from State prize-winners. \$1 per sitting; \$5 per 100. Mrs. D. W. Evans, Edgerton, Kans.

STANDARD BRED SINGLE COMB BUFF LEGHORNS—Headed by first prize pen Chicago Show 1903 and took six first prizes and first pen at Newton 1904. Eggs, \$3 for 15. S. Perkins, 301 East First Street, Newton, Kans.

BLACK MINORCAS—Biggest layers of biggest eggs. Eggs for hatching, \$1.50 per 15. Also at same price, eggs from choice mating of Light Brahmas, Partridge Cochins, Buff Orpingtons, Barred and Buff Plymouth Rocks, White and Silver Laced Wyandottes, Rhode Island Reds, Rose and Single Comb White and Brown Leghorns, American Dominiques, Pit Games, Houdans, White Crested Black Polish, White Crested White Polish, Buff Cochins Bantams. James C. Jones, Leavenworth, Kans.

WHITE WYANDOTTES—Large birds, clear range. Eggs, 75 per 15. Henry Harrington, Farmwater, Kans.

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

S. C. B. LEGHORNS EXCLUSIVELY—Eggs for hatching from fine pure-bred stock at \$1 per 15. Write for prices on larger numbers. J. A. Kauffman, Abilene, Kans.

FOR BUFF PLYMOUTH ROCK eggs, from best stock, send to Geo. Poultry Farm, 15, \$1.50, \$3.50. Pure M. Bronze turkey eggs, 11, \$3. C. W. Peckham, Haven, Kans.

TO GIVE AWAY—50 Buff Orpingtons and 50 Buff Leghorns to Shawnee county farmers. Will buy the chicks and eggs. Write me. W. H. Maxwell, 521 Topeka Ave., Topeka, Kans.

BARRED AND WHITE PLYMOUTH ROCK Eggs, \$2 per 15; \$5 per 45. Hawkins and Bradley strains, scoring 98% to 94%. Mr. & Mrs. Chris Bearman Ottawa, Kans.

SUNNY SUMMIT FARM—Pure-bred poultry Stock and eggs for sale from high-scoring varieties of S. Spangled Hamburgs, S. C. and B. C. Brown, S. C. White Leghorns, S. C. Black Minorcas. Eggs, \$1 per 15; M. B. Turkey eggs, \$2 per 9. Vira Bailey, Kinsley, Kans.

Golden Wyandottes

Winners at Topeka Poultry Show, January 1905, 2, 3 hen, 3 pullet, 2 cock, 2 cockerel. A few birds for sale. Eggs, \$2 per 15. J. D. MOORE, Route 2, Blue Mound, Kans.

"A NINE TIMES WINNER"

Bates Pedigreed Strain of White Plymouth Rocks have been shown in nine poultry shows the past two years and

Won in Every One of Them. If they win for us, their offspring ought to win for you. Eggs, \$1.50 per 15. Elmwood strain of White Wyandottes also hold their own in the show-room. Eggs, \$1 per 15.

W. L. BATES, Topeka, Kansas.

White Plymouth Rocks

EXCLUSIVELY.

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

W. P. Rocks hold the record for egg-laying over every other variety of fowl; eight pullets averaging 280 eggs each in one year. I have bred them exclusively for twelve years and have them scoring 94 to 96%, and as good as can be found anywhere. Eggs only \$2 per 15; \$5 per 45, and I prepay expressage to any express office in the United States. Yards at residence, adjoining Washburn College. Address THOMAS OWEN, Sta. B, Topeka, Kans.

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Theriac (lice powder).....	25c
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TOPEKA SUPPLY HOUSE, Topeka, Kans.

THE INTERNATIONAL SUNDAY-SCHOOL LESSON.

(Copyright, Davis W. Clark.)
Second Quarter.—Lesson XIII.
June 25, 1905.

The Quarterly Review.

The two parables, "The Good Shepherd" and "The Vine and the Branches," illustrate Jesus' method of teaching.

In His parable of the Good Shepherd (Lesson I), Jesus held the mirror before the hierarchy of His day with a fearless hand. He showed its mercenary spirit. It worked havoc in the highest interests of men. It killed in the realm of spiritual values. On this dark background Jesus projected the ideal of the true shepherd. He enters upon His function in the appointed way. His life is spent in care of the flock. He calleth, leadeth, putteth forth, goeth before.

The Vine (Lesson VI) was one of the most familiar and beautiful of natural objects—the king of fruits in Palestine, source of wealth, joy, and strength to the people. In every respect it was worthy of the dignified and emblematic use Jesus made of it. In this allegory Jesus asserts His fundamental relation to humanity. He is source of spiritual life and fruitfulness. Abiding in the stock (Jesus) and pruned by the husbandman (the Father), the branches (the disciples) live and bear fruit. Apart from the stock the branches they wither. Figurative language could not be used more skillfully.

Jesus' parables are miracles in word. His miracles are parables in deed. The miracle of the raising of Lazarus (Lesson II) is the parable which teaches that the resurrection and immortal life are not far off attractions, but that they are concentered in an immanent Christ. Those who are joined to Him whether dead or living (as we use the words) live (in the higher meaning which Jesus has put into the word). The dead have not lost, the living can not lose this immortal life. He that hath the Son hath life.

Jesus acted out still another parable when He washed His disciples' feet (Lesson V). It was to rebuke the unseemly scramble for place in which His disciples engaged at the last supper, that Jesus performed the most menial task of the scullery drudge. He puts an end to caste, place, and precedence. Henceforth His disciples must cherish such a feeling toward one another as would make them willing to perform the most lowly service for each other.

A social occasion and a great popular ovation next arrest our attention. The supper at Bethany (Lesson III) was a high and loving courtesy shown to Jesus. One significant and timely deed lifted this feast to the level of a sacrament. Mary brought out of her boudoir an Oriental cruse of alabaster filled with liquid perfume and poured it upon Jesus' head and feet. Mary gave Jesus a momentary embalming; He embalmed her forever in the incense of His praise. The popular ovation was on His entry into Jerusalem. (Lesson IV.) It was not a mere passing incident—an accident of His approach to the city. Jesus planned this entry, designed to make it effective. He was not captured by the multitude; he captured it and used it for His purpose. The orderly precision of all His movements indicates this. He openly came to His own. The issue was pressed. They must accept or reject. The test was made in no dark corner—nothing could have been more conspicuous.

Jesus puts a period to His ministry with a prayer (Lesson VII), commonly called "the high priestly prayer." The high priest of the old dispensation carried the twelve tribes upon his bosom before the Lord in the twelve precious stones which formed his breastplate. The high priest of the new dispensation carried the twelve apostles upon His bosom. Jesus stands with the little group of men to whom He had made the greatest possible revelation, and whom He expects in their turn to be revealers of His truth. He must needs leave them. If they fail, all is lost. He cries to heaven for

them, that they may be kept and sanctified and their unity preserved.

Two types of character come in sharpest contrast when Jesus appears before Pilate for trial. (Lesson VIII). Pilate, time-server, whose ruling motive was to keep his place, to do which he would even condemn the innocent. Jesus, King in the realm of truth, whose subjects are the lovers of truth. The outcome of these two types is significant. Pilate's time-serving had small reward. He kept office only six years longer. Jesus' dominion, on the contrary, ever augmenting, has lasted for twenty centuries, and extends from sea to sea.

The procession to the cross (Lesson IX) was the most pitiful earth has ever seen. The evangelists incidentally suggest how we should treat that pitiful scene. Their quadruple description of the crucifixion is a literary marvel. Though a circumstance of transcendent importance, the account is surprisingly condensed. Nature herself drew a veil of darkness around the scene. The seven words from the cross yield richer gains than any morbid spinning out of mere physical pains.

The open tomb (Lesson X) was converted into a bureau of information for the troubled disciples. White-livered attendants were there to point them to the place where the Lord lay, and to the grave-clothes laid in such orderly fashion as to preclude the idea of a hasty and clandestine removal, and to announce the blessed truth, "He is risen!"

Prepared message (Lesson XI) always comes to prepared person. It was no accident that this man had this vision. By a long course of schooling, to which he submitted intelligently, he became singularly open to the Divine. By the same process he was prepared to submit what he received. The Apocalypse has been called a "Tract for Bad Times." It was written in an age of persecution. Its purpose was to assure foreboding minds of ultimate victory in spite of current contradictions. It opens the vista of the future, and pictures Jesus triumphant.

Under the material emblem (Lesson XII) of a city adorned and beautified, the spiritual betterment of humanity is shadowed. The plan and fashion of the city is from heaven. The ideals of right human living are Divine. As these ideals are realized, and in that proportion God lives with and in men. In the ratio of righteousness (right living) tears are dried. Wrong living (sin) is the sole cause of painful death, sorrow, and crying.

Farm Notes From the Pacific Coast.

The city of Tacoma is making wonderful strides in manufacturing and commerce. East of the city is the rich, level, highly productive Puyallup Valley. Secretary Mills, of the Puyallup board of trade, has received a letter from W. D. Cotter, who says: "The net income from my twenty-two-acre field of hops in the Puyallup Valley, for the past seven years, has been \$21,770, or an average of about \$141 per acre per year." Frank E. Gibson also writes: "The net proceeds from my one acre of Washington dewberries for the period of six years in which they have been bearing is \$1,440.36, or an average of a trifle over \$240 per year." Wonderful returns.

Apples from the Rogue River Valley in Oregon have brought very large returns as shown by the following statement sworn to by C. H. Lewis, a prominent and successful fruit-grower of Medford, Ore. It is as follows: "From 14 acres of yellow, Newtown, pippin apple-trees eighteen years old, I last year (1904) sold apples to a value of \$4,559, or a gross value of \$325 and over per acre. I have 160 acres of apples and pears which will soon be in bearing."

Throughout Idaho, Washington and Oregon, the past winter had much less rain than usual but the generous and well-distributed rains of May and June have brought the crops along in a wonderful and rapid manner, insuring a large yield of all grasses and small grains. The fruit crop generally is not up to the promise of one year ago though there will be no shortage. The winter was so warm that trees generally bloomed in February or March according to locality which was almost a month too soon. Cool weather later somewhat shortened the stand of fruit on the trees. Last year was a big one for the Coast, but this present season will exceed it in immense crops.

Prospects for a big crop of sugar-beets around St. Anthony, Idaho, are very fine. The young beet crop is a good stand and vigorous. Within thirty miles of St. Anthony are three mammoth sugar-beet factories that cost \$1,000,000 each. It seems that the sugar-beet business of the United States is being rapidly transferred west of the Rockies. Colorado and Idaho are getting new factories all the time. The citizens of Nampa, Idaho, have just closed a deal for a million-dollar factory at that point and as that place is

FIRST STRAWBERRIES \$12.50 PER CRATE

Kennewick positively shipped the first ripe strawberries in the Northwest. These were gladly taken in the cities of the Coast and at Spokane and Butte. The price started at \$12.50 per crate and up to the last week the average price was \$5.02 per crate. Do you realize what it meant to command the markets for two weeks? Do you not see the great advantage in having an irrigated ranch at Kennewick? Here you can earn \$2,000 per year on a five-acre tract. Stop working for other people and purchase a small piece of rich land under the Northern Pacific Irrigation Company's Canal. For information write

KENNEWICK LAND CO.,

Kennewick, Yakima County, Washington.

SNAKES

are not found in the SNAKE RIVER VALLEY, but here is found the most beautiful tract of agricultural land in the United States, and you do your raising, and have no failures of crops, that's irrigation. No Cyclones or Blizzards. This country needs live, wide-awake men, who wish a new home in the rapidly developing west, and offers cheap land, good church and school facilities, and a chance to make money to those who are willing to work. St. Anthony, the County seat of Fremont County, Idaho, is a bright and growing town in the very heart of a rich and growing richer country, and if you wish reliable information in regard to prices, soil, climate and our prospects, write any of the following firms: First National Bank; C. C. Moore Real Estate Co.; Wm. D. Yager Livery Co.; Murphy & Bartlett, Cafe; Commercial National Bank; C. H. Moon, Farmer; Chas. H. Heritage, Riverside Hotel; Miller Bros., Grain Elevator; Skelet & Shell, General Merchandise; Chas. S. Watson, Druggist; Gray & Ross, Townsites; W. W. Youmans, Harness Store.

Palm Trees Forty Feet High
Fig Trees Four Foot Through

A Bartlett Pear Crop that sold for \$30,000 last year, and many other fruit and cereal crops were the products from the Los Molinos Ranch during the year of 1904. This splendid, level, rich enormously productive body of 40,000 acres is now offered for sale for the first time. HAVE YOU LONGED FOR A LAND where the fierce winds of winter never come—where you can be in comfort all the year around—where every month of the year has its special ripening crop—where in wondrous variety and profusion every fruit, grain and grass of Temperate and Semi-Tropic climates intermingle. Get a ten, twenty or forty-acre home from the Los Molinos Lands, now offered for sale for the first time. At a special price on reasonable terms and low interest upon deferred payments.

LOS MOLINOS LAND COMPANY,

Red Bluff, Cal.

THE UNITED STATES GOVERNMENT

is expending over seven million dollars in building reservoirs and canals to irrigate \$70,000 acres of magnificent farming lands around Nampa, IDAHO, the railroad center of the State which is ample proof of the great fertility of our farm lands.

ONE MILLION BEST-SUGAR FACTORY is securing contracts for raising sugar-beets prior to its erection.

OUR CROPS—five to eight tons alfalfa per acre per year—potatoes three to five hundred bushels—two crops timothy and clover—wheat 30 to 60 bushels, oats 20 to 30 bushels, barley 50 to 60 bushels per acre. All fruits raised to great perfection.

Write or call on any of the following citizens of Nampa, IDAHO: R. W. Purdum, Mayor, Mine Owner; C. E. Dewey, Railways, Mines, Hotel Nampa, Development Co.; Walling & Walling, Real Estate; Stoddard Bros., Hardware; Harmon & Lamson, Real Estate; Tuttle Mercantile Co.; Langdon Mercantile Co.; Robbins Lumber Co.; Central Lumber Co.; Bank of Nampa; Citizens' State Bank; Grand Hotel; Central Implement Co.; Nampa Hardware & Furniture Co.; W. L. Brandt, Real Estate; Mrs. R. E. Green, Lands; King & Withering, Townsites; W. F. Prescott, Lands; Dewey Livery Stables.

in the midst of an immense irrigated section the business will be a success from the start. The beet-factories insist upon establishing themselves where there are irrigated lands in order to get sure crops of the beets.

Spokane, Wash., is one of the wonder-towns of the earth. In 1883 a mere village, it is to-day a splendidly built city of 65,000 people with over twelve million dollars in its banks, and it is principally owned, business and residence district, by its own citizens. Farmers in the Palouse and Big Bend countries make fortunes in wheat raising and then go to Spokane and build or purchase \$100,000 business blocks and become bank presidents.

The town of Davenport, Big country, Washington, has a hustling chamber of commerce. It is the county seat of Lincoln County, and receives an enormous amount of wheat and other grains from surrounding farmers every year. The crop prospects around this place are unusually good this year.

Eight years ago the country around Wenatchee, Wash., was a desert not worth a dollar per acre. To-day its bearing fruit orchards sell for as high as \$1,000 per acre and hard to get at that. Kennewick, Washington, has had irrigation for only two years but it already leads in strawberries and its lands too are marching at a rapid rate toward the thousand-dollar-per-acre mark. Of course they are now bringing very much less, but their increase in value is right now probably \$100 per acre per year. Pretty good place to plant a few dollars.

DAVID R. MCGINNIS.

Portland, Ore.

STOP OFF AT SPOKANE

and look over the richest Agricultural and fruit-growing district in the United States when enroute to or from the Lewis & Clark Exposition. See the land of opportunities; the mecca of the farmer and investor. Volcanic ash soil, unequalled for productiveness; \$5 to \$25 per acre. Unsurpassed climate. But two days of zero weather in past three years. Write for detailed information and free descriptive literature.

Spokane Chamber of Commerce,
Spokane, Wash.

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TACOMA CHAMBER OF COMMERCE,
Tacoma, Washington.

Rogue River Valley, Ore.

The world is familiar with the wonderful prices which have been obtained for Oregon apples. The Rogue River Valley is the seat of the best Oregon apple land. It is equally well adapted for all fruits. Bartlett and winter pears are just as profitable as apples. Alfalfa yields four crops annually WITH-OUT IRRIGATION. Climate is perfect. Write Secretary of Medford Commercial Club for reliable information, Medford, Ore.

When writing advertisers please mention this paper.

JUST ISSUED

Farm Grasses of the United States

By W. J. SPILLMAN

Agrostologist, U. S. Department of Agriculture

An intensely practical discussion of the farm grasses of the United States of America is presented in this volume. It is essentially a resume of the experience of American farmers with grasses, and it is safe to say that no other work has covered the ground so thoroughly. No attempt has been made to give a connected account of all the grasses known in this country, but the aim has been rather to give just the information which a farmer wants about all those grasses that have an actual standing on American farms. The whole subject is considered entirely from the standpoint of the farmer. One of the most valuable features of the book is the maps showing, at a glance, the distribution of every important grass in the United States; and the reasons for the peculiarities in this distribution are fully brought out. The principal chapters treat on the grass crop as a whole and the relation of grass culture to agricultural prosperity, meadows and pastures, the seed and its impurities; the bluegrasses; millets; southern grasses; red-top; orchard grass; brome grasses; grasses for special conditions; haying machinery and implements; insects and fungi injurious to grasses, etc. etc. The methods followed on some pre-eminent successful farms are described in detail, and their application to grass lands throughout the country is discussed. The discussion of each grass is proportional to its importance on American farms.

This book represents the judgment of a farmer of long experience and wide observations regarding the plan in agriculture of every grass of any importance in American farming. In its preparation its use as a text book in schools as well as a manual of reference for the actual farmer has constantly been kept in mind. The book is most conveniently arranged and splendidly indexed, so that the reader may find any subject at a glance. Illustrated, 5x7 inches. 248 pages. Cloth. Price, postpaid, \$1.00.

KANSAS FARMER COMPANY

TOPEKA,

KANSAS

A Kansas Cattle Feeder's Method.

(Continued from page 649)

I prefer a small feed-lot.

I believe if the packers would always pay a premium for good quality, well-finished cattle, that it would be the means of inducing the breeding of better cattle.

I have always made good gains in feeding cattle. I have had several lots that have done as well or better than these, but have not always found it profitable.

These \$6.80 cattle made me good money.

I do not find much difficulty getting good cattle to feed, as most of the farmers here use good bulls.

The outlook for feeders at present is a little uncertain. I always have hogs following my cattle.

These cattle were all dehorned.

I like to feed 2 and 3-year-old cattle of the beefy, low-down type.

I keep salt before my cattle all the time.—E. P. Carnahan, in Breeders Gazette.

NOTICE.**State Grain Inspection Department.**

Under the provisions of an act of the Legislature of the State of Kansas passed and approved by the session of 1903 to establish grades of grain by the Grain Inspection Commission, appointed by the Governor of Kansas, under the provisions of said act said commission will meet at the office of the Governor at 10 o'clock on the 12th day of July, 1905, to fix and establish grades for all kinds of grain handled in the State of Kansas, to be in effect on and after said date.

The said commission will hear all persons, or their representatives, interested in the grain business at said time and place above mentioned.

G. W. GLICK,
J. M. COBY,
J. T. WHITE.

Done at Topeka, Kans., this 20th day of June, 1905.

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In order that this list may be completed the Kansas Farmer asks of its readers that they will send the names and addresses of the officers of such live-stock and kindred associations as they may know of. Feeding, range, and shipping associations may be included.

*Deceased.

J. W. Genning of Gracemont, Okla., has the following to say about the Kansas Farmer: "I would not do without it for four times the cost." There are many who receive sample copies of the Kansas Farmer that should consider "A word to the wise is sufficient." So confident is the management of the Kansas Farmer that every intelligent and progressive farmer who will read the paper a year will find it a good investment and become a permanent subscriber ever after that the Kansas Farmer Company offers a trial subscription in blocks of two to new subscribers the first year at half price, 50c each. "Whosoever will may come."

The McLaughlin Percherons in France.

A few weeks ago the Kansas Farmer stated that McLaughlin Bros., of Kansas City, Columbus and St. Paul, had purchased and now own in France more Percherons than were included in all their importations of 1905. These horses are the best that can be bought for money. This is shown by the fact that, at the great annual horse show held under the auspices of the French Government at Rouen last week, the McLaughlin Percherons won first and second prizes in every stallion class and first prize in collection, all draft breeds competing. These horses will be brought to this country in

time for exhibition at the principal State fairs, the American Royal and the Lewis & Clark Centennial Exposition.

Mr. James McLaughlin, who spends the greater portion of his time in France for the purpose of buying Percherons and French Coachers, seems to be a remarkable judge of horses and, with the unlimited resources at his command, is able to buy the best that are produced in that country. The only difficulty he experiences is in securing the good ones fast enough to meet the demands of their enormous trade in this country. Notice their big advertisement on page 665 and ask them about these horses.

Gossip About Stock.

Jas. Hopkins, Gordon, Kans., will sell registered Percheron and Standard-bred horses and Shorthorn cattle on July 10. Watch the next issue of the Kansas Farmer for particulars. Some good registered stallions go in this sale.

The Hereford cattle-breeders of Dickinson and Marion Counties, met at Hope, Kans., June 10, and organized a Hereford Breeders' Association, with W. H. Rhodes, Tampa, president, and J. B. Shields, Lost Springs, secretary. All persons of these respective counties who are interested in Whitefaces are requested to join the association. The first sale will be held at Hope in the sale pavilion, November 22, 1905.

Joseph Condell, Eldorado, Kans., has two strong registered bulls left that he is pricing at a very low figure considering breeding, age and individuality. Any of our readers that are in need of Hereford herd-headers should correspond with Mr. Condell at once. Don't use grade or unsatisfactory animals of any kind when good individuals of meritorious breeding can be had at the price he is offering these.

Hillcrest Farm, belonging to Geo. C. Mosher, Kansas City, Mo., writes as follows: "Hillcrest Farm has just sold, through the medium of the Kansas Farmer, to Mr. E. P. Riggie, of Eureka, Kans., the handsome Holstein show bull, Sir Josephine DeKol 30867, who traces to DeKol 2d with a record of 26 pounds 9 ounces of butter in seven days and 115 A. R. O. daughters, the greatest record of any Holstein cow in the world. Also to Helena Beuke, official record 25 pounds 7 ounces butter in seven days; and to Sir Henry of Maplewood, the greatest show bull in the breed. Mr. Riggie is to be congratulated on the possession of this

bull having records in his ancestry not only of enormous milk-production but of high-testing butter-fat records. A number of similarly bred bull calves at attractive prices as advertised in Kansas Farmer for sale."

One of the good herds of Poland-Chinas in the West, where the best herds are to be found, is the Dirigo Herd, belonging to J. R. Roberts, Deer Creek, Oklahoma. Among the up-to-date hogs now on the farm is a choice lot of serviceable boars that are offered at prices that can not help but be attractive. Mr. Roberts is one of the oldest and best-known Poland-China breeders in the Territory and his reputation is of the very best. Farmers and breeders who buy of him are sure of satisfaction, particularly at the prices now made. Note the change in his advertisement on page 664 and write him.

The Phillips County Herds of Red Polled cattle and Poland-China swine are flourishing. Mr. Chas. Morrison, the owner, states that he has been sold out of Red Polled bulls for more than a month and could have sold more if he had owned them. However, he has a fine bunch of young bulls coming on that were sired by his great herd bull, Actor 7781, and out of large, free milking cows. Mr. Morrison has just bought an assistant herd bull from J. McLain Smith, Dayton, Ohio. This is a calf by Cassenollette (8931) 10136, who was the best bull to be found in England that could be bought. The Phillips County herd still contains a number of bred and open heifers and young cows for sale. The latter are of good size and heavy milkers. Mr. Morrison has been breeding Red Polls for twelve years and has never been able to raise bulls fast enough to supply his trade. His Poland-Chinas are also doing nicely. They are out of sight in the alfalfa and as a consequence the litters are large, and the animals very vigorous with plenty of bone and size. Plenty of rain in Phillips County has made the crop prospects very fine. The second crop of alfalfa is ready to cut and all other crops are extra good.

The Merits of the Small Thrasher.

The sooner your small grain is threshed the better. For this there are several reasons. Every day the grain stands in the shock there is liability of injury from bleaching, rain, wind and wild fowls. The proper thing to do is to run the grain through the machine and get it to the elevator or granary at the earliest possible moment. This cannot always be done where farmers depend upon the regular threshing outfit, which must come in rotation, and you are just as apt to be at the end of the list as the beginning. No matter how willing the owner of the outfit may be to please you, he must take each farm in order. This year it may be more important than usual to get the threshing done early. There may be profit in threshing early and marketing before the full flush of the grain movement. At least the farmer could be ready to do this in a moment were the grain ready, and should conditions warrant.

How can early threshing be accomplished? By getting one of the small outfits now on the market and doing your own work. It may not pay for a small farmer to buy one for his own use exclusively, but several can unite and buy one to be used in common. Then owners can do their own threshing, and if they have time, can get back part or all the original cost by threshing for neighbors. Machines of various size can be obtained. Frank Cwach of Ulica, Yankton County, S. D., bought a 24-inch cylinder machine six years ago, and has used it ever since with great satisfaction. In good wheat he has threshed 400 bushels a day, oats 1000 bushels, barley 800 bushels. The crew consisted of one man to stack straw, two to pitch bundles, one to cut bands, one to haul away the grain (two when oats are to be thrashed), one to feed the machine and one to handle the horse power; eight horses were used. Two or three farmers can thus run an outfit without extra help. The gasoline engine, however, is being found very economical power to run these small threshers, and most of the farmers owning a small threshing outfit like this are using them for this purpose.

In northern Minnesota, near Hector, C. W. Ness is using a 32-inch cylinder machine with a wind stacker. This is about the right size for a man preparing one section of land. Mr. Ness says it works better than a big rig, runs steadily, and threshes clean, and does especially fine work with flax. He is convinced it is the best machine for one or more farmers to buy. An Iowa farmer, W. L. Orr, purchased a 32-inch cylinder thrasher and says he was much surprised at its efficiency. The first year he threshed 250 bushels of different kinds of small grain, and did the work as well as with a big outfit. The advantage of the small thrasher is that it is easily and quickly moved. "One day we threshed ten acres of oats, thirty-five acres of wheat and moved and set twice. The machine has not cost us one cent for repairs. At the end of the first season it was in perfect condition." There is no question as to the popularity of these small threshers. Their usefulness has been demonstrated again and again. They make farmers independent of the threshing combines. The farmer saves money on his own jobs, besides getting his grain out just when he wants it.

The Markets

Kansas City Grain Market.

The choice milling wheat sold readily at steady prices, but the medium and low grades were neglected. Prices were 1/4c lower in most instances. Receipts were moderate. The railroads reported 67 cars of wheat received, compared with 64 cars a week ago and 18 cars a year ago. Sales of car lots by sample on track, Kansas City: Hard wheat—No. 2, 1 car \$1, 1 car 99c, nominally 96c. No. 3 hard, 1 car 98c, 1 car 98c, 1 car 97c, 1 car 96c, 5 cars 95c, 4 cars 94c, 8 cars 94c, 5 cars 93c, 5 cars 92c, nominally 92c. No. 4 hard, 2 cars 94c, 1 car 90c, 1 car 87c, 1 car 86c, 1 car 85c, 3 cars 83c, 1 car 82c, 4 cars 80c,

1 car 78c, 1 car 77c, nominally 73c. Rejected hard, 1 bulkhead car 75c, 1 car 55c. Soft wheat—No. 2 red, nominally 98c. No. 1 car new sold, at auction, \$1.06; No. 3 red, 1 car 98c, 1 car mixed 95c, nominally 93c. No. 4 red, nominally 73c. No. 1 car mixed 93c. Rejected red, nominally 55c.

Feeders, elevators and local dealers were free buyers of corn. The offerings were moderate. Prices were steady to 1/4c up, mostly 1/4c higher. The railroads reported 81 cars of corn received, compared with 75 cars a week ago and 25 cars a year ago. Sales of car lots by sample on track, Kansas City: Mixed corn—No. 2, 1 car yellow 51c, 1 car 50c, 1 car yellow 50c, 28 cars 50c, 6 cars 50c, 2 cars 50c; No. 3, 1 car 50c, 4 cars 50c, 2 cars 50c; No. 4, 1 car 50c, 1 car 49c, 1 car 48c. White corn—No. 2, 7 cars 52c, 2 cars 51c; No. 3, 1 car 52c, 2 cars 51c. Oats sold readily at 1/4c higher prices. Receipts were light. The railroads reported 8 cars of oats received, compared with 25 cars a week ago and 9 cars a year ago. Sales of car lots by sample on track, Kansas City: Mixed oats—No. 2, 3 cars 29c; No. 3, 1 car 28c; rejected, 1 bulkhead car red 28c. White oats—No. 2, 1 car 32c, 7 cars 31c, 1 car color 30c; No. 3, 1 car color 30c, nominally 30c.

Rye—No. 2, nominally 65c. Corn-chop—Nominally 94c in 100-lb sacks.

Timothy—Nominally \$2.60 per 100 lbs.

Flaxseed—Nominally \$1.15.

Bran—2 cars 70c.

Shorts—Nominally 75c.

Millet—Nominally \$1.05 per cwt.

Red clover and alfalfa—\$9.11.50 per 100 lbs.

Cane-seed—Nominally \$1.05 per 100 lbs.

Kafir-corn—1 car 82c cwt.

Linsed cake—Car lots, \$27 per ton; ton lots, \$28; per 1,000 lbs, \$15; small quantities, \$1.60 per cwt. Bulk oil cake, car lots, \$26 per ton.

Castor beans—\$1.35 per bushel in car lots.

Barley—No. 3, 1 car 42c.

Kansas City Live-Stock Market.

Kansas City, Mo., Monday, June 19, 1905. Cattle prices kept their downward course last week, knocking out some more of the props that have been supporting the faith in a strong market for good beef steers. Of course, prime cattle sold better than any other class, and besides, \$5.90 was bid for a drove of fancy steers, the highest price in two or three weeks, but for all that, the market closed the week 10c to 25c lower on killing cattle. Cheap quarantine cattle were an exception, and gained 10c to 20c, but this was merely putting them back on a fair basis with the natives, they having been unjustly hammered the previous week.

The supply of cattle to-day is 8,000 head here, moderate at all points except Chicago, which market reports prices weak to 10c lower, account of heavy run. Prices have opened weak but the market averages steady with the close of last week. The hot weather is cutting down consumption of meats, which is having its influence on prices, and the situation at this season is always one of depression on medium cattle, as the range cattle begin to move in large numbers. Receipts are running over 30,000 a week, and will soon creep up to 40,000, and this increase is always accompanied by a settling of prices, for everything except the choicest cattle. Bulk of beef steers sell at \$4.65 to \$5.50, heifers and yearlings \$3.75 to \$4.75, cows \$3.25 to \$4.50, bulls \$2.35 to \$4.25, veals quarter higher, \$4.50 to \$6, stockers and feeders 10c to 25c higher, \$3.40 to \$6, most on stockers.

Liberal receipts of hogs have failed to hurt prices much. Last week closed with prices in the same notch with the close of previous week, although the market sagged a little in the middle of the week. Prices to-day are weak to 5c lower, top \$5.32 for lights, medium and heavy hogs a shade under that, but all weights continue selling within a nickle range, and full range of sales not over a dime most of the time. Demand is first class, and markets active.

Sheep receipts are lightening up, run of grassers from Texas about over, Arizona still sending a few, but supply from Utah and Idaho not yet started; no other territory furnishes much stuff at this season. Some native stock is coming, and prices advanced about 25c on everything last week. Native ewes sell at \$4.25 to \$4.75, wethers and yearlings \$4.75 to \$5.50, spring lambs \$6 to \$7. Good stock ewes and wethers range from \$3.25 to \$3.75. Some range goats are coming, at \$3 to \$3.25, for the country. J. A. RICKART.

South St. Joseph Live-Stock Market.

South St. Joseph, Mo., June 19, 1905. There were too many cattle in sight to-day; receipts at the five leading markets aggregated 44,200 as compared with 27,500 last Monday. The great proportion of the number of cattle in sight was centered in Chicago and the excessive supply again forced values to a lower level. Local receipts were not large, but in sympathy with the decline reported from other markets, prices generally ruled 10c under the close of last week. The decline was on all grades, very few good, heavy cattle were offered, the supply being mostly light and medium butcher and dressed beef steers of fair to pretty decent quality, however there was a fair supply of steers in the quarantine division which met a strong demand and prices held fully steady regardless of the unfavorable conditions prevailing on the native side. Good to choice weighty fed cows and heifers were in nominal supply, and prices ruled about steady on all other classes of cows, prices were mostly 10c to 15c lower, common to fair grassers suffering the most. Bulls and veals were unchanged. The stocker trade started out briskly with the demand very strong for all classes of offerings. The demand for good to choice fleshy feeders having some weight as well as for the good to choice yearlings and calves and good twos. The country seems to have more faith in the future than a month ago and are buying quite freely, buyers of the better class of feeding steers and a good many more than are coming could be sold to advantage. There was a little better inquiry to-day for thin young country-cows and stock heifers, but the demand was not sufficient to put any strength in values. Stock bulls are in fair demand and unchanged.

Special Want Column

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

CATTLE.

SIX SHORTHORN BULLS—12 to 16 months old, eligible to registry, mostly reds, all sired by British Lion 138892 and out of the finest breeding mixed Bates, Booth and Cruikshank. Price, \$40 each if taken soon. Address D. P. Norton, Dunlap, Morris County, Kans.

FOR SALE—My entire herd of registered Shorthorn cattle, consisting of 19 head of the Bates, Pomona, Marys, Primrose, and Scotch topped families, all of the large beef type; straight red. Address W. H. Shoemaker, Route 2, Narka, Kans.

HOLSTEINS—Bull calves cheap while they are little. H. B. Cowles, Topeka, Kans.

FOR SALE—Red Polled cattle, male and female. D. F. VanBuskirk, Blumound, Kans.

YOUNG HOLSTEINS—Both sexes; from butter-bred cows and descendants of Sarcastic Lad, World's Fair Champion and other selected sires. Attractive prices. Hillcrest Farm, Greenwood, Mo.

FOR SALE—10 Registered Galloway bulls, cheap. J. A. Darrow, Route 2, Miltonvale, Kans.

FOR SALE—Eight good, registered Shorthorn bulls, four straight Cruikshank, good ones, and prices right. H. W. McAfee, Station C, Topeka, Kans.

FOR SALE—A 2-year old Shorthorn bull, sired by Royal Bates. Address Dr. N. J. Taylor, Berryton, Kans.

HORSES AND MULES.

TO TRADE for good Jennets, good registered standard-bred stallion. H. T. Hineman, Dighton, Kans.

STRAY MARE—A black mare came to Wm. Cook's residence, one-half mile east of the city of Downs, Kans., on or about the 10th day of October, 1904, weight about 900 pounds, age about 8 years, worth \$40; branded on the left shoulder; owner or owners will please come, prove property and pay expenses.

SWINE.

DUROC-JERSEY PIGS—125 head, both sexes. Four brood sow lines of breeding. Sires, Red Chief I Am, Red Banker and Van's Perfection. N. B. Sawyer, Cherryvale, Kans.

FOR SALE—Say! I have some fine, big-boned, broad-backed Berkshires, brood sows or pigs. Want some? Write me; turkeys all sold. E. M. Melville, Eudora, Kans.

FOR SALE—Boars for immediate use. Sons of Perfect I Know, out of daughter of Ideal Sunshine. Geo. W. Maffet, Lawrence, Kans.

AGENTS WANTED.

MONEY IN EGGS—Eggs may be bought while cheap and put away for winter use. A lady started with \$10, bought eggs at 8 to 10 cents in summer, preserved them and sold in January. Her profit for two years was \$16,300. Why not make money on eggs yourself? To preserve them costs 1/2 cent per dozen. But any person can get the desired information by addressing the Chemical Supply Co., 827 Quincy Street, Topeka, Kans., enclosing 14 two cent stamps.

WANTED—Canvassers for a fruit can holder and sealer. Territory given. J. W. Adams, 741 Tennessee, Lawrence, Kans.

AGENTS WANTED Sell 1st bottle Sarsaparilla for 35c; best seller; 200 per cent profit. Write today for terms. F. R. Greene, 115 Lake St., Chicago.

SEEDS AND PLANTS.

PLANTS FOR SALE—Strawberry, blackberry, dewberry, rhubarb, grape-vines. Write for special prices. Address J. C. Banta, Topeka, Kans.

FOR SALE—Seed Sweet potatoes; 6 kinds; write for prices to I. P. Myers, Hayesville, Kans.

FOR SALE—Speltz, 60c bu. f. o. b. Two registered Galloway bulls. Wheeler & Baldwin, Delphos, Kans., or S. B. Wheeler, Ada, Kans.

SEED CORN—Both white and yellow at 90 cents per bushel; cane, millet and Kafir-corn seeds. Prices and sample on application. Adams & Walton, Osage City, Kans.

FOR SALE—Speltz, 60 cents per bushel; Soy-Beans, \$1.25; Red Kafir-Corn, 50 cents; sacks free in ten bushel lots. Seed extra nice and clean. O. M. Garver, Abilene, Kans.

Stray List

Allen County—J. W. Kelso, Clerk. HORSE—Taken up by C. C. Thompson, in Cottage Grove tp., May 29, 1905, one 10-year-old blk horse, white hind feet, star in forehead, spavined both hind legs; valued at \$15.

Light and light mixed hogs are now selling to a little better advantage than the heavier grades as was predicted in our previous letters and a wider spread is also noted in prices. The market to-day under pressure of heavy receipts at all points was 5c to 7c lower, light and light mixed selling at \$5.20 to \$5.32; medium and heavy at \$5.12 to \$5.27; and the bulk selling at \$5.24 to \$5.27. A little bullish sentiment has developed among traders owing to the fact that farmers will soon be very busy in the harvest fields which will have a tendency to check receipts; should this be the case it is quite probable that values will work upward, but inasmuch as the country seems to be full of hogs, shippers should not allow this bullish sentiment to influence their buying in the country. It is also well to again caution the country regarding the loading of hogs as there are altogether too many dead hogs arriving. This is due to overloading as well as to failure of shippers to exercise proper care in cleaning and bedding their cars. The demand here is excellent, buyers taking heavy receipts daily and acting as if they wanted more. There is no change of note in the sheep market, the demand is very strong, woolled lambs are quotable around \$6.90 to \$7.10, shorn lambs \$5.90 to \$6.15, while sheep are selling from \$3.25 to \$5.50. WARRICK.

FARMS AND RANCHES.

FOR SALE—The best fruit and dairy farm of 80 acres in Kansas, 40 miles drive from Topeka, finely improved, large barn, 7-room house, 8 chicken houses, large young orchard, hanging full of choice varieties of apples, 400 peach trees, 2 acres grapes, 1 acre blackberries, 50 cherry trees and other fruit in smaller quantities, 10 acres alfalfa, 8 acres clover and timothy, 25 acres tame grass, pastured, 2 acres Kaw bottom in potatoes, 15 acres corn, 5 acres in cane and millet, enough timber for fuel and posts. The above is a very pretty and picturesque place on rural free delivery and telephone; cannot be beat for a home. Also sell the cows and horses, implements, etc. My health will not permit me to farm, the reason for selling. Can give terms on part, equal to or better than rent at 6 per cent. Will give possession as soon as a deal is made. Address K. F. D., care Kansas Farmer, Topeka, Kans.

FOR SALE—In Osborne, Russell, and Rooks Counties, improved farms, pasture lands, two twelve hundred acre ranches, mercantile stocks. Will trade one ranch for good stock hardware and implements. We can please you, write to-day. Otis & Smith, Natoma, Osborne Co., Kans.

NICE HOMES—Cheap 80 acres all level bottom land, no better land anywhere, owner estimates improvements at \$5,000. Price, \$4,200. Four miles from town, 320 acres, 6-room house, barn and out-buildings, 100 acres cultivated, \$4,500. 316 acres, well improved with buildings, 40 acres alfalfa, 20 acres timothy and clover, 10 acres of blue-grass. Price, \$7,900. We have a few places that we can sell on very liberal terms. Try us, at Florence, Minneapolis or Salina, Kans. Garrison & Studebaker.

A BARGAIN—320 acres Wakarusa Valley, Shawnee Co., Kansas; 200 acres bottom, first-class buildings, \$40 per acre. H. C. Bowman, Topeka, Kans.

FOR SALE OR TRADE—5 good lots in county seat town in Oklahoma; will trade for western land. Price, \$1,000. Box 27, Waurika, Okla.

FOR SALE—Good farm and pleasant home, one-half mile from county high-school and city public school, three-fourths of a mile from several churches and stores, 2 grain elevators and stations. Farm consists of 800 acres, adapted to farming and stock raising, good 9-room house, with water, bathroom and good cellar, ice-house, tool-house, barns and sheds sufficient to hold 40 tons of hay and 150 head of cattle and horses, alfalfa, shade and fruit trees. Farm can be divided. Price, \$15 per acre. Call on or address the owner, Box 192, Wakeney, Kans.

BARGAINS in good grain, stock and alfalfa farms. J. C. Burnett, Emporia, Kans.

FOR SALE OR EXCHANGE—Land, merchandise and city property. Let me know what you want to buy sell or trade. A. S. Quisenberry, Marion, Kans.

FIFTY farms in Southern Kansas, from \$15 to \$70 per acre; can suit you in grain, stock or fruit farms. I have farms in Oklahoma, Missouri and Arkansas for sale or exchange. If you want city property, I have it. Write me. I can fix you out Wm. Green, P. O. Box 986, Wichita, Kans.

FOR SALE—200 acres fine pasture land, 175 acres of it mow land, two miles from Alma, living water that never fails, all fenced. This is a bargain if taken soon. Call on or address Mrs. M. A. Watts, Alma, Kans.

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

Sumner County Farms

Call on or write to C. L. Stewart, Wellington, Kansas for a list of Sumner County Farms.

I CAN SELL YOUR FARM, RANCH OR BUSINESS, no matter where located.

Properties and business of all kinds sold quickly for cash in all parts of the United States. Don't wait. Write to-day, describing what you have to sell and give cash price on same. A. P. TONE WILSON, JR., Real Estate Specialist, 413 Kansas Ave., Topeka, Kans.

FARM LOANS

Made direct to farmers in Shawnee and adjoining counties at a low rate of interest. Money ready. No delay in closing loan when a good title is furnished and security is satisfactory. Please write or call.

DAVIS, WELLCOME & CO., Stormont Bldg., 107 West 6th, Topeka, Ks.

SPECIAL BARGAINS

1,170 acre highly improved Eastern Kansas farm to exchange for city property. We have a cash customer for 5,000 to 8,000 acres of Western Kansas land; must be a bargain. We have a telephone exchange which shows 20 per cent net profit for sale. Some good clear real estate to exchange for oil stock in producing company. We make a specialty of exchanges and would like to list anything that you have to trade. The Great Western Brokerage Co., Topeka, Kans.

POULTRY.

FOR SALE—White Wyandottes, 45 hens and pullets, 10 roosters. The Thos. S. Lyon stock. Whole bunch very cheap. 1401 College Avenue, Topeka, Kans.

MISCELLANEOUS.

BLACKSMITH WANTED on large ranch to do general repair and farm blacksmithing. Permanent employment. Address Deming Investment Co., Oswego, Kans.

WANTED—A man and wife, to help with dairy farm and housework. Write stating references, and wages wanted. Address Lock Box 15, Bucklin, Kans.

FOR SALE—A second-hand surrey, cheap. E. B. Cowgill, Kansas Farmer Office.

WANTED—Girl for general house work. No washing. Mrs. E. B. Cowgill, 1325 Clay Street, Topeka, Kans.

HONEY New Crop about July 1. Ask for prices. A. S. PARSON, 403 S 7th Street, Rocky Ford, Colo.

WANTED—Middle-aged woman with no incumbences to do house work in a family of three. B. J. Linscott, Holton, Kans.

FOR SALE—Second-hand engines, all kinds and all prices; also separators for farmers' own use. Address the Geiser Mfg. Co., Kansas City, Mo.

WEEKLY WEATHER CROP BULLETIN

Weekly weather crop bulletin for the Kansas Weather Service, for the week ending June 20, 1905, prepared by T. B. Jennings, Station Director:

GENERAL CONDITIONS.

The dry, warm weather of the preceding week extended over the first part of the current week. Good rains fell quite generally in the State on the 15th and 16th except in the central eastern counties and the southwestern counties. The heaviest rains fell diagonally across the State from the northwestern to the southeastern counties, in which area many hailstorms occurred.

RESULTS.

EASTERN DIVISION.

Wheat is progressing as far north as the Kansas River. May wheat is being harvested north of the river. Harvest is finished in Chautauque, Montgomery and Bourbon and thrashing has begun in Chautauque County, developing a fair yield and a good berry. Corn has grown rapidly, and in Chautauque County the early corn has tasseled. The cornfields have been well cleaned and many in the southern counties have been laid by. Sweet corn for table use, is being marketed in Chautauque County. Oats are generally well headed, though on short straw, and are now ripening in the central and southern counties. Prairie-grass is doing well and pastures are good. The second crop of alfalfa is about

Rainfall for Week Ending June 17, 1905.



SCALE IN INCHES:

Less than $\frac{1}{4}$. $\frac{1}{4}$ to 1. 1 to 2. 2 to 3. Over 3. T. trace.

ready to cut and is a good crop. Potatoes growth has been checked by dry weather in Brown and Riley Counties but elsewhere the crop is good. Apples are doing well; the early apples are ripe in the southern counties and ripening in the central. Flax is doing well, and in Crawford is in bloom. Webworms have appeared in some fields in Greenwood and Pottawatomie Counties.

Anderson County.—Corn making fine growth and generally clean; many fields laid by; wheat-cutting in progress; wheat has good quality and is in fine condition to harvest; oats ready to cut within next ten days; gardens needing rain very much.

Atchison.—Crops doing well and benefited by recent rains; corn cultivation in progress; wheat harvest will begin in a few days.

Bourbon.—Fair crop of wheat; harvesting of this crop about done; flax and oats are in good condition; good prospect for corn; potatoes fine; timothy short; prairie-grass good; pastures in good condition and stock doing well.

Brown.—Beneficial rains; soft wheat being harvested; hard wheat turning and in very good condition; oats in fair condition; corn making good growth and fields generally clear; clover being put up; raspberries ripening; gardens and potatoes injured by dry weather.

Chase.—Rain would be beneficial although crops are generally in good condition; wheat harvest has commenced and the crop is good; oats doing well; alfalfa in stack and second crop doing well; potatoes and garden products of other kinds damaged by "army worm"; Kafir-corn and millet improving; cherries ripe.

Chautauque.—All crops doing well; wheat being thrashed and will give good yield; the earliest corn is now tasseled; sweet corn now in use; second crop of alfalfa nearly all cut; prospects for oats better than expected.

Coffey.—Good week for haying and for wheat harvesting; corn growing rapidly but rain would be beneficial for this crop; potatoes need rain.

Crawford.—Beneficial rains; weather conditions very good; wheat harvesting progressing well and almost completed in some localities; oats doing well; corn clean and making rapid growth; grass in good condition; apples doing well and early varieties about ripe; blackberries ripe; flax looks well and is in bloom.

Doniphan.—No wheat cut thus far; weather too dry for corn and much replanting in progress; light crop of oats expected.

Douglas.—Wheat harvest has commenced; quality of wheat is good; corn is somewhat backward but looks well; oats and flax doing well; grass improved by recent rains.

Franklin.—Crop prospects good although rain would be beneficial; wheat and oats looking well; corn doing well.

Greenwood.—Corn making good growth and looking well; wheat harvest in progress and the crop is in good condition; second crop of alfalfa ready to cut; early potatoes doing well; grass in good condition notwithstanding dry weather; damage to corn by web-worm in some localities; oats doing well.

Lincoln.—Wheat harvest begun; corn growing rapidly but will soon need rain.

Lyon.—Wheat ripening rapidly; corn making rapid growth; weather too dry for grasses.

Marshall.—Oats, wheat, rye, and spelt doing well; some wheat and rye will be cut by the 25th; corn cultivation progressing and the crop is in good condition; pastures good and stock doing well; gardens and potatoes improved.

Montgomery.—Wheat in shock doing well and has good berry; fair yield indicated; corn cultivation progressing and the crop is making good growth; some slight damage to corn by windstorm.

Morris.—Good week for farmwork; wheat harvest begun; barley and oats needing rain; corn making good growth and in fine condition.

Osage.—Wheat, oats and grass doing well; corn making good growth but has suffered

some damage from insects, unknown to planters.

Pottawatomie.—Timely and beneficial rains; soft wheat nearly all in shock; hard wheat harvest will commence this week; crop generally good; corn and sweet potatoes seriously threatened by webworm; injury to alfalfa, also, from this cause.

Riley.—Wheat harvest begun and yield promising; pastures beginning to show effect of dry weather; potatoes needing rain and crop will be short; corn improving.

Shawnee.—Wheat filling well and almost ready to harvest; oats short in straw but filling well; corn cleaned well by cultivators and making good growth; early potatoes and timothy hay cut short; gardens, pastures and meadows good; early apples nearly ripe; peaches and grapes making satisfactory growth; plenty of Russian mulberries.

Woodson.—Wheat harvest delayed by rain; corn growing well; oats well headed but short.

MIDDLE DIVISION.

Wheat harvest has begun as far north as the Smoky Hill River; wheat generally is in good condition though some injury has been done by hailstorms. Rye harvest is progressing in Clay County and barley harvest has begun in Barber County. Corn has made a good growth this week and the fields are clean. Early corn is beginning to tassel in Sumner County. Oats are headed in the northern counties and are ripening in the southern. Spelt is headed in Washington County and needs rain in Harper. Grass generally is good. The second crop of alfalfa has grown rapidly and is now nearly ready to cut. Apples generally show a fair prospect, though in Butler and Cloud Counties they have dropped rather freely. Early apples are ripe in Cowley County. Potatoes are good. Web-

worms have appeared in some fields in Kingman and Reno Counties.

Barber.—Wheat and barley cutting commenced; cane and corn needing moisture; grass not doing well; garden products need rain.

Barton.—Wheat harvest begun and will be general next week; corn generally well cleaned; second crop of alfalfa blooming and nearly ready to cut.

Butler.—Crops of all kinds looking well; most corn cultivated third time and is clean; second crop of alfalfa short; oats in good condition; wheat doing well and harvest will begin next week; grass looking well; small crop of apples expected; rain needed for corn crop.

Clay.—Wheat harvest will begin in a few days; quality expected to be good; rye being cut today; corn doing well except a few fields which have been damaged by cut worm.

Cloud.—Wheat damaged in some localities by high wind; harvesting will begin about the twenty-fourth; corn growing rapidly; oats heading but crop will be poor; apples dropping; cherries ripe but not plentiful.

Cowley.—Wheat harvest progressing well although delayed by rain in some localities; much wheat in stack and thrashing begun; second crop of alfalfa being cut; early apples in market; pastures good.

Ellsworth.—Some damage to crops by high wind and hail.

Harper.—Wheat ripening rapidly and doing well; oats and spelt need rain; where corn is weedy it is suffering; wheat harvest progressing well and thrashing will begin next week.

Harvey.—Good week for corn cultivation; wheat harvest will begin in a few days; the crop is in good condition and filling well; oats short but well headed; pastures good and cattle doing very well.

Jewell.—Beneficial rains; corn is clean and growing well; first crop of alfalfa nearly all in stack.

Kingman.—Wheat harvest in progress; wheat thin on ground and straw short but quality is very good; grass making good growth; corn doing well although it has suffered some injury from web worm; garden products injured by same cause; early planted corn doing well.

Lincoln.—Wheat harvest begun; wheat and other crops sustained great injury from destructive wind and hail storm.

McPherson.—Beneficial rains; wheat harvest begun and will be general latter part of coming week; corn making rapid growth; alfalfa improved.

Marion.—Crops damaged in some localities by hail storm; wheat harvest begun; oats improving; corn growing rapidly and free from weeds and grass.

Ottawa.—Good week for corn cultivation; wheat is of good quality and harvest will begin next week; oats doing well; second crop of alfalfa will soon be ready to cut; cattle doing well.

Pawnee.—Wheat nearly ready for harvest; corn growing rapidly and looking well; sorghum and Kafir-corn doing well.

Phillips.—Recent heavy rains have retarded corn cultivation but have greatly benefited wheat; alfalfa doing well and first crop harvested; good crop of potatoes.

Reno.—Wheat harvest begun; oats looking fairly well; corn doing well and cultivation progressing; corn fields generally very clean; web worms have damaged corn, alfalfa and garden products in some localities and have injured sweet potatoes.

Republic.—Wheat ripening rapidly but shows some red dust and straw is short; this crop has been damaged in some localities by Hessian fly; oats have short straw; corn growing rapidly; first crop of alfalfa in stack and second crop will soon be ready to cut; potatoes doing well.

Rush.—Wheat ripening and harvest will begin next week; corn and spring crops making good growth.

Russell.—Beneficial rains; prospect for wheat much better although this crop suffered great injury from wind and hail in northern por-

tion of country; other crops were damaged also in that portion of the country but otherwise they are doing very well.

Sedgwick.—Wheat harvesting progressing but has not become general thus far; quality of wheat generally good; recent rain has been beneficial to oats, corn and gardens; weather conditions favorable for growth of corn.

Stafford.—Wheat harvest begun; corn doing Summer.—Crops of all kinds doing well; wheat harvesting will be in progress generally in a few days; corn growing rapidly and looks well; some beginning to tassel; second crop of alfalfa ready to cut; potatoes doing well.

Saline.—Wheat and other crops greatly damaged by hail and wind storm in some localities.

Washington.—Farmwork delayed by wet weather; corn growing rapidly; wheat beginning to ripen; oats and spelt mostly headed; potatoes benefited by rain; fair prospect for apples; second crop of alfalfa growing rapidly.

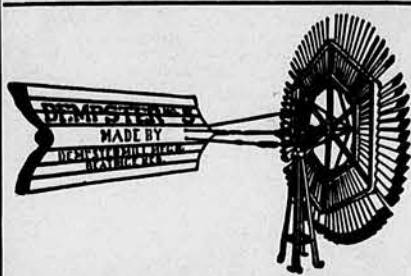
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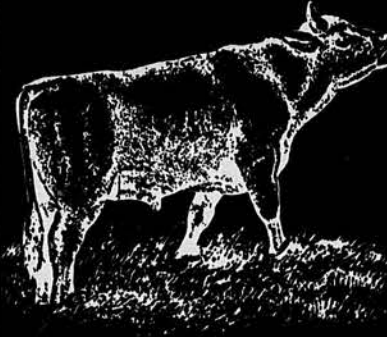
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The Kansas Farmer is the official paper of the Kansas State Grange.

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Join the Grange because it recognizes every want and its platform is broad enough to support every interest of the farm. It is a moral, social, educational, cooperative, patriotic institution. It is entirely non-sectarian and non-partisan. Its teachings are founded on the Bible. Bad morals are not tolerated in its members, and it seeks to produce the highest citizenship. The social feature of the Grange affects the isolation of the farm and the disadvantages arising therefrom. Where there is a live grange, the boys and girls are not so anxious to leave the farm.—Grange Bulletin.

Grange Notes.

The Grange affords the best possible agency for farmers to cooperate in business. It is the pioneer in this movement.

The Oregon State Grange assembled in its thirty-second annual session, at Forest Grove, May 23. The committee on legislation recommended, among many other excellent things, the extension of free delivery of mails in the rural districts, postal savings banks, parcels post, telephone and telegraph in the mail service, and for National and State aid to improve the public highways. This is to be laid before the National Grange at its next meeting.

Oak Grange will "picnic" on the Fourth of July.

The annual picnic of Berryton Grange will take place next month. Due notice will be given.

We send fraternal greetings to the "silent granges" of our State.

Grange Influence.

"The Grange is to the farmer's family what the school is to the student or the teachers' institute is to the teacher. It is a school of instruction along the especial line that most interests, and is of the most vital importance to them and their interests, both in agriculture and what is being done in governmental affairs. If you go into a neighborhood that has a progressive grange, you find its members to be a bright, well-informed people, able to talk on any subject intelligently.

"The Grange has also a refining influence, giving its members confidence, and schooling them so they can meet on an equality those who have had social advantages over the farmers in the past, and to me one of the most important and pleasant features is the social part. In the Grange we are brothers and sisters, and how pleasant it is to meet and clasp each brother or sister by the hand in fraternal greeting. It seems to me we can not meet and exchange greetings and thought, and separate and go to our homes without being better men and women each time we meet. Then comes the fraternal part of the Grange, binding us together so strongly that we feel the sorrow or pleasure, the loss or gain of our brother or sister as though in some way it was partly our own. Then the Grange is not a selfish order, for how gladly we would reach out and clasp the hand of every farmer and

wife and welcome them into our noble order, knowing they would be the gainer and would help the order to greater strength, for the larger our number the greater our influence. For we can and should be the power behind the throne."

Mrs. BEATTY.

Cardington (Ohio) Grange.

Grizzly Bears and Panthers.

"In the mountains of Wyoming, where I have hunted for years, you can find most any kind of savage animal that you get in America except alligators. Grizzlies, black bears and mountain lions are commonly killed there," says Hugh Snively of Sheridan, Wyo. "Some of the men that come out there to hunt think that if they stir one hundred yards away from camp they must be armed to the teeth for fear of being attacked by a bear or a 'painter' and killed. There's a heap more danger of getting killed on account of leaving your gun at home when you go down Market Street. Some one might shoot you on the street in a big city, but it is dead sure that a bear or a mountain lion will never attack you unless you drive him to it.

"I've hunted through the best districts for big game in this country, and I've seen a good many grizzlies, but I've never seen one of them go after a man unless he was cornered or wounded. If you run into a grizzly bear in a lonely place you'll hear a grunt, something like that of a mammoth hog, and then there will be a mighty crashing of underbrush as he makes off in the opposite direction as fast as he can go. All you can generally see of a mountain lion is a tawny streak as he makes off at incredible speed. If he has any intention of going after you it must be his intention to go around the world and catch you in the rear, for if you are standing in the east of him he is sure to go due west.

"Mountain lions in the winter time will follow sleighs at a distance, waiting as they go, but there is nothing in that to inspire terror, for I don't think they have ever been known to close in on anybody. Their terror of human beings is the thing which makes them hard to shoot. In all the time that I have been in the mountains I have never heard of anyone being attacked by a wild animal that has been left strictly alone. But I've known men to be killed even by deer when the brute was driven to desperation.

"Grizzlies are the best game in the world. When you once get their dander up they are savage fighters, and the hunter's life is in danger every minute unless he is a good shot and has a steady nerve. If you ever get within reach of the grizzly's paw you are a dead one. These stories of men killing them with knives in hand-to-hand fights are about as unreasonable as it would be to talk of stopping a locomotive by getting in the way of the train. If the big fellow gets the chance to deliver one blow it is all over. There was a grizzly up our way that the cowboys called Big Ben who killed about 150 steers before he was finally shot. He would break a steer's neck at one blow, and then he would lift him up and carry him off to some secluded place. Grizzlies look awkward, but they are mighty light on their feet, and they can beat any man in a foot race."

The most attractive Eastern excursion during the coming summer, will be to Asbury Park, N. J., on occasion of the annual meeting of National Educational Association, July 3 to 7, inclusive, via the Nickel Plate Road and its connections—either the West Shore or Lackawanna Road, with privilege of stopover at Chautauque Lake points, Niagara Falls and New York City. Rate \$21.35 for the round-trip. Dates of sale, June 29 and 30, and July 1 and 2, with extreme return limit of August 31, by depositing ticket. Patrons of this route, may have the choice of a ride over the most interesting mountain scenery in New York and Pennsylvania, and through the celebrated Delaware Water Gap, or through the beautiful Hohawk Valley and down the Hudson River, which also includes the privilege of a ride on day line boat on Hudson River, between Albany and New York City, in either direction, if desired. No excess fare charged on any train on Nickel Plate Road. Meals served in Nickel Plate dining-cars, on American Club Meal Plan, ranging in price from 35c to \$1; also a la carte. Chicago Depot, La Salle St. Station, corner Van Buren and La Salle Sts. City ticket offices, 111 Adams St. and Auditorium Annex. For further particulars, address John Y. Calahan, General Agent, 113 Adams St., Room 238, Chicago. No. 7.

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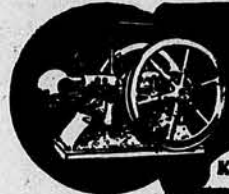
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