Established 1863. $1 a Year

Volume XLIII. Number 20

TOPEKA, KANSAS, MAY 18, 1905

KANSAS FARMER.

Established in 1863.

Published every Thursday by the
KANSAS FARMER CO., - - TOPEKA, KANSAS

E. B. COWGILL.....President
J. B. MCAFEE.....Vice President
D. C. NELLIS.....Secretary and Treasurer

SUBSCRIPTION PRICE: $1.00 A YEAR

E. B. COWGILL.....Editor
I. D. GRAHAM.....Associate Editor
H. A. HEATH.....Advertising Manager

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

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The Belleville Telescope, published by A. Q. Miller, prints a list of nearly 300 subscribers who have uninterruptedly taken the Telescope for more than a quarter of a century. Only a good paper can thus hold its friends.

The United States Department of Agriculture issues a monthly list of publications for the information of farmers and others. In the issue for April, 1905, we find the following publications whose authors were formerly connected with the Kansas Agricultural College: "Information Concerning the Milch Goats," by George Fayette Thompson; "Coyotes in Their Economic Relations," David E. Lantz; "North American Species of Agrostics," A. S. Hitchcock; "Copper as an Algicide and Disinfectant in Water Supplies," Karl F. Kellerman; "United States and State Standards for Dairy Products," Ed. F. Webster; "Report on Gipsy Moths and Brown Tail Moths," C. L. Marlatt. There are more than 50 people in Washington who were formerly connected with the Kansas Agricultural College, though some of those included in this count are married ladies whose husbands only are employed by the Government.

In Mr. Skinner's article on "Good Roads Right Now," on page 515 of the KANSAS FARMER, issue of May 11, 1905, occurs this statement, "The cost of keeping this road in good order should not exceed $3 per month." It should read, "The cost of keeping this road in good order should not exceed $3 per mile each year." This makes a very material difference. We should like to hear from others of our readers concerning the ideas advanced by Mr. Skinner in his interesting article.

THEY LET THE CAT OUT.

The Kansas City Implement and Hardware Club condemns the Esch-Townsend bill for the regulation of railroad charges on the ground that "it would give the smaller towns a much better show; as, if rates were based entirely on mileage, smaller cities, such as Sedalia, Wichita, and Oklahoma City, would be able to sell goods as cheap, or cheaper than Kansas City." There would be nothing to prevent the extension of these advantages, so much dreaded by Kansas City, to Topeka, Salina, Hutchinson, Winfield, Arkansas City, Junction City, Abilene, Concordia, Sterling, Great Bend, Medicine Lodge, Garden City, and, indeed, to every community in Kansas. This suggests the inquiry whether the whole of Kansas and Oklahoma, and large sections of Missouri and Texas exist solely for the benefit of Kansas City dealers, or whether they may not have some rights to the promotion of their own interests?

Local dealers in Kansas as well as wholesalers in Kansas City and St. Louis have been much disturbed in their minds about the development of the mail-order business with its tendency to concentrate at Chicago. The unjust freight-rate discriminations in favor of Chicago have a powerful influence in building up these mail-order houses, and unless there shall be found some means of establishing equitable freight rates, the mail-order business will continue to eat up the cash trade so much desired by local dealers.

But, people throughout the country are entitled to a "square deal" and they will insist on having it sooner or later. The fear is that postponement of the "square deal" on account of inability of the railroads to give it—being deterred by the manipulations of great shipping centers like New York, Chicago, and, in a smaller way, Kansas City—and on account of failing to obtain relief through Government regulation, the people of the country will turn precipitately to the plan of Government or State ownership, blinding their eyes to the dangers of rash proceedings. It is possible that the not distant future will find representatives of railroad interests lined up with the advocates of Government regulation—even commission-made rates—as the preferred alternative of Government-owned railroads.

In any case, it will be well for the enlightenment of the general public if those commercial bodies which hold that rates must continue to be arranged on a "commercial basis" shall speak as frankly as did the Kansas City dealers in admitting that reforms now under discussion would give to the smaller towns advantages equal to their own. They have certainly let the cat out of the bag.

But, why is it always assumed in some quarters that Government-made rates will be unjust to the railroads? The great people of the United States, in demanding the square deal for themselves, have no intention of doing injustice to any interest. The railroads have nothing but ghosts to fear from the square deal.

WILL MODERNIZE THE HOME.

EDITOR KANSAS FARMER:—I read with interest your article on the Farm Home and Modern Conveniences. I have lived thirty-five years in the same house and expect to overhaul and modernize it this summer, bringing it up to date and putting in all conveniences you have named in your article of April 27, including furnace. I would like to have a vault in which to keep papers and valuables that we would lose in case of fire, and if I can find something to suit me, I would like to have a plant for light.

Please tell me what the cost would be for an air-compression plant—as I don't like the tank and windmill proposition; also something about a plant for light. I will enclose an envelope (stamped) so that you can answer direct, or if you intend to write any more on the same subject I can wait until it comes out in the FARMER, provided you answer these questions, as it will be some time before I commence.

Morris County. J. C. HUME.

The remodeling of a house is a serious matter. The writer speaks from experience as well as from observation. The expense of overhauling is usually beyond all expectation. An instance in Topeka is typical. The house was a fairly good one but not just adapted to the present needs and circumstances of the family. The foundation was made about two feet higher; the porch was replaced by a prettier one; a new chimney was built; one side of an ell was set out a few feet, and some changes of the interior arrangements were made. The contract was let to an excellent builder. As the work progressed, changes that had not been contemplated when the contract was let were desired. They added to the cost. When the work was done, the house was most satisfactory. But, the owner, after paying the bills, compared their aggregate with a bid he had procured on a new house just such as he had made of the old one. The comparison showed that he would have been $300 better off if he had given the old house away and built new from the ground up. So, also, the contractor found that he had lost $200 on the job. Not all rebuilding is as expensive as this. But, having had some experience in earlier years, the writer, when his family needed more room, etc., sold his home to a family for whose needs it was suitable and built new. He thinks he saved money thereby.

But, on a farm, especially, one does not like to sell the home. The location, the surroundings, and the house itself are endeared to all the family. It is well, however, to make, to scale, drawings of the floor plans as they are —a very convenient scale is ⅜-inch= 1 foot. Mark the old walls by shading so as to avoid confusion with other lines by which the new plans will be designated. Then draw plans of the house as it is to be. Doubtless many lines will have to be rubbed out and drawn again. But this rubbing out and redrawing is much cheaper than changing wood and plaster, moving doors and windows, or changing stairs. Let the plans be fully developed on paper, freely discussed, and finally adopted exactly as they are to be executed.

Our correspondent proposes to have a modern home with all accessories for comfort. This is well.

THE FURNACE.

Of furnaces there are three types, viz., hot air, steam, and hot water furnaces. In any case, the furnace is placed in a room in the cellar. The cheapest of these are the hot-air furnaces. Such a furnace is essentially a big stove around and over which is placed a jacket of either sheet iron or brick. The air that is between the furnace and its jacket is warmed and is conducted through large, asbestos-covered tin pipes to the rooms to be warmed. The flow of warm air into any room is controlled by a register. The cool air of the rooms flows down to the bottom of the furnace through a very large pipe to which it is admitted through a register which is usually placed in the hall. Whenever there is fire in the furnace the air circulates through the furnace-jacket and such rooms as are to be warmed, the register in all others being closed. It is important that the furnace be placed nearly central under the rooms to be warmed, since difficulty is experienced in conducting the warm air through long distances horizontally. The warm air for second-story rooms is carried through pipes placed between the studding in the partitions of the first story. The hot-air furnace has the advantage of low first cost, simplicity, and immunity from danger of damage from freezing, if neglected.

The steam plant is essentially a steam boiler with firing facilities, all placed in the cellar, and radiators in the rooms to be warmed. These two parts are connected by suitable pipes for bringing the steam from the boiler to the radiators and for carrying the water, derived from condensation of the steam, back to the boiler. When the water is heated to boiling, the steam circulates through the radiators and warms them and they, in turn, warm the air in the rooms. The flow of steam into any radiator is controlled by valves so that any portion of the house can be warmed or not as

(Continued on page 534.)

Agriculture

Corn Roots.—Lister Versus Level Planting.

EXCERPTS FROM BULLETIN NO. 127, KANSAS EXPERIMENT STATION, BY PROF. A. M. TENEYCK.

In the study of corn roots, the purpose was not only to exhibit the root development of the plant, but to compare the root systems produced by the level and lister methods of planting. The corn was planted May 19, on new spring plowing. Part of the ground was listed in furrows about six inches deep, and all of the corn was planted with a check-row planter, in hills three and one-half feet apart each way. The variety of corn used was the Kansas Sunflower, a rather late maturing sort and a medium grower. The first set of samples were taken July 18-23, sixty days after planting. The corn stood about five feet high at that date, and had been cultivated for the last time ten days previous to taking the samples. It was the plan to cultivate shallow, in order not to injure the roots of the corn, but through an error, at the third cultivation, June 30, a six-shovel cultivator was used, and it is possible that the cultivation was sufficiently deep to destroy some roots.

Plate 1 is an illustration of the sample of the level-planted corn taken sixty days after planting. It shows the development and distribution of the roots between the hills of corn in adjacent rows. At the first observation, one is surprised at the large number of roots and their extensive growth. At this stage the corn has filled the soil with its roots, not only beneath the hills but between them, until the entire space was fully occupied to the depth of two and one-half feet, and some roots reached a depth of more than three feet. The roots are thrown off from the base of the stalks in quite uniform whorls, arranged one above the other, the whole forming a root-crown which in this sample measured ten to twelve inches in diameter near the surface of the ground.

From the illustration two classes of roots are easily distinguished: Those that curve out from the crown and strike more or less directly downward into the soil, i. e., the main vertical roots, and those that spread out from the root-stem in a horizontal plane, near the surface of the ground, the main lateral roots. In this sample the lateral roots curve downward as they leave the crown, and then extend out in an almost horizontal plane, the roots from opposite hills meeting and interlacing, when they curve more or less abruptly downward, often ending two or three feet beneath the opposite hill. In their horizontal course these roots have given off many vertical branches, which have penetrated the subsoil and reached a depth almost equal to that of the primary vertical roots directly beneath the hill.

In this sample the main roots were about four inches from the surface of the ground midway between the hills, at eight or ten inches from the hill they were three inches beneath the surface, and at four or five inches from from the hill the outer roots of the root-crown reached the surface, and many large brace roots extended two or three inches above the ground. The bulk of the lateral roots lie between three inches and twelve inches from the surface. Some small, fibrous roots were observed above the main lateral growth, showing that the small feeding roots grow upward as well as downward and to the sides. This upward growth was more noticeable in the samples taken at maturity. Some of the main roots strike out at an angle, gradually curving downward with the branches from the horizontal roots. The vertical as well as the horizontal roots give off nmerous branches, the branches in turn give off other branches, and these produce smaller fibers and root-hairs, so that the whole soil at this stage of growth, to the depth of two and one-half feet, served as a feeding-ground for the crop.

Plate 2 shows the root system of the corn which was planted in lister furrows. The sample was taken sixty-five days after planting. The early part of the season was very wet and rather unfavorable to the growth of listed corn, and the stalks of corn in these two hills were not quite so large as those in the hills of the level-planted corn; also, the roots of the listed corn appear to be less numerous and have made somewhat less growth than the others, although having much the same general arrangement and distribution in the soil. The main difference in the two root systems appears in the difference in the location and form of the root-crowns. While the root-crown of the level-planted corn rises to the surface of the ground in a compact, fibrous mass, from which the roots curve downward and outward into the soil, the root-crown of the listed sample is located fully three inches deeper in the ground and is less compact and fibrous, and the lateral roots extend directly from the root-stem in an almost horizontal direction, the depth at the hill being practically the same as the depth midway between the hills. Thus, although the lateral roots of the listed corn were found within four inches of the surface, midway between the hills, yet the average depth of the roots was greater than in the level-planted corn, in which the lateral roots rise nearer the surface at the root-crown.

It is the general experience of farmers who practice the lister method of planting that listed corn stands drouth better than level-planted corn. This study of the root systems offers a suggestion as to the reason why. It is evident that the listed corn could have been cultivated deeper and closer to the hill at the last cultivation, without injuring the roots, than the level-planted corn. The root-crown forms deeper in the soil and, as cultivation progresses, the furrow is gradually filled until, at the last cultivation, the ground is left practically level, with three or four inches of mellow soil over the roots close up to the hill. The root-crown and the main roots of the corn are well covered and the whole soil is completely protected by a deep soil mulch, which conserves the soil moisture and protects the corn roots from the extereme heat of the summer sun much more than could be the case if the root-crown rose to the surface as it does in the level-planted corn. Although the root-crown and the main lateral root system of the listed corn lie deeper in the soil than in the level-planted corn, yet there was apparently no loss of feeding-grond for the roots, since it was observed in washing out the sample that the soil above the main roots was filled with numerous slender, hair-like roots, branches from the main roots, which seemed to feed almost to the surface of the soil. These small roots were either broken off in washing, or, having no support, sank down upon the main lateral roots when the earth was removed.*

Plate 3 is an illustration of the sample of listed corn showing the root development at maturity, 125 days after planting. The stalks averaged about eight feet in height. The ears were nearly ripe, but the stalks and leaves were green and the roots were still alive and apparently growing when the sample was taken. At maturity the roots had reached a depth of fully four feet, and some were traced to the depth of five feet, but it was very difficult to wash them out to that depth because of the tenacious, clayey character of the deeper subsoil. Comparing this sample with those taken earlier in the season, it will be observed that the amount of root growth has greatly increased. The arrangement of the root system is much the same as that of the earlier sample of listed corn already described, but the root-crown has greatly increased in size and density and appears a little nearer to the surface, although midway between the rows the roots are slightly deeper than was observed in the first sample taken.

Plate 4 shows the root system of the

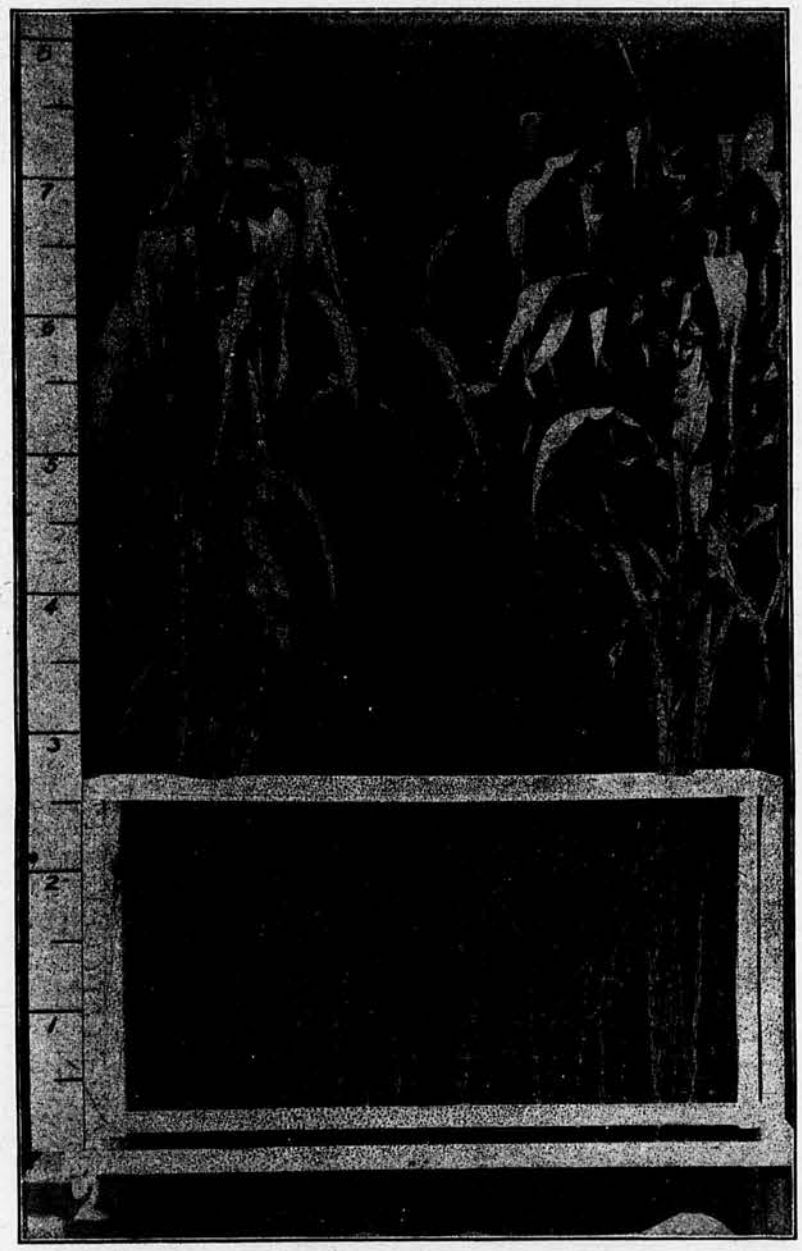


Plate 1. Showing distribution of roots between two hills of level-planted corn, sixty days after planting.

*Later study in the spring of 1904, after this bulletin was prepared for publication, indicates that, when the middles between the listed rows are unplowed and hard, the lateral roots actually rise nearer the surface as they extend outward from the root-crown. Thus the depth of the lateral roots midway between the rows may be less with the listed corn than with the level-planted corn, when the latter is planted in a deep, mellow seed-bed.

level-planted corn at maturity. This sample was taken a few days later than the listed-corn sample just described. It should, however, have been taken before the other, because it was the riper corn. The ears were fully ripe and the leaves and stalks were beginning to turn brown when the sample was taken. In this sample the roots reached fully as deep into the ground, but the number of roots and the fibrous growth was less than in the sample of listed corn. The root-crowns lie nearer the surface but midway between the rows; the lateral roots are deeper than in the sample taken earlier, those from the hill on the right being nearly six inches beneath the surface. Compared with the sample taken earlier in the season, this seems to be an irregularity in growth, or it may be that the roots of this hill received some injury from the cultivator. The apparently thinner and less fibrous growth of the roots in this sample may also be due partly to the fact that the corn was overripe and the roots broke and washed away more easily than did the roots of the listed corn.

In taking the sample at maturity, it was observed, both in the listed and level-planted corn, that the soil above the main roots was filled with a fine fibrous growth of roots to within one-half inch of the surface. Thus the fact that the main roots lie several inches from the surface does not prevent the crop from feeding in the more fertile surface soil. That the roots of plants may readily grow upward in the soil is evidenced by examining celery after it has been banked for several weeks. When digging celery last fall, the writer found the soil full of the slender, white roots of the plants twelve inches above the root-crowns.

Soil Moisture Conserved by Listing Corn.—A comparison of the soil moisture found in adjacent plots of listed and level-planted corn last season showed little difference in the amount of moisture in the soil of the two plots during the first part of the season. The level-planted corn was laid by July 2, part of it receiving shallow cultivation and part being cultivated deep. The listed corn was cultivated for the last time July 6, with a six-shovel cultivator, which left the surface fine and mellow to the depth of three or four inches. Soil samples, taken July 29 gave the following results:

MOISTURE IN SOIL. SAMPLES TAKEN JULY 29, 1904.

	Listed corn, per ct.	Level-planted corn, per ct.	Differences, per ct
First foot.....	14.71	12.63	2.08
Second foot....	22.31	20.10	2.21
Third foot.....	23.11	20.81	2.30
Fourth foot..	21.28	18.35	2.93
Fifth foot..	20.80	18.84	1.96
Sixth foot....	20.34	19.07	1.27

Average difference 2.12 per cent, in favor of the listed-corn plot.

It appears from the results given above, that more moisture was conserved in the listed plot than in the level-planted plot, after the corn was laid by. The early part of the season of 1903 was too wet and cold for listed corn; hence the level-planted corn thrived best, and produced the larger crop by about eight bushels per acre, the comparative yields being 52.3 and 44.4 bushels per acre, respectively. The larger crop would require more soil moisture, which may account partly for the lower per cent in the level-planted plot. No moisture determinations were made at the close of the season.

Deep or Shallow Cultivation.—Since the roots of corn spread out near the surface of the ground, it is evident that too deep cultivation (or too close cultivation of level-planted corn) will cut the roots and is apt to injure the corn. In many experiments reported from other States, the results have often favored shallow cultivation of corn as opposed to deep cultivation. As a rule, however, the deep cultivation in such experiments was extremely deep, usually five to six inches. Medium deep cultivation, three or four inches, and not too close to the corn, should not injure the roots, and in some soils and climates the deeper cultivation may often give better results than shallow cultivation. In 1893-97 a series of experiments in corn cultivation were carried on at this station. In summing up the results of these experiments, in Bulletin No. 64 of this station, Professor Georgeson says: "Our experience also seems to indicate that it is not best to pin one's faith strictly to the shallow culture. . . . A judicious mixture of shallow and deep cultivation gives better

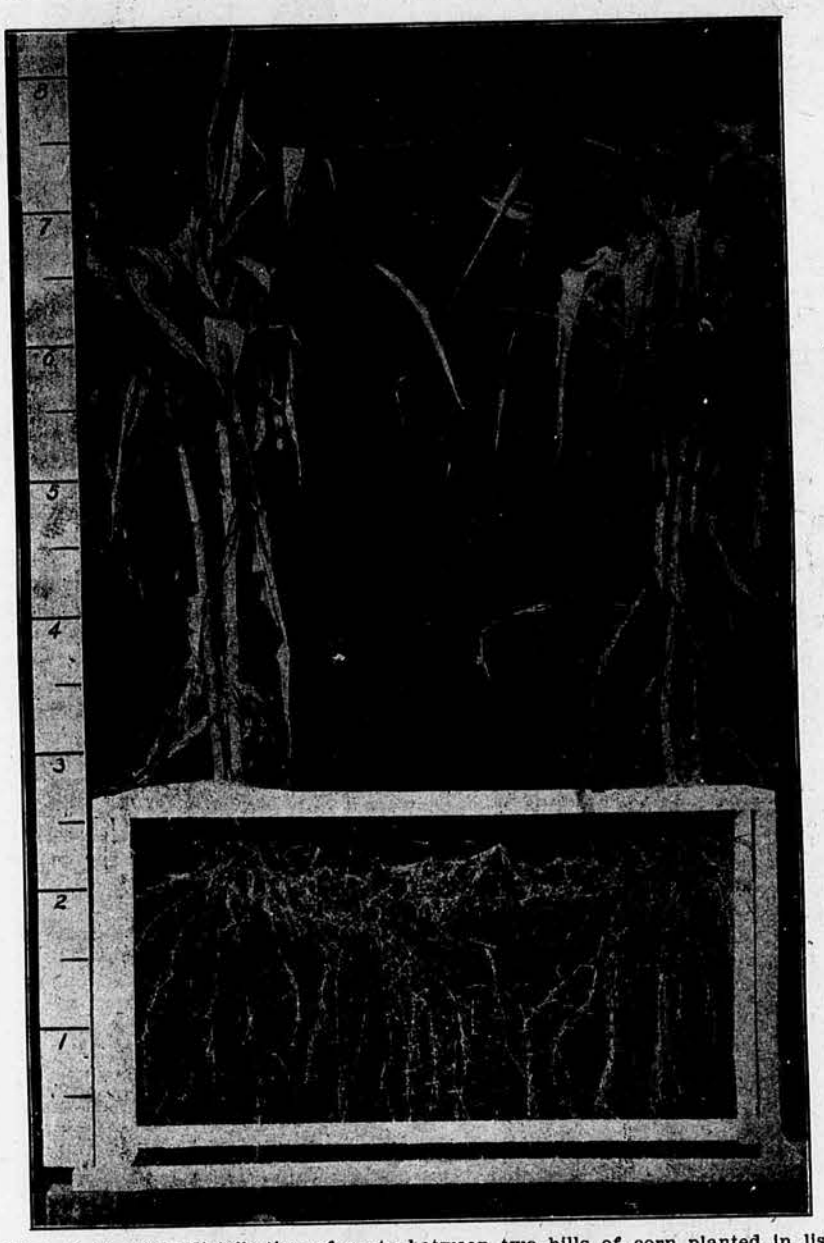


Plate 2. Showing distribution of roots between two hills of corn planted in lister furrows, sixty-five days after planting.

Plate 3. Roots of corn at maturity, planted in lister furrows.

results than to continue either one through the entire season."

Too deep cultivation not only injures the corn by destroying the roots, but, during the period of cultivation, it prevents the roots from feeding in the most fertile part of the soil. On the other hand, the practice of shallow cultivation may be carried too far. A relatively thick mulch of mellow soil will conserve more moisture than a thin mulch, as shown by King in his experiments in Wisconsin.* As regards the conservation of soil moisture, the early cultivation of corn may be shallow. A deep soil mulch is not required at this season of the year, since the weather is moist and cool and evaporation is not great. But later in the season, when the hot, dry days of July and August come, a deeper mulch is necessary in order to keep the soil from dying out. Shallow cultivation early in the season also clears the ground of weeds better than deep cultivation, and a thin mulch may favor the quicker warming of the soil in spring. Loose soil is not so good a heat conductor as firm soil, and more heat can reach the firm soil through a thin mulch than through a thick mulch. On the other hand, in the hot part of the season the thick mulch may act as a regulator of the soil temperature and prevent the soil from becoming too hot as well as too dry.

Cultivation experiments with corn at the North Dakota Experiment Station, and also at the Illinois Station, gave yields favoring the shallow cultivation early, followed by deep cultivation, as opposed to deep cultivation early, followed by shallow cultivation.†

In the cultivation experiments made with corn at this station last season, the yields did not vary sufficiently to be worthy of note. Samples of soil were taken from the several plots early in the season before cultivation was begun, and again at the close of cultivation. At the early date the moisture was found to be about the same in all plots. In the following tables the moisture content of the several plots, about two weeks after the corn was laid by, is compared.

The deeper cultivation as the corn was laid by seems to hav econserved more moisture than the shallow cultivation. No moisture determinations were made at the close of the season.

MOISTURE IN THE SOIL. SAMPLES TAKEN JULY 16, 1903.

	Shallow, per ct.	Deep, per ct.	Differences, per ct.
First foot..	22.15	21.52	0.63
Second foot....	26.55	25.21	1.34
Third foot....	25.05	27.59	—2.54
Fourth foot..	22.99	23.99	—1.00
Fifth foot....	22.54	22.41	.13
Sixth foot....	22.63	22.08	.55

Average difference 0.13 per cent, in favor of deep cultivation.

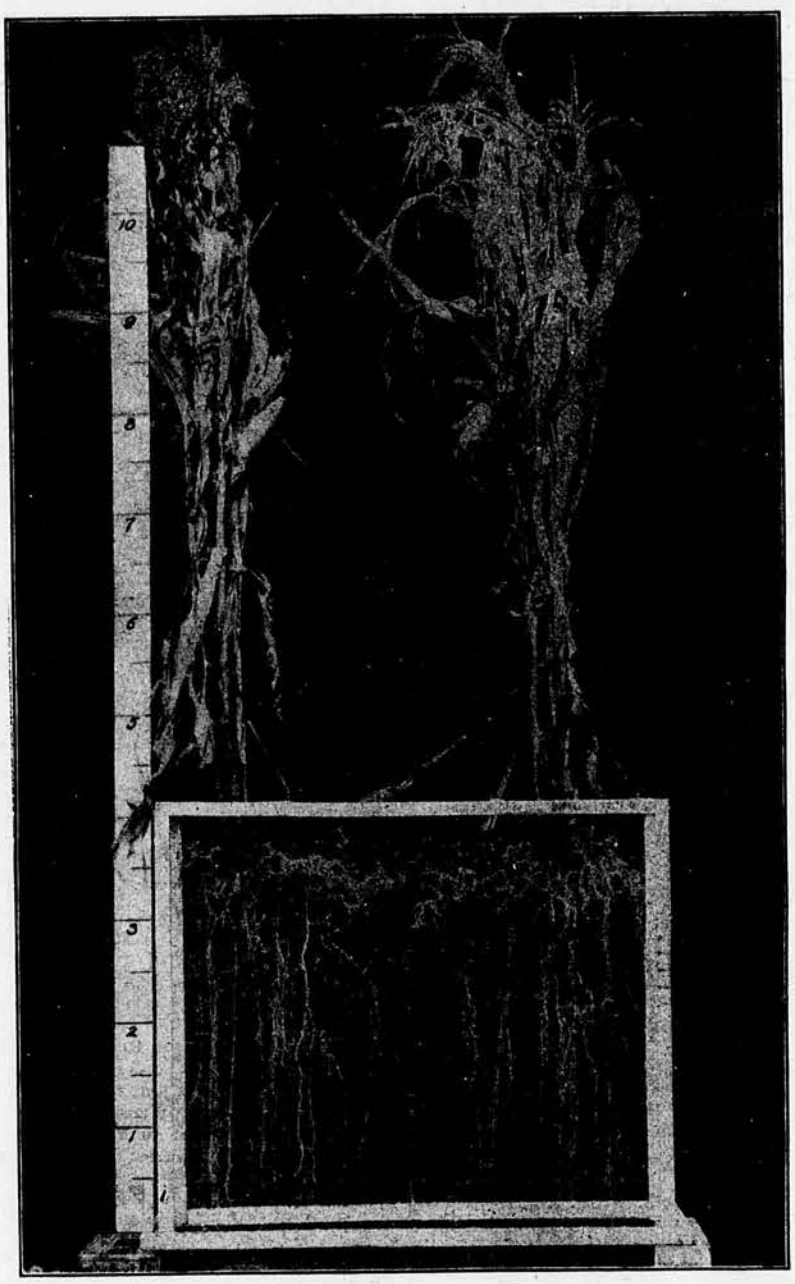


Plate 4. Roots of corn at maturity, planted with check-row, level planter.

MOISTURE IN THE SOIL. SAMPLES TAKEN JULY 16, 1904.

	Deep early, shallow, late, per ct.	Shallow early, deep late, per ct.	Differences, per ct.
First foot.....	21.12	22.03	—0.91
Second foot....	20.38	28.72	—8.34
Third foot.....	23.02	26.17	—3.15
Fourth foot.....	21.24	21.44	—0.20
Fifth foot..	21.05	21.28	—0.23
Sixth foot....	21.64	20.77	0.87

Average difference of 1.99 per cent, in favor of shallow early and deep late cultivation.

*King's Agricultural Physics, page 186.
†North Dakota Bulletin No. 51, and 13th Biennial Report Kansas State Board of Agriculture, page 798.

Horticulture

Inquiries About Insects.

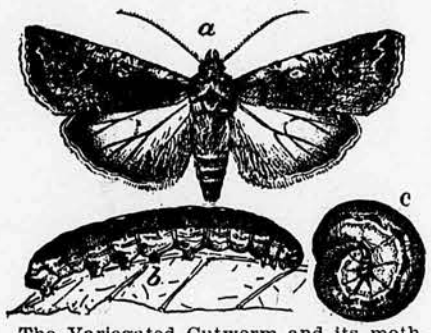
ELBERT S. TUCKER, MUSEUM ASSISTANT IN SYSTEMATIC ENTOMOLOGY, UNIVERSITY OF KANSAS, LAWRENCE.

Not all of the inquiries received refer to injurious insects, in fact, some beneficial forms are mentioned; a knowledge of all kinds is important in order to distinguish friends from foes, and information is as willingly given concerning the former as the latter. Some answers now prepared for publication treat of insects of last season, but the value of such references can be applied in good time for this year. Direct all inquiries for bulletins to Prof. F. H. Snow.

CUTWORMS IN ALFALFA AND CORN.

We have just finished plowing up twenty-five acres of alfalfa and there are a good many cutworms in it. I would like to have you tell me through your paper if there is any way to treat seed-corn so the worms will not take it. We plowed up some alfalfa three years ago and the cutworms took about half the corn that was planted. Cottonwood Falls, Kans., April 6, 1905.

If seed-corn is destroyed in the ground, something besides cutworms is accountable for the damage. Cutworms only attack sprouts from the seed, at or just above the surface of the ground; they hide by day and do their injury at night. Poisonous treatment of the seed would prevent germination, thus making it worthless except as a bait which can be planted with untreated seed to poison wireworms. But if your trouble is really due to cutworms, a method altogether different must be employed to combat them.



The Variegated Cutworm and its moth, Peridroma saucia—a, moth; b, side view of larva; c, larva in curled position. (After Howard, Bull. 29, Division of Entomology, U. S. Dept. of Agriculture.)

A reply was given a few months ago in the KANSAS FARMER (November 10, 1904), regarding a remedy for cutworms in a cabbage plat, when the use of a bait made of poisoned bran, as recommended by Dr. James Fletcher, of Canada, was suggested. While this preparation would cost but little for gardens, the expense of material sufficient for a large cornfield would likely forbid it in the farmer's opinion, yet only a small amount would be required for sprinkling a long ways. The claim is made for this bait that the caterpillars prefer to eat it instead of green plants. Bran moistened with sweetened water and mixed with Paris green until tinged forms the mixture.

Pennsylvania farmers have been advised by Dr. H. T. Fernald in Bulletin 49, Pennsylvania Department of Agriculture, to use a trap method as follows: "1. Trap by scattering bunches of fresh clover, dipped in Paris green, over the field before planting. 2. Place such bunches along the rows later. Caution: Keep fowls and stock away."

In the report of Nebraska State Board of Agriculture, 1893, Professor Lawrence Bruner has given detailed directions for a similar plan: "The very best remedy that has thus far been suggested and tried against cutworms is the use of poisoned grasses, cabbage leaves, or clover. This is done by taking these substances and tying them into loose bunches, and then sprinkling them with a solution of Paris green, or London purple, say a tablespoonful to a bucket of water. Then in the evening scatter these poisoned baits over the field between the rows of beets, cabbage, etc. The worms will be attracted to them, eat, and die. These baits should be renewed several times, at intervals of two to four days, according to the state of the weather and the abundance of the worms."

Regarding further means of insuring a crop, Professor Bruner has said in earlier report (for 1888): "Usually a second planting of the field ten days or two weeks later will be successful; for by that time the worms will have transformed to chrysalids. Occasionally, too, the planting of a double amount of seed has the desired result of insuring a full stand. Disturbing the soil is also of some benefit, while heavy rolling after night, when the worms are at or near the surface, is an excellent idea, especially where the soil is of a compact nature. For some species of these worms, very late fall plowing is a remedy not to be overlooked. Some of the worms hatch during late fall, and live in clusters among vegetable debris, in which situations they hibernate. Plowing buries them so deeply that they can not regain the surface and they perish."

Apparently, alfalfa-fields provide a harbor for these insects from year to year when the soil is not disturbed, consequently the ground is liable to be badly infested with the pests which become especially troublesome when a change of crop is made, but continued cultivation will suppress them. Disking of alfalfa-fields in fall is not only recommended as helpful for the growth of another year but results in the control of many injurious insects such as these.

SNOW-FLEAS.

I write to ask you to kindly inform me what "snow-fleas (a little dark insect found or seen sometimes in melting snow) are? Where do they come from, what are they, and what becomes of them? Why is it that sometimes we can find them and simetimes

we can not? I am curious to know and will be under lasting obligations to you for the information.

St. Paul, Kans., February 28, 1905.

In Comstock's Manual the following account is given: "In the spring in the Northern States, on bright sunny days when it is thawing, one often sees upon the snow thousands of tiny dark specks. In other places pools of

Achorutes purpurascens, the European snow-flea—enlarged to 18 diameters. (After Murray.)

still water appear to be covered by a moving mass of minute grains which become more active when disturbed. These masses as well as the dark specks on snow consist of thousands of little creatures that are provided with a wonderful means of jumping. There is on the end of the body a tail-like organ that is bent under when the insect is at rest, and that reaches almost to the head; this when suddenly straightened throws the insect high in the air and several feet away. This action is like a spring-board jump—only these little fellows always carry their spring-boards with them—and have thus won the name of springtails. The species upon snow, called the snok-fleas. (Achorutes nivicola), sometimes proves a nuisance in maple-sugar bushes by getting into the sap."

No further explanation can be given as to why they are to be found sometimes and not at other times than that they complete the course of their lives under certain conditions when favorable to their production and growth, which, as a matter of fact, is true of other insects and forms of life. These minute creatures belong to the very lowest order of hexapods; none ever acquire wings.

Professor F. L. Harvey has stated in his report for 1894, Maine Agricultural Experiment Station, that "These insects hybernate in grass about the base of trees and elsewhere, and about the bark of trees. On warm days in winter they come out."

Kindred species are liable to infest cisterns and wells. Specimens are always desired, as no attention, as far as known, has been given to these insects in Kansas.

THE SADDLE-BACK CATERPILLAR

(Sibine stimulea, Clemens.)

I have to-day boxed a very peculiar looking insect, which I think you will want in your collection as I very much doubt whether you or any other man ever saw a similar specimen belonging to the insect class. I will send it by mail but it will probably die before you get it. It travels very slowly, almost as slow as a snail, and may belong to that species.

Gravette, Ark., September 15, 1904.

This specimen belongs to the slug-caterpillars which transform to moths It is nowise related to snails, since

Empretia stimulea Clem.—a, caterpillar; moth. (From Div. of Entomology, Dept. of Agriculture.)

snails are not insects. Professor Comstock in his Manual refers to the slug-caterpillars as follows: "One often finds on the leaves of shrubs or trees elliptical or oval larvae that resemble slugs in the form of the body and in their gliding motion. As these are larvae of moths, they have been termed slug-caterpillars; but they present very little similarity in form to other caterpillars. The resemblance to slugs is greatly increased by the fact that the lower surface of the body is closely applied to the object upon which the larva is creeping, the prolegs being replaced by mere swellings on the abdominal segments. Some species are naked; but many of them are armed with branching spines. The larvae when full grown spin very dense cocoons of brown silk; these are egg-shaped or nearly spherical, and are usually spun between leaves.

"The moths are of medium or small size; they vary greatly in appearance, and many of them are prettily colored."

Regarding this particular kind, called the saddle-back caterpillar, Professor Otto Lugger has described it in Minnesota Experiment Bulletin 61: "The odd shape and very peculiar coloration, which is decidedly saddle-shaped, render this caterpillar a very striking object, and never fails to excite the wonder of those not versed in such things. But it sometimes excites something else than wonder. If handled roughly or carelessly, the caterpillar can cause very severe pain. The thorn-like hairs, which grow upon it, sting like nettles, and when applied to the back of the hand, or to any other part where the skin is tender, the parts touched swell with watery pustules. The irritation caused by the acid in these thorns is sometimes exceedingly severe, and with some persons becomes a serious matter; first inflammation, next swelling, and in extreme case a numbness or even partial paralysis of the entire arm. A prompt application of ammonia or bicarbonate of soda acts as an antidote, and soon allays the pain. This peculiar caterpillar is of a reddish-brown color, rounded above, flattened beneath, armed with prickly thorns, which are largest on the fourth and tenth segments, and with a bright pea-green patch, resembling somewhat a saddle in form, over the middle portion of the body, centered with a broad, elliptical, reddish spot, the red spot and green patch both being edged with white. The under part of the body is flesh colored. This caterpillar posseses six true legs but no prolegs.

The moths are of a deep, rich, reddish, velvety-brown color, with a dark streak along the middle, extending from the body half-way across, and on this is a golden spot; two other golden spots are on each wing near the apex. With expanded wings the moth measures nearly an inch and a half across.

These caterpillars are very general feeders, having been found on corn, sumach, rose, apple, grape, currant, cherry, raspberry and blackberry. Not being common, and much infested by parasites, it is not feared as a very noxious insect. Larva and moth are shown in figure."

A caterpillar of this kind was once brought from a cornfield near Lawrence.

THE PRAYING MANTIS

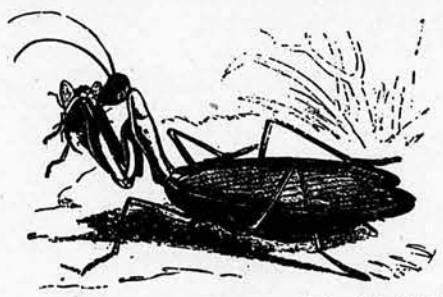
(Stagmomantis carolina, Linnaeus).

I have a specimen and do not know what it is, as I have never seen anything like it, unless it was a devil's darning needle, and I do not think that has wings; so I send this to you. I have not found anybody who could tell what it is.

Riley, Kans., September 14, 1904.

This strangely formed insect often excites curiosity. It becomes full grown in the fall when specimens are commonly found and it should be regarded as a friend to man since it is predaceous in habits, feeding on other insects. What you suppose is a devil's darning needle is likely the walking-stick which does not have wings.

The mantis is known by several names, such as devil's riding horse, camel-cricket, and rear horse, but



Praying Mantis with captured fly, (Bull. 28 Minn. Experiment Station.)

praying mantis is a more general term for it. Professor Otto Lugger refers to these insects in Bulletin 28, Minnesota Experiment Station, briefly as follows: "They are quite common farther south, and are distinguished by their spiny front legs, well adapted to grasp their food, which consists of all kinds of insects. Their position during an apparent rest is that of praying, but woe to the poor, unsuspecting victim that may come too near, as it will soon discover the fact that in this case praying is spelt preying."

Specimens have been received from Wichita, Sedgwick County. The males fly readily at night and have often been captured at lamplight and electriclight in Lawrence.

THE NORTHERN MOLE CRICKET,

(Gryllotalpa borealis, Burmeister).

I forward you to-day by mail a package containing a peculiar bug of which I would like to have a description if you will oblige me.

Lansing, Kans., July 16, 1904.

This kind of insect has been received several times from parties who have dug live specimens from the ground. It belongs to the family of crickets, members of the jumping orthoptera, which are most commonly represented by grasshoppers. A brief reference in Bulletin 28, Minnesota Experiment Station, by Professor Otto Lugger, states that "The mole-cricket is not often seen, as it seldom leaves its peculiar burrow underground, and if so only at night. Not on account of its burrowing habits alone has this insect received the name of mole-cricket, but also because its first pair of legs are transformed into digging implements like those of a mole."

In Pennsylvania, this species has been charged with eating potatoes in the field. Professor J. B. Smith, of New Jersey, gives the following remedy to protect field crops: "When they are sufficiently numerous to be

The Northern Mole Cricket, adult and young, with burrow exposed. (Bull. 28, Minn. Experiment Station.)

troublesome, the insects may be attracted to the sweetened and poisoned bran-mixture heretofore mentioned, and this will usually check injury." (See Economic Entomology.)

A specimen was captured alive at Lawrence and given to Prof. F. H. Snow, May 8.

When writing advertisers please mention this paper.

The Stock Interest

THOROUGHBRED STOCK SALES

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

June 6-9, 1905—Blue Ribbon Cattle Sale at Kansas City, Mo. D. R. Mills, Des Moines, Iowa, Manager.
October 18, 1905—Fancy Poland-Chinas at Osborne, Kansas, by F. A. Dawley, Waldo, Kans.
February 21-23, 1906—Percherons, Shorthorns, Herefords and Poland-Chinas at Wichita, Kans. J. C. Robison, Manager, Towanda, Kans.

The Sheep of the World.

EDITOR KANSAS FARMER:—Last week you gave an excellent article on the number of cattle in the whole world. I appreciate it very much. Now could you give us the number of sheep in the world, by countries? I hope you can do so soon, and greatly oblige.

T. E. THOMPSON,
Editor of The Courant.

Elk County.

According to information furnished by the Bureau of Animal Industry, U. S. Department of Agriculture, the numbers of sheep in the several countries of the world were, at the dates of the last available reports, as shown in the following table:

Countries.	Year.	Sheep.
Australasia:		
New South Wales	1904	28,663,983
Victoria		
Queensland	1899	15,226,479
South Australia	1899	5,721,493
West Australia	1899	2,282,306
Tasmania	1899	1,672,068
New Zealand	1903	18,954,553
United States	1904	45,170,423
Russia in Europe	1898	84,849,677
United Kingdom	1903	29,658,840
France	1901	19,673,840
Germany	1897	10,866,772
Holland	1897	739,100
Belgium	1895	235,722
Denmark	1898	1,074,413
Austria	1890	3,186,787
Hungary	1896	8,122,682
Italy	1890	6,900,000
Switzerland	1896	271,901
Spain	1891	13,359,473
Bulgaria	1893	461,635
Servia	1895	3,094,206
Roumania	1890	5,002,390
Poland	1888	3,754,665
Norway	1890	1,417,524
Sweden	1897	1,296,851
Algeria	1902	8,724,700
British India	1902	17,736,199
Native States of India	1902	5,732,795
Cape of Good Hope	1898	12,616,883
Natal	1898	600,029
Argentina	1895	74,379,562
Uruguay	1897	14,447,714
Jamaica	1898	15,517
Falkland Islands	1898	786,398
Newfoundland	1891	60,840
Ontario	1899	1,772,604
Manitoba	1899	33,092
Mauritius	1884	30,000
Malta	1898	13,895
Ceylon	1898	83,620
Cyprus	1898	291,147

Milch Goats.

A most interesting and valuable publication entitled "Information Concerning the Milch Goats," has just been issued by the Bureau of Animal Industry, U. S. Department of Agriculture. The author is Hon. George F. Thompson, of Kansas, who is editor of the Agricultural Department and whose work in the past has done so much to popularize the Angora in this country. This bulletin on the milch goat will be a revelation to many in that it shows the large number of different breeds of milch goats, their proper breeding, management and care, and their high value as milk-producers. In proportion to weight of animal the milch goat is a much larger producer than is the milch cow and her milk has a higher nutritive value. When properly fed and cared for, the goat gives milk of fine flavor that is especially valuable for invalids and infants. Many brands of cheese are made from goat's milk, used alone or combined with sheep's milk or cow's milk.

The bulletin is an example of the thorough and painstaking work so characteristic of Mr. Thompson.

An Enormous Concern.

The Century Manufacturing Co., of East St. Louis, Ill., an advertiser in the Kansas Farmer, according to the Daily Journal, are the largest manufacturers of buggies, surreys, and wagons in the United States. They market their product direct from their factory to the user at factory prices. They are the only manufacturers in the United States that sell direct to the consumer at factory prices. They ship their vehicles all over the world and it is an every-day occurrence for the Century factory to ship goods to Asia, Africa, Australia, etc. The Century Mfg. Co. advertise this city better than any institution we have and they have made East St. Louis famous for vehicles. The company has an enormous capitalization, send out and receive thousands of pieces of mail daily as they do an exclusive mail-order business. So enormous is their mail that the postoffice here is obliged to increase its force of clerks right along in order to handle the enormous Century mail.

The officers of the company are, Solomon Schulein, president; Alfred Schulein, secretary and treasurer, and Jas. J. Connors, assistant secretary. The Century Company do their banking with the Southern Illinois National Bank, and deposit daily bank drafts drawn on England, Germany, Asia, Africa, and in fact all points of the world.

Jersey Interest in Kansas.

Editor Kansas Farmer:—I send you a picture of my home and family, my cow Emma Lecq 112429, her son Emma Lecq's Recorder 67848, and Emma Lecq's little heifer calf, sired by her son, Emma Lecq's Recorder, which makes the calf 75 per cent of herself. There are many Jersey cows as good as Emma Lecq, but few better. She has milked 51 to 53 pounds per day on grass alone, which, when churned, made a little over 3 pounds of butter per day. Emma Lecq's dam was a half-sister to Duchess of Jefferson, her dam was Sarah Lecq, that gave six gallons per day. Emma Lecq is the best cow I ever owned. While I have other good ones, I have none better. Her son in picture is sired by Mr. Recorder 54798, a bull which I bought out of H. C. Taylor's herd at Orfordville, Wis. Emma Lecq's son is siring very fine calves; he was 2 years old in May last.

I have been breeding Jersey cattle for twenty years and have had experience

HOME OF H. C. KURTZ, TOPEKA, KANS.

enough to know that the Jersey breed of cows are the most economical for the production of butter, cream or good Jersey milk. I started breeding Jerseys in Lancaster County, Pennsylvania; sold out there in the year 1886 and moved to Belton, Mo., and there with some difficulty found a few good young Jerseys to start with. (I might write you of some amusing instances of the prejudice that then existed in the West against Jersey cattle if space would permit). Two years ago I sold out at Belton, Mo., and brought a few of the best I had with me to Topeka, Kans., where I find a good market for the genuine Jersey product.

Topeka, Kans. H. C. KURTZ.

Gossip About Stock.

The Iowa Agricultural College has been presented with a bull by Thomas Lawson, the author of "Frenzied Finance." Now for a high fence.

W. A. Linklater, a graduate of the Iowa Agricultural College, has been appointed professor of animal husbandry in the Washington Agricultural College.

Demand for pure-bred hogs continues strong, of which class there is no overproduction. It is more or less profitable to raise any kind of good stock, but the hog is the money-maker for the farmer.

On the last page of this issue there appears a photographic reproduction of a prime load of Hereford horthorn steels fed by Mr. E. P. Carnahan, Manhattan, Kans., and marketed through Clay, Robinson & Co., at Kansas City on April 25, bringing $6.80, the extreme top price of the year. Average weight of the cattle was 1,599 pounds. Such sales as this "prove the pudding," and Mr. Carnahan, like hundreds of other feeders, feels that Clay, Robinson & Co. are a good firm to ship to.

W. W. Waltmire, owner of Walnut Park Herd of Chester White swine at Peculiar, Mo., states that he has as fine a lot of pigs as he ever had. As these pigs were sired by World's Fair prize-winners, he had a right to expect good ones. Three of Mr. Waltmire's herd boars won prizes at the World's Fair. Walnut Park Pride, second prize sow at St. Louis, farrowed eleven fine pigs in the last litter. Mr. Waltmire states that all his stock is doing finely on blue-grass in spite of the high price of feed, and that he is now fitting a herd to show at the Lewis and Clark Exposition at Portland, Ore., this summer. He is now booking orders for these fine pigs.

Mr. F. A. Dawley, breeder of up-to-date Poland-China swine, Waldo, Kans., claims October 18, 1905, for his next sale of fancy Poland-Chinas at Osborne, Kans. He wrties that from present outlook he will have one of the greatest offerings of boars ever made in the State. They are sired by Chief Perfection 2d, Keep On, Prfection E L, Grand Chief, G's Perfection, Meddler, Corrector, Mischief Maker, Woodbury, Nonpareil, Admiral Togo, Perfection's Profit, Black Perfection's Choice and Chief. Mr. Dawley owns the only Chief Perfection 2d litter in Kansas this year so far as our knowledge reaches, and he will have a sale of herd-headers. He will plan to show at Nebraska State Fair this fall and this, together with his sale offering, will make some advertising for Kansas Poland-Chinas. Mr. Dawley is a young man whose smoke it will do to watch.

Remember the sale-date of Shorthorn cattle at the Heath Ranch, Wednesday, May 31. The offering consists of nineteen bulls from 1 to 2 years old and 11 females, most of which will be 2 years old. No old stuff. The entire offering is as good as they have and all that are old enough will be bred to one of the two herd bulls. Golden Victor Jr. 175464 is one of the herd bulls and he will go in the sale. They have quite a little of his stuff on the ranch and not very much of it is offered for sale. He is a very easy keeper, and so are his get. He is only 4 years old and is in his prime, when he can do the most good. Another herd bull in this herd, a straight Cruickshank bull, Lancaster Royal 168210, he by Prince Odric, a bull well known to the breeders of Shorthorn cattle. There are several bulls by Aberdeen Lad 154974, a bull that has done the Heath boys a great deal of good. They have several heifers by him. Golden Victor Jr. is not an extra large bull but is quite smooth. Lancaster has a little more length than either of the above-named bulls and most of the stuff that is old enough to breed is bred to him. There will be two Sir Richard 147589 bulls in the sale. This will be a very clean offering in moderate flesh and in shape that will prove useful to the buyers. Some one will get a bargain in Golden Victor Jr., as he goes in the sale. The dams of the offering are Jessamines, Daisys, Rose of Sharons, Victorias, Young Marys, and others. Send for catalogue and come to the sale. Col. Brennan, auctioneer.

John Schowalter, the leading Duroc-Jersey swine-breeder, who resides at Cook, Neb., has a new advertisement in this issue of the Kansas Farmer. Mr. Schowalter has been in the pure-bred Duroc-Jersey business for a number of years and his herd to-day contains the best blood of the most noted strains. He

offers a fine bunch of spring pigs, sired by the five following leading males: Jumbo Giant 24449 A, large 7090-pound hog, sired by the 1,030-pound Jumbo Red; other nice litters by King Royal, he by Lord Clair 18103 A, prize-winner at Minnesota State Fair; a fine litter by Won't-Be-Beat, he by the noted Kant-Be-Beat 28067; a fine litter by Royal Triumph, he by the first prize winner, Royal Plummer 21015 at Kansas City; fine litter sired by Improver O. K. 34651 out of the show sow, Fashion 29074, and sired by the $600 Improved 2d. Improved O. K. is very lengthy, with heavy bone, of good color and a good breeder. He is out of a litter of twelve, is 1 year old and is for sale. Mr. Schowalter has decided to sell spring pigs any time after weaning, either sex or pairs, in order to give parties at a distance low express rates. He also offers ten tried brood sows bred for early fall litters, bred to that fine Improver O. K. male for sale. Look up his advertisement on page 542 and remember him.

When writing advertisers please mention this paper.

Miscellany

Twenty-first Semi-Annual Meeting Kansas State Horticultural Society.

The following is the program for the semi-annual meeting of the Kansas State Horticultural Society, which will be held in the Council Chamber, City Building, Wichita, Wednesday, Thursday, and Friday, June 7, 8, 9, 1905:

WEDNESDAY, JUNE 7, 1905.

Opening session at 1.30 p. m.
Reports of trustees, in writing, by congressional districts, on Horticultural Conditions and Progress.
First district—E. J. Holman, Leavenworth.
Second district—E. P. Diehl, Olathe.
Third district—F. L. Kenoyer, Independence.
Fourth district—John Cousins, Eskridge.
Fifth district—William Cutter, Junction City.
Sixth district—J. J. Alexander, Norton.
Seventh district—Geo. A. Blair, Mulvane.
Communications.
Appointment of session committees on entertainment, credentials, memberships, obituaries, exhibits, and resolutions.
Introduction of representatives from abroad.
Question box.

WEDNESDAY, 7.30 P. M.

Welcome to all Horticulturists—Mayor Finlay Ross.
Welcome to the State Horticultural Society.
Response for Horticulturists.
Response on behalf of the State Society, Maj. F. Holsinger.
Paper, "Who Are Horticulturists?" J. O. Houston, Wichita.
"Orcharding in Arkansas Valley," Geo. A. Blair, Mulvane.
"Do Lawns and Ornamentals Pay?" Geo. W. Tincher, Topeka.
Question box.

THURSDAY, 9.30 A. M.

"Berry-Growing in the Valley of the Arkansas," E. H. Cooley, Wichita.
Question box and discussion.
"Forestry: Groves and Windbreaks," Judge J. L. Pelton, Sharon.
Question box and discussion.
"Growing Fruit and Beautifying Our Homes," Frank Yaw, Wichita.
"Tools: The Cutaway Disk," Geo. Holsinger, Rosedale.

THURSDAY, 2.30 P. M.

"Native Fruits of Kansas," Col. J. R. Mead, Wichita.
Question box and discussion.
"Common Injurious Insects and How to Control Them," Prof. E. A. Popenoe, Manhattan.
Question box and discussion.
"Legislation Needed for Promotion of Timber and Tree Culture in the West," Dr. G. Bohrer, Lyons.
Question box and discussion.

THURSDAY, 7.30 P. M.

Paper, "The Nursery Shark," G. L. Holsinger, Rosedale.
"Be Fruitful and Multiply," or "By Their Fruits Ye Shall Know Them," Rev. G. E. Pickard, Wichita.
"Reminiscent," Geo. W. Bailey, Wellington.
"Home Use of Horticulture Products," Mrs. —— ——.
"The Home Beautiful," Miss Pearl Schell, Wichita.
"The Kansas State Horticultural Society," Secretary.
Music and social.

FRIDAY, 9.30 A. M.

Opened by Vice-President W. F. Schell, Wichita.
"Good Words for County Horticultural Societies," C. M. Irwin, Wichita.
Queries and discussion.
"Horticulture at the Fair," C. M. Crow.
Queries and discussion.
"Handling and Marketing Apples," E. G. Hoover, Sedgwick County.
Queries and discussion.
"Storing and Spring Marketing Apples," Bert McCausland, Sedgwick County.
Queries and discussion.

FRIDAY, 2.00 P. M.

"Marketing the Best and Utilizing the Refuse," President F. Holsinger.
Queries and discussion.
"The Vegetable Garden," Prof. Albert Dickens, Manhattan.
Queries and discussion.
"Spraying," C. A. Blackmore, Sharon.
Queries and discussion.
"The Horticulture of the Future," F. L. Kenoyer, Independence.
Queries and discussion.
Reports of Committees. Announcements. Adjournment.

FRUIT AND FLOWER EXHIBIT.

The decorations will be made by the Sedgwick County Horticultural Society, but special exhibits are desired of choice seasonable fruits, berries, and flowers; and, if meritorious, awards and special (or honorable) mention will be given. The people of Wichita should honor with their best horticultural products the men who have built up the horticulture of our State.

TO THE PUBLIC.

Although this meeting is handled by the Kansas State Horticultural Society, its doors are open to everybody interested in its discussions, its information, or its question box; its seats are free to the people of the world, without regard to age, sex, or color.

The mission of the State Horticulaural Society is to educate the masses in the pleasure and profit of growing, using or selling the choicest of flowers, fruits, vegetables, nuts, trees, etc. Everybody is invited. The evening meetings will be free from discussion or debate, and interspersed with music, etc., furnished by the County Horticultural Society. No tickets, no fees, no dues, no collection. Come.

SECRETARY.

Grange Department

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

All communications for this department should be addressed to Mrs. Kittie J. McCracken, Station B, Topeka, Kans.

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

NATIONAL GRANGE

Master.....Aaron Jones, South Bend, Ind.
Lecturer.....N. J. Bachelder, Concord, N. H.
Secretary....C. M. Freeman, Tippecanoe City, Ohio

KANSAS STATE GRANGE

Master.....E. W. Westgate, Manhattan
Overseer.....A. P. Reardon, McLouth
Lecturer.....Ole Hibner, Olathe
Stewart.....R. C. Post, Spring Hill
Assistant Stewart.....Frank Wizwell, Ochiltree
Chaplain.....Mrs. M. J. Ramage, Arkansas City
Treasurer.....Wm. Henry, Olathe
Secretary.....George Black, Olathe
Gatekeeper.....G. F. Kyner, Newton
Ceres.....Mrs. M. L. Allison, Lyndon
Pomona.....Mrs. S. M. Phinney, McLouth
Flora.....Mrs. S. J. Lovett, Larned
L. A. S.....Mrs. Lola Radcliffe, Overbrook

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Geo. Black, Secretary.....Olathe
J. T. Lincoln.....Madison
O. F. Whitney.....Topeka, Station A

STATE ORGANIZER

W. B. Obryhim.....Overbrook

Grange Notes.

Patrons of Kansas are fortunate in having an official paper whose editor is in touch with all upward and onward movements of the Grange, and who is fraternally interested in its growth and development.

What false idea holds Kansas patrons aloof from contributing to the Grange Department news from subordinate granges? Chronicles of success, discouragements, or reverses, even; methods reported from successful granges may prove the open sesame for your emergence from the mire of discouragement. Valuable ideas can be utilized from the experiences of others. Successes will encourage the weak and struggling.

Keep before the people what you are attempting and accomplishing. When granges are silent the general public is led to believe that nothing is being done.

In Grange work there are certain lines of progress which should be followed. This the State lecturer has laid out for our guidance, and yet to produce the best results each grange must hoe its own row. The wise lecturer will study the needs of his own particular grange until he sees clearly what should be done.

The Grange organization is to-day recognized as one of the leading forces in advancing the interests of the agricultural classes. It is developing an educational, social, and fraternal feeling in the country and adding a new beauty to the occupation of the farmer. It stands as sponsor in legislation to advance its interest.

The telephone, rural delivery, parcels post, and good roads offers to the beginners in rural life a quartet of blessings that will insure a continuous residence in the country.

The experiments in nitrogen-culture, planned by patrons of Oak Grange, had to be abandoned, as word came from the Department of Agriculture that the supply of bacteria was exhausted. Those wishing to conduct experiments in 1906 must apply in September of this year.

We have but recently learned of the very interesting grange meeting held in St. Louis during the Exposition days, by visiting patrons. From the same source we also have the promise of letters from the Portland Fair, which will no doubt be of interest to granges, especially to those who are unable to be in attendance there during the summer.

Shawnee County Pomona Grange will meet in Topeka at 10 a. m. June 3. The place of meeting will be announced later. The program will include a paper on "Good Roads," and another on "The Telephone for the Farm." Bring baskets and enjoy a social good time as well as the more formal proceedings. O. F. Whitney, Secretary.

* * *

Queries for Grange Department.

1. What constitutes a successful grange?

2. Taking into consideration our obligations, is attendance at grange meetings obligatory?

* * *

A Correction.

"Is it generally known that Pomona Grange can confer the higher degrees usually conferred by State Grange?"—Grange Notes, May 4.

No. The above is misleading. The first four degrees are conferred by subordinate granges only. The fifth degree only may be conferred by the Pomona grange, the fifth and sixth degrees by the State Grange, the sixth by the National Grange and the seventh by the Priests of Demeta.

E. W. WESTGATE,
Master Kansas State Grange.

The Young Folks

CONDUCTED BY RUTH COWGILL.

The Old Gray Volunteer.

When you polish up your old canteen and buckle on your belt,
Then you git the queerest feelin's 'at a feller ever felt;
For you're apt to see things double ever' time you shet your eyes.
It's a gay an' dashin' volunteer, and then, contrarywise,
It's an old rheumatic veteran comes hobblin' into view—
An' you can't git rid o' feelin' like as both of 'em is you.
And your name's down on the honor roll, no matter how it's spelt,
When you polish up your old canteen and buckle on your belt.
There's your long, blue army overcoat, moth-e't and out o' style,
And the war you wore it in so old your hate's had time to spile;
But your pension comes so reg'lar 'at you never quite forget
The rattle of the drum an' fife, an' you kin hear 'em yet.
An' it makes you feel at sixty-odd like you was twenty-one;
And "The Girl I Left Behind Me," and It's "Johnny Git Yer Gun,"
Makes the frost 'at's in your mustache and your old gray whiskers melt,
When you polish up your old canteen and buckle on your belt.
But the tune 'at's 'bout the sweetest to us boys in blue or gray,
And 'at's got the saddest music in it either side could play,
Is the one 'at goes with muffled drums and slow and solemn tread,
But there's lots o' glory in it, too, for us an' for the dead;
And your heart beats quick and quicker as you take your comrade's hand,
And you live the war all over as you tell or understand
'Bout the charge you made at Gettysburg and how the powder smelt—
When you polish up your old canteen and buckle on your belt.

—Edwin S. Hopkins, in Puck.

How Coral Creatures Eat.

In far worse plight than the old woman who "had so many children she didn't know what to do" is the caretaker of the little coral creatures who have so many mouths that it is simply impossible to feed them all. This is the case of custodian Spencer, at the Aquarium, in Battery Park. There was a time when he tried to give them a meal a day, by spearing minute particles of food with the point of a slender stick and offering one of these to every mouth or two of the mass of tentacled openings that make up the surface of the coral rock. But this was speedily found to be too laborious an affair, and now they are fed three times a week with minute bits of shredded clam, or sometimes oysters strewn through the water near them.

The tiny, filmy tentacles, something like an eighth of an inch long, reach out for these, and when one gets a dinner and his next-door neighbor does not (though the dinner-grabber gobbles down his bit of clam without any apparent regard for his hungry brother), he, nevertheless, has a mysterious way of imparting nourishment to him afterward, and it so happens that if a half or even a third of the tiny creatures get a meal the rest of them never go hungry.

Because the tropical coral is not used to such changes in the denseness or saltiness of the water as are shown from day to day in the bay water with which the other sea creatures of the Aquarium are supplied, the water in their round glass houses is never changed. They are living now in water given them nine years ago, but the big-leafed ulva, or sea-lettuce, areates it thoroughly, keeps it pure and healthful, absorbing anything that might hurt these little sea people, and giving back to them the oxygen they need to live.

The coral requires more light, as well as care, than do many other dwellers in the Aquarium. They are kept on broad shelves directly by the big windows of the laboratory, and are seen only by those especially interested in such creatures, who take the trouble to ask for a sight of them. So delicate are these little folk from the depths of the sea that their food must be thoroughly washed after chopping, that not a tinge of milkiness or discoloration may be seen in the water, as this would offend their fastidious tastes, even to the point, perhaps, of costing their lives if repeated often.

Many people have tried to discover how fast the little coral creatures work, but no one seems to have obtained any satisfactory data. Ten years work does not make any showing, at least not with those kept in captivity, and it really does not seem to make much difference to coral folk where they are, as long as their food and water are all right.

There are many different kinds of coral, the rock, the honeycomb, the tree, but perhaps one of the prettiest is the rose coral, with its fringed petal-like parts that move at the edges with every current in the water. A fine specimen of this in the Aquarium is now dead, because, as the caretaker thinks, it was called upon too often to "show off" for interested visitors. The edges of the bonelike structure under the filmy "flesh" of this creature are very sharp, and when, as might happen a dozen times a day, it was touched with a stick to make it "shut up," these sharp edges probably punctured the delicate tissue and eventually caused its death.

Of the next specimens that came to the Aquarium, Mr. Spencer is going to keep one which will never be called upon to entertain company, and so determine if its social obligations really were the cause of this little rose coral's death. Fine examples of this species are found on the Lower Bay shore, and it is not so fastidious about its food or water as are those from tropical countries.

The sea anemones, which are a sort of cousin to coral folk, have a glass house to live in not far from the coral in the Aquarium. These look much like fringed mushrooms and have the power to move from place to place, as the little corals can not do. The anemones, however, have only one mouth—directly in the center of the shock of fringe that forms their heads. They are a lazy sort of creature, living, as far as one can see, only for their own pleasure, and never building any islands or reefs as their coral cousins do.

In another glass house near the corals live a dozen or more little hermit crabs, turning somersaults, and duelling and fisticuffing the whole day long. They are not ambitious enough to grow shells of their own, but as soon as they are born begin to back around until they find an empty shell of some other creature or a neighbor small enough for them to kill and steal his house, and then they back their soft, jellylike bodies into the vacant shell and wear it as their own.

As they appear in the Aquarium, they look for all the world like a ragged regiment, no two of them garbed alike, some in striped, sharp-pointed shells, some in snail's or in those of the little mattica, the winkle, the drill. The hermit crabs, however, have this punishment for their lazy, thieving ways, they can never grow any bigger than the little shell in which they take up their home at the beginning, and can never learn to run very fast, for their muscles have been cramped and weakened by long disuse.—New York Tribune.

Columbus.

A school teacher was trying to impress upon his pupil's mind that Columbus discovered America in 1492, so he said: "Now, John, to make you remember the date when Columbus discovered America, I will make it in a rhyme so you won't forget it; 'Columbus sailed the ocean blue in 1492.' Now, can you remember that, John?'

"Yes, sir," replied John.

The next morning when he came to school his teacher said: "John, when did Columbus discover America?"

"Columbus sailed the dark blue sea in 1493."—Ex.

The man who strives to make the most and best of himself, to cultivate his nature on all sides, to put himself in as many useful relations with others as he can, he is the religious man.—Celia P. Woolley.

By land and sea I traveled wide;
My thought the earth could span;
And wearily I turned and cried,
"O little world of man!"
I wandered by a greenwood's side
The distance of a rod;
My eyes were opened, and I cried,
"O mighty world of God!"

—F. W. Bourdillon.

For the Little Ones

Flag Day.

Your flag and my flag—
And how it flies to-day!
In your land and my land,
And half the world away!
Rose-red and blood-red,
The stripes forever gleam;
Snow-white and soul-white—
The good forefathers' dream;
Sky-blue and true blue, with stars to shine aright—
The gloried guidon of the day, a shelter through the night.

Your flag and my flag!
And oh, how much it holds!
Your land and my land
Secure within its folds!
Your heart and my heart
Beat quicker at the sight—
Sun-kissed and wind-tossed—
Red and blue and white.
The one flag—the great flag—the flag for me and you—
Glorified all else beside—the red and white and blue.

Your flag and my flag—
To every star and stripe
The drums beat as hearts beat,
And fifers shrilly pipe.
Your flag and my flag—
A blessing in the sky!
Your hope and my hope—
It never hid a lie!
Home land and far land, and half the world around,
Old Glory hears the great salute and flutters to the sound!

—W. D. Nesbit, in Baltimore American.

Rufus.

A little pig is quite as pretty as a puppy or kitten. Its coat is sleek and silky, and its bright eyes look at you with intelligence. Pigs make clever pets, and can be taught many funny tricks. The Maynards used to say that all the stray animals that nobody wanted were thrown over their fence, and that there really was no need of a village pound. It was almost true, and it was because they were so kind to all living creatures. Miss Sophia took charge of the cats and dogs, fed them and tended them when they were sick, and Miss Elizabeth found homes for them. Dozens of four-footed waifs were saved from death to purr out their declining years by a comfortable fireside, or become the faithful family watch-dog, respected and esteemed. But when one morning they woke and found a little spotted, red-and-white pig tied to the door-knob, both Miss Elizabeth and Miss Sophia thought their hospitality had been abused. Not that they had a prejudice against pigs, but that they really did not know what to do with him. The led him into the house, however, and gave him some fresh milk, which, fortunately, he could drink.

"I think Rufus would be a good name for him," said Elizabeth, "his spots are red, you see."

"So they are," said Miss Sophia. "Yes, we'll call him Rufus. But, really, sister, we can't keep him."

"No, we can't," Miss Elizabeth agreed.

Just then Billy Mitchell came in. He lived next door, and visited Miss Elizabeth and Miss Sophia at all hours in the most unceremonious way. He overheard the last remark, "Oh, give him to me, do," he said. "I think he's lovely. I know mother will let me keep him."

Rufus had finished his breakfast, and he looked up at Billy, his little pink snout wet with milk. If ever a pig plainly and unmistakably smiled, Rufus did at that minute.

Billy was right. There was hardly anything into which he could not persuade his mother. She did let him keep Rufus, and the two became fast friends. The little pig had an unfailing appetite, and grew sleeker and fatter every day. He followed Billy everywhere about the house and grounds, and made friends with all his playmates, even trotting at their heels when they went to the woods or to play ball. When Billy went to school, Rufus learned, somehow, that pigs were not wanted in the school-room. He trotted to the front door with him; and, when Billy shut it behind him, he would listen as long as he could hear an echo of his footsteps down the front walk, turning his head to one side, uttering a soft squeal to himself, a kind of complaint about disobliging teachers that did not understand the feeling between pigs and their masters. He had a favorite place in which to sleep, and slipped away for a nap there whenever he had a chance. It was under the bed in the guest-chamber, for he was a pig of the most luxurious and refined tastes. He learned to know the sound of the door-bell, which always roused him, no matter how fast asleep he might be. He would hurry after Mrs. Mitchell or the maid, and push his little head through the door, anxious to see the visitor, whoever it was. "I don't know what I am to do with him," said Mrs. Mitchell to Miss Sophia. "I can't tell you how mortified I was when the minister's wife called. It was her first visit. What kind of folks do you suppose she thought we were to have a pig running around the house? I had to explain how it happened. She laughed and thought he was awfully cute, but I'm sure she didn't think it was nice; she couldn't."

"No," said Sophia, "it is a little unusual."

Of course, Rufus did not stay little, his appetite was too good for that. It was not possible to have a grown-up pig doing all the things that could be excused in little Rufus. A family council was held. "I never could have him killed," said Mrs. Mitchell.

"Killed! I guess not," said Billy indignantly.

"I saw the butcher yesterday," Mr. Mitchell began. "He'll give you seven dollars, Billy."

"Seven dollars! I wouldn't take seventy," said Billy stoutly.

"Well, then, he must be sent to the farm," his mother declared. And that was what happened. But, as he reached his full growth, though he still knew and loved Billy, he grew fat and coarse, and developed a depraved taste for mud puddles. Stretched out in the sun, giving a grunt of content now and then, none would have recognized pretty, cunning Rufus in the common, ugly, grown-up pig.

"The same change comes over people, sometimes, if they're not careful," Mrs. Mitchell said warningly, when Billy mourned over the change.—Advance.

The Home Circle

CONDUCTED BY RUTH COWGILL.

To the Passing Saint.

As to-night you came your way,
Bearing earthward Heavenly joy,
Tell me, O dear saint, I pray,
Did you see my little boy?

By some fairer voice beguiled,
Once he wandered from my sight;
He is such a little child,
He should have my love this night.

It has been so many a year—
Oh, so many a year since then!
Yet he was so very dear;
Surely he will come again.

If upon your way you see
One whose beauty is divine,
Will you send him back to me?
He is lost, and he is mine.

Tell him that his little chair
Nestles where the sunbeams meet;
That the shoes he used to wear
Yearn to kiss his dimpled feet.

Tell him of each pretty toy
That was wont to share his glee;
Maybe that will bring my boy
Back to them, and back to me.

O, dear saint, as on you go
Through the glad and sparkling frost,
Bid those bells ring high and low
For a little child that's lost.

O, dear saint, that blessest men
With thy grace of Chrisamas joy,
Soothe this heart with love again—
Give me back my little boy!

—Eugene Field.

Man and His Food.

[This paper will well repay the housewife for a careful reading. It is not only interesting but intelligent, as well, in its discussion of a too-often neglected subject. It was written by Mrs. H. W. Calvin, of the State Agricultural College, and read before the annual meeting of the State Dairy Association.]

Balanced rations for animals have long been discussed by farmers and those interested in farming. The needs of the growing calf have been recognized as differing from those of the milch cow, and those of the fattening steer as differing from either of the preceding. That the same feed which met all the needs of the unused horse was not sufficient in kind or quality for the working horse has been observed for many years. It has been known that certain foods make bone for the young pig, and later certain other foods enable him to lay on fat. Moreover, it has been admitted that the animal standing exposed to cold requires more fat and food of more heating properties than the well-housed animal. All these facts have led to many careful studies of the balanced rations adapted to various conditions.

While man has thus been interested in the lower animals, little or no thought has been given to his own needs. Food for man has been considered only as it affected the palate, and sometimes as it affected the purse. Man has been prone to eat or not to eat, according to his likes and not according to his needs. He has varied his consumption by his whims and by his tempers, and has thus committed offenses against his body that have been paid for by years of sickness.

No thinking individual can conclude that the digestive apparatus of man is inferior to the other mechanisms which control his body; yet the majority of human beings are doctoring for digestive diseases before they have reached half the normal span of life. Nor are all the evils of injudicious eating confined to the digestive organs; for the majority of the other diseases, not contagious, arise from similar causes.

The same conditions which vary the needs of the lower animals vary the needs of man. Age, climate, and labor performed, together with personal peculiarities, decide one's needs as to food. The infant, requiring but little material for heat or work needs a different food from either of its parents. It must have a diet rich in proteid, and an abundance of mineral matter, that both bone and muscle may develop. The school child, doing chores in the early morning, running to school, studying, playing hard, building up material for future use, requires a more liberal diet in proportion to his age and a diet richer in building material than do the adults of the family. A man laboring in zero weather shoveling coal or hauling feed must needs have food rich in the heat-giving properties; while his wife in a well-heated house, doing light work, or the man in a well-warmed office building, riding to and from his business, using brains but not muscle, must derive his nourishment from foods more easily digested and of less heating qualities than men in more active pursuits.

Food may be defined as that which replaces waste, builds up the body, or yields heat or work. Foods are classed according to their sources and composition, into inorganic and organic foods; and these into mineral matter, water, carbohydrates, fats and oils, and proteids. These divisions are the same as those used in the discussion of animal diets. The souces of carbohydrates are the same for the lower and higher animals; that is, they are provided from the vegetable kingdom. The proteids are chiefly derived from eggs, meat, milk, and milk-products, together with some proteids from such vegetables as peas, beans, and the cereals.

It has been said that man can live three minutes without air, three days without water, or three weeks without food. So, of our foods previously mentioned, water is the most important. Man is himself 67 per cent water, so every tissue must be rebuilt with a proportionately large amount of this fluid. Besides this, water serves to regulate the temperature, to carry food to the various tissues, and to remove waste from the system; yet, water-drinking is dependent upon habit rather than upon the amount of fluid required, and comparatively few use water to the extent that it should be used. It is needless to say that any article entering so largely into the diet should be of the purest quality obtainable. Soft water is preferable to hard water, and no water should be used the sources of which are possible of contamination. The purest water found in nature is that derived from the fruits, and for this reason, as well as for others to be mentioned, fruits should be freely used.

The mineral matter though of small quantity is most essential; for were it not for the minerals present in the blood the materials contained in it would not remain in solution. The minerals are derived from the fruits, the cereals, and the vegetables, and only these organic compounds can be of use to the body; in other words, we can not give the lime required in the body by crushing limestone and feeding it, nor the iron by giving solutions of iron. For the lime we may go to milk, and for the iron required, to the fruits. These are but illustrations.

The carbohydrates, of which potatoes and rice are typical foods, yield to the body heat and work. They are usually spoken of as starches and sugars, and compose about five-eighths of the diet. There is a fundamental principle that that which is soluble is digestible and that which is insoluble is indigestible. Every housewife is familiar with the fact that starch is insoluble. When she prepares her laundry starch on Monday by blending it first with cold water she forms a mixture, the starch being suspended in the water and settling to the bottom as soon as agitation ceases. Later, she again stirs the mixture and adds boiling water, cooks the starch at boiling temperature, 212° F., and now no longer does the material settle to the bottom of her utensil, but remains a clear, thick, jelly-like substance. She has changed the insoluble material to a soluble or partially soluble substance, and has rendered this substance digestible. From this we come to a knowledge that starchy foods should be cooked at a temperature as high as 212° F. If they are in a finely pulverized condition, surrounded by an abundance of liquid, it requires but a few minutes to thus convert them. If, however, they are in coarse particles mixed with the cellular structure of the plant, long, hard cooking will be necessary to break down the cellulose and alter the starch. We might illustrate this by thickening material with corn-starch, which will require but five or ten minutes' cooking. The starch is finely divided and there is an abundance of water with a small proportion of the dry material. On the other hand, the cereal food which is largely starch, is mixed with the hard fibers of the grain, and for it to be rendered thoroughly digestible must be cooked long and carefully. The varying conditions in which potatoes reach the table testify to the ignorance of cooks of this simplest form of cookery. The baked potato, containing in itself sufficient water to swell the starch grains, bakes to be dry and mealy or wet and soggy, according as the surplus moisture in the potato is allowed to escape or is retained. The cereals, of which we were just speaking, come to the ordinary table merely cooked to a paste, slippery but nothing more, and are more indigestible than they would be were they presented raw and thoroughly masticated when eaten, for in their prevalent condition they escape mastication and escape being mixed with the saliva.

We have all heard of the Irish girl who boiled an egg an hour in an effort to boil it soft, and we smile at her ignorance; yet meat belongs to the same class of foods as does the egg, and undergoes the same changes in the presence of heat; it cooks hard by high temperature long maintained, just as the egg does. In this matter we are sometimes deceived because the meat consists of fibers fastened together with connective tissue which dissolves in the boiling water and the meat fibers are separated, so that we conclude that the meat is cooked tender. This is not true, because each particular fiber has been cooked until it is as hard as the white of the egg, it forming a substance about as easily cut or masticated as a bit of wrapping twine, though at the same time the particles of meat have fallen apart and the meat is in the condition commonly called "tender." Almost all are aware that by careful cooking at a low temperature, an egg may be rendered jelly-like in consistency and delicate in flavor; similar conditions would have the same effect with meat. Long, careful cooking at low temperature, 185° F., will render the proteid of meat tender and of exquisite flavor. The cheapest and toughest cut by this more careful manipulation becomes as palatable and really more nutritious than the more expensive cuts.

These proteid foods are the most expensive and the most necessary constituents of the diet. They may do the work of the carbohydrates, but they alone can rebuild worn-out tissue. In the diet of the poorer classes proteids are frequently deficient and an excess of carbohydrates is present. This results in weakness of the muscles, irritability of the nerves and flat-

ulent dyspepsia, these carbohydrates remaining in the intestines. The system becomes overloaded with heat-producing foods and all too frequently Nature steps in, and in the guise of malarial fever, pneumonia, or typhoid, burns out some of this surplus material. During the winter season, when the cellar is well filled with potatoes and the meat-barrel with freshly killed pork, these, on the Kansas farm, are consumed three times a day. The fat of the pork is heat-producing as is the starch of the potato; there is relatively little proteid and the common results of this diet are colds, humors of the blood, and a constant feeling of overheating and sluggishness. There is a constant desire for some food not frequently obtained in the dietary, and ere long we find these same people eating immoderately of pickles and other very acid foods.

The denizen of the town draws largely for his food-supply from the local meat market, and that meat is usually beef. Where the others eat frequently of heating materials, his diet consists of an excessive amount of proteid foods and overbalances his dietary as thoroughly as his country neighbor, though in the opposite direction. His punishment is even greater than is the punishment of those who err in the opposite direction. The kidneys are taxed beyond their ability to excrete the nitrogenous waste. These waste materials accumulate in the blood, many of them are deposited in the tissues, and he becomes a victim of rheumatism, gout, or Bright's disease.

Estimates of what a balanced dietary really consists have been made by finding out what food is really consumed by a large number of families, the members of each of which have remained in good working physical condition. These amounts are added together and averaged up; and we come to the conclusion that if a large number of individuals, doing approximately the same amount and kind of labor, consume approximately the same kind and amount of food and remain well, such food is proper and best under those conditions. Reasoning thus, we find that a man of average size, doing moderate labor, requires about five parts of carbohydrate material to two parts of proteid, and one of fat, and that wherever this proportion is greatly varied, difficulties in digestion and metabolism occur. The man of lighter weight will require less; the person, man or woman, laboring less, will require less; the same individual will require less in summer than in winter, and in summer will be able to consume a smaller proportion of fat to the other foods than he does in winter. On the other hand, as his work increases the food also will have to increase; and the growing, active young person, building for old age, will consume more in proportion to his weight and other conditions, than will the adult.

We have given the average proportions of the food materials in the diet. These should be sufficient in quantity to yield to the moderate worker three thousand calories of energy, for all food can be measured by its heat-producing qualities. The day-laborer will require between three thousand five hundred and four thousand calories, while the vigorous athlete or the lumberman in the woods of Maine consumes food in excess of four thousand five hundred calories per day. Man, after all, may be compared to an engine, and food to the fuel and the material used for repairs, the proteids being the repairing material and the carbohydrates and fats the fuels. The fats are the intense fuels, yielding the very highest amount of heat for the least bulk, and sugar is a quick fuel which yields its heat most readily, both of these, because of this quick heating property, being adapted to cold climates and occupations entailing exposure, while the starchy materials are good, steady fuels, but are slower in their action. We might carry the comparison further; for some engines make much better use of their fuel than do others, and therefore require less; and wherever there is friction—and in man that friction is usually due to his mental attitude—machinery will progress more slowly, and the wear and tear will be greater. So we find the man or woman who frets and worries wearing out early in life, never having a reserve of strength for emergencies and rarely storing surplus fuel in the form of fat.

There are thin, poorly nourished individuals who daily consume an excess of food but are afflicted with such a poor mechanism that they are able to make but little use of the materials consumed.

Home Floral-Culture.

HOPE TEVIS.

Every one should cultivate flowers. They make the home more attractive and are a rest to the eye. Any one may have them. The expense is comparatively nothing and a few minutes spent each day by the farmer in caring for the shrubs and flowers in his yard, and a few minutes spent by the housewife in directing him, will not be wasted or missed, and your home will have an attractive appearance such as only flowers can give.

First and most important in cultivating flowers, is to have the soil in the proper condition and to have the beds in a good location.

One must, if living in the country, have the chickens fenced away, for chickens and flowers do not thrive well together. I would not advise the planting of a large number of flowers unless they all can have the care and attention they require. It is a good plan to have a number of perennials, such as the perennial sweet-pea, poppy, phlox, daisy, aster, iris, peony, and a great many others, which are hardy and require very little attention when once started. I would not advise the growing of June roses or shrubs that only flower once, then look dead the rest of the season, unless one has room to put them out to one side.

The sweet-pea is a favorite with nearly every one. Their dainty colors and delicate perfume makes them very popular. To succeed best they should be sown the last of February or the first of March. Dig a trench about a foot deep and drop the seeds in this, covering them about an inch with light, fertile soil. When they come up fill the dirt in around them to the top of the trench. When they commence to vine give them brush or string to support them. Do not use woven wire, for it draws the heat of the sun and the plants are apt to turn yellow and die.

Pansies are a sweet and much-loved flower. They had no less than twenty-five old-time or pet names, for every country and province had its own terms of endearment for it.

The Italian name was "idle thoughts," the French name was prettier. It was "pensee" (thoughts or thoughtfulness), from which came our modern word, pansy.

Shakespeare called it "love in idleness," and most of the early poets spoke of it as "heartsease." Pansies are easy to raise. Sow the seed in a shallow box of earth in March and set in a warm place, covering it with a piece of glass to keep the earth moist until the seeds germinate. The plants will be ready to transplant by the last of April. It is a mistake to think that the richer the soil the better it is for pansies. I thought so once but learned otherwise from experience. When I prepared my pansy-bed I made it north of the house as they require a cool, shady place. I got leaf-mold and decayed wood from the timber and I thought I would have an abundance of bloom. The plants throve well—in fact, the vines grew to be a foot or more long, but the blossoms were very few. The next time I set my pansy plants in very poor soil. The plants did not grow so large but I had an abundance of blossoms.

To keep most annuals blooming, pick the old blossoms off; for if allowed to form seed they draw the substance out of the plant and it does not send out many new buds. This is especially true of the pansy. It pays to be generous with the blossoms, to divide with friends and neighbors, for the more they are picked the more abundant will be the bloom; as if they knew and were trying to repay for the care taken of them.

Plants for bedding are the phlox drummondi and the dianthus pinks. For edging, sow sweet alyssium or portulacca. Petunias are very hardy; they will grow and bloom under almost any condition. A bed of these will make a very fragrant and showy appearance. For very early bloom set out tulips, crocuses, daffodils and hyacinths. These bloom early and soon die down. To avoid having an empty space the rest of the summer, plant verbenas amonst them; they will not injure the bulbs in the least.

If you wish your yard to have a tropical appearance, plants cannas, Caladiums, and nicotianas. These plants have large, broad green leaves. For something to greet you each evening with its beauty and fragrance, when you gather out on the porch, plant a bed of four-o'clocks near by. If there is an unsightly fence near, there is no vine which will cover it so effectively as the morning-glory vine. But as the farmers object to having them cultivated so near the fields, as they spread ripidly and become a nuisance in the corn, we will have to substitute something else—the moon flower for instance, or the cypress vine and the Maderia vine, which makes a very dense growth with thick, waxy looking leaves.

Set out the clematis if you wish vines for flowers; there are blue, red, and white ones. These set so that they vine together make a very beautiful show of blossoms. The purple bean is also a good bloomer.

Do not neglect to prepare plants for winter blooming in the house, for east or north windows where there is not much sun. The begonias are the best flowers to grow. There is a large variety of them to choose from so if one has nothing else she will have a nice window with many kinds of flowers. The vernon, purity, and rubra are amongst the best for bloom. There are a number of varieties that are lovely on account of their foliage. The sweet olive, or olea fragrans, will also do well in a north window; it requires about the same care as a geranium.

Unless one has a southern exposure, I think the geraniums are best wintered in the cellar. At least that is my experience with them, for we have experimented with them, the result being no bloom in an eastern window where they receive only the morning sun. Of course the foliage is pretty but they take up the room of some other plants that would flower in abundance.

We have tried starting new slips, and have tried keeping old plants dormant through the summer, picking off the buds; but flower in the winter in an east window they would not.

Bulbs forced in the house in the winter are very satisfactory. In the fall pot hyacinths, jonquils, corcuses, tulips and easter lilies. Set in a dark place until they form roots then bring them to the light, a few at a time. In this way they will be blooming all winter.

The Chinese sacred lily is a favorite. Put the bulb in a deep glass dish of water, fill around with pebbles and shells. It is very interesting to watch it grow, for it makes a very rapid growth. The house plant has its enemies, such as the green aphis, mealy bug, scale and red spider. These can all be gotten rid of by the persistant washing with tobacco tea. Fir-tree soap is also highly recommended.

Do not keep too many flowers in the window. A few large, nice ones are preferable to a number of inferior ones crowded together so that none make a nice appearance.

Yes, it takes some time and regular attention to keep nice flowers in the house, but nothing will repay one so well. Make a study of every plant in the window, its growth, its habits. Floriculture is extremely fascinating and your interest will increase as you progress in the study of it.

FLOWERS.

"How they lift the soul above its petty trials,
Glorious messengers to inner self from Heaven;
Gazing in the lily's depth what self denials
Do we utter, till our souls from sin are shriven.

"God's dear angels are they in the hour of sorrow;
Their sweet faces simply say 'Do thou look up,
Thou shalt meet thy loved ones on some brighter morrow;
Never ending joys are thine, do thou but drink that cup.'"

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Mutual Improvement Club, Carbondale, Osage County (1895).
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, Osage, Osage County (1888).
Ladies' Crescent Club, Tully, Rawlins County (1902).
Ladies' Social Society No. 1, Minneapolis, Ottawa county (1888).
Chalitso Club, Highland Park, Shawnee County, (1902).
Cultus Club, Phillipsburg, Phillips County (1902).
Literature Club, Ford, Ford County (1903).
Sabean Club, Mission Center, Shawnee County, Route 2, (1899).
Star Valley Women's Club, Iola, Allen County (1902).
West Side Forestry Club, Topeka, Shawnee County, Route 8, (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
Taka Embroidery Club, Madison, Greenwood County (1902).
Mutual Improvement Club, Vermillion, Marshall County (1903).
Prentis Reading Club, Cawker City, Mitchell County (1903).
Cosmos Club, Russel, Kans.

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

I have thought it better to continue the Club Department during the summer, since so many of the rural clubs have their most active season then. I hope these columns will be very helpful, and shall always be very grateful for suggestions for improvements, or requests for special features.

The next eight months, beginning with the issue of May 25, programs of study will be offered, as heretofore, from week to week, under the following three headings: Famous Women of the World, French and English Art, and Miscellaneous. The first one may perhaps be called an educational program. It includes names of women of all ages and lands, and will study not only characteristics of the women themselves, but will also glance at the history and conditions of their native lands. The names to be studied follow:

Joan of Arc, "The Maid of Orleans;" Queen Esther, Cleopatra, Frances Willard, Marie Antoinette, George Eliott, Catherine de Medici, Elizabeth Barrett Browning, Empress Josephine, Florence Nightingale, Saint Theresa, Jenny Lind, Gail Hamilton, Queen Elizabeth, Madam de Stael, Hannah Moore.

I have looked over the books in the Traveling Library rooms and find that for this program the Traveling Libraries have a splendid assortment. If your club decides to study some such program as this, send the subjects to Miss Nellie Armentrout, Librarian, Traveling Library Commission, and she will see that you get good material for your study.

The Art program is designed especially for those clubs which intend to procure one of the Traveling Libraries during the year. It is distinctly a culture course. It will contain the following names, two programs being devoted to each artist:

English—Landseer, Reynolds, Millais, Turner.

French—Carot, Rosa Bonheur, Breton, Millet.

For this outline, Mrs. Aplington, of the Traveling Art Galleries Committee, advises the use of the little books called "Young Folks' Library of Choice Literature," and "Great Artist Series." They can be obtained of Zercher, of Topeka, for 10 cents apiece, an outlay of 80 cents for the eight. These little books are fine, being written in a very readable style which a child can understand, yet accurately and concisely. They have several prints of the pictures painted by the artist, also. There is another set of booklets, called "Masters in Art," a style more elegant in its cuts and general make-up, for 15 cents a copy. Send to Bates & Guild, publishers, 42 Chauncy Street, Boston, for them. The Perry prints, which cost a cent apiece, are invaluable helps in the study of art, for the best way to study an artist is to study his pictures. With the art program will appear on this page a reprint of one of the famous pictures by the artist under discussion.

The miscellaneous program attempts to include as wide a variety of subjects as possible in the sixteen numbers. It is as follows:

Church Affairs, A Day With Shakespeare, The Day's Work, Civic Improvement in the Country, The Legend of the Holy Grail in Song. Story, and Picture, Modern Science, "All the World's a Stage" (infancy, childhood, school days, youth, the prime of life, attainment, old age, helplessness), Mission Work in the World, Music, The Great West, Present Day Literature, Topics of the Day, Art and Life, The Race Question, The Color Line, Kansas Day, Immigrants to United States.

For the miscellaneous program, the Traveling Art Galleries will supply you enough material. It would not be amiss for the club to subscribe for some standard magazine of current history, as The Outlook or Review of Reviews. This would not be at all essential, however. Indeed, the attempt has been made to make it a program which any club could follow, even though it had not the privilege of libraries or magazines. The programs are intended to be merely suggestive, and by no means inflexible or iron-clad. They may be amplified, continued, or worked over, at the discretion of each club. Questions of information on any of the topics given will be gladly received, and I will answer them to the best of my ability and according to the best authority available.

The Domestic Science Club.

Like the grass, the flowers and the weeds, the Domestic Science Club has come to live again with the rejuvenating influence of spring, and bids fair to blossom and bear fruit for the season of 1905.

The new officers are: President, Mrs. Ida M. Ferris; vice- president, Mrs. Fanny Dixon, secretary, Mrs. Mabel Hunsicker; treasurer, Mrs. Edna Rath. Board of Directors: Mrs. Ida Soxman, Mrs. Maggie Gardner, Miss Clara Moler.

The first meeting was held at the home of the president, when the following program was given:

Roll Call, "My Vacation."

President's Greeting, Mrs. Ferris.

Toasts: "Ourselves," Mrs. Dixon; "Our Neighbors," Mrs. Ida Soxman.

Music, Mrs. Mabel Hunsicker.

After which the usual luncheon, limited to four articles, was served.

We have missed the cheerful letters of the Domestic Science Club and are glad, indeed, that they have been revived and become able to send us their greeting again.

THE INTERNATIONAL SUNDAY-SCHOOL LESSON.

(Copyright, Davis W. Clark.)

Second Quarter. Lesson VIII. John 18, 28-40. May 21, 1905.

Jesus Before Pilate.

Pilate was misfit as a procurator of Judea. He was careless of the religious prejudices of the people he was set to govern. The incident of the gilt shields and the mingling of the blood of the Galileans with that of their sacrifices proves it. Another popular appeal to Rome would depose him. Imagine, then, his feelings when the feast being at its height, there appeared at his palace-gate a mob headed by the high priest, and all worked to highest pitch of religious frenzy. It was aggravating, yet fear required that they should not be driven unheard from the judgment-seat. Pilate made his first concession when he placed his judgment-seat outside the hall. The prosecutors of Jesus feared that in the palace there might be some leaven, and they would thus be disqualified from completing the feast of unleaven bread. Court having opened, the judge demanded the substance of the accusation. The answer was that the fact they had brought the accused to the governor was evidence of the aggravated character of His offense. Petty crimes they could punish; capital, Rome only. Ignoring what was said, Pilate bade them take Jesus and punish Him according to their law. This brought, as was expected, the humiliating confession that they had lost power to inflict capital punishment. Again the accusation is demanded, and the reply is that Jesus proclaims Himself King. Pilate rises, beckons Jesus to follow him into the judgment-hall, and asks Him, "Art thou [poor, lone peasant] King of the Jews?" Jesus puts the counter-question, "Do you ask Me if I am King in the Roman or the Jewish sense?" and then proceeds, "In the Roman sense I am no king. In the mistaken Jewish sense I am no king. My kingdom is unlike any earthly kingdom. If it were like them, I would have trained my followers to arms." "Are you a King in any sense?" asks Pilate. "I am. My realm is truth. My subjects, the lovers of truth." "Truth! What transcendentalism is this?" A moment later Pilate is announcing the innocense of the accused. It raised a tumult. Accusations fly like arrows. Pilate sends Jesus to Herod Antipas, then a guest in Jerusalem, most of the public life of accused having been spent in Gallilee, of which Herod was ruler. But the expedient fails. Jesus is returned. "What shall I do with Jesus?" asks the jaded governor. Then for the first time ring out the fateful words, "Crucify Him!" One more protest, "Why crucify an innocent man? Let me scourge Him only." Like a wild sea the vociferation broke about the Gabbatha. Pilate tries to shrive himself by washing his hands. The Jews accept the onus. Pilate as a last appeal brings Jesus out after His scourging, and cries, "Behold the man! Is not this suffering enough?" The reply is, "Crucify Him!" Pilate retorts, "Then crucify Him, but he is innocent." Another expedient occurs to the vacillating judge. It is customary to release at this festival a condemned prisoner. "If they choose, he will release Jesus." But they choose Barabbas. Now comes the warning of Pilate's wife. The judge was on the point, even now, of acquitting Jesus, when the prosecutor uses the last arrow in his quiver, and cries, "Let this man go, and you are not Caesar's friend." "Behold your King," said Pilate. "We have no king but Caesar," they retort. "Crucify!" "Shall I crucify your King?" "We have no king but Caesar," resounds once more. So ended the long-drawn battle in which the life of Jesus was the stake. Pilate ordered Him to the cross.

* * *

The Teacher's Lantern.

Pilate is a conspicuous type of the time-server. He had no moral earnestness. He thought truth an indifferent matter. His ruling motive was to keep his place. To do this, if necessary, he was willing to condemn the innocent.

* * *

Yet to some degree he showed a Roman's proverbial regard for law and justice. He demanded the accusation and evidence. He contended with the Jews, making use of various expedients, until they were on the point of tumult; then, however, he ignominiously conceded to their demand.

* * *

Pilate's time-serving brought him small reward. He eked out his official life a few years; but, on the complaint of these very Jews whom he sought to placate by such a sacrifice of honor, he was finally deposed and exiled. His name will go down to the end of time in deepest infamy, as it is oft repeated in every land and language in the imperishable creed, "Crucified under Pontius Pilate."

* * *

"Art Thou King?" How unlikely! So it seemed to the procurator, proud of his power, and inclined to patronize the despised claimant to royalty. Yet Jesus was the real ruler, though in disguise. Pilate's power, then on the wane, lasted a scant six years longer. Jesus' dominion, ever augmenting, has lasted for twenty centuries, extending from sea to sea, and is owned by three hundred million of the race. David's cradle hymn over the infant Solomon applied better to David's greater Son.

* * *

One morally earnest soul is the touchstone for all others. They rise or fall by such test. As Jesus is the supreme ethical and spiritual character, the destiny of men is fixed by their attitude toward Him. This is not arbitrary, but inheres in the very nature of the case. A choice must needs be pressed. The cry which was heard at Pilate's judgment-seat still rings in his conscience, "Which will ye?" Will the loftiest character the world has ever known be taken as the model of one less worthy—or wholly unworthy. The circumstances do not admit of neutrality. It is still "for" or "against," "gathering with or scattering abroad." The same choice made two thousand years ago is making still in current life. There are tragic personal rejections of the Christ-ideal, as there was then a national rejection.

WILL MODERNIZE THE HOME.

(Continued from page 523.)

desired. The steam plant is more expensive than the hot-air plant but is much liked by those who use it. It may warm rooms at any desired distance from the furnace. Danger of explosion is prevented in all modern steam plants by providing in the firebox a plug that is removed by increased pressure from within the boiler. This lets the water escape into the fire and put it out before a dangerous pressure occurs.

The hot-water plant is much like the steam plant in appearance and arrangement. It is, however, filled, radiators and all, with water. An expansion tank to accommodate the increased volume of the water when it is heated must be provided. This is connected by a pipe with the other parts of the system. It must be placed higher than any radiator. In a properly erected hot-water plant, the water circulates as soon as the fire warms the furnace walls. It is easily regulated. The circulation to the several rooms is controlled by valves. This is the most expensive system to install but is well liked. Some families will have no other. The one objection, aside from the high cost, is the liability of pipes or radiators to freeze and burst on account of a very small degree of negligence in very cold weather. The writer has used the hot-water system and now has hot air and, difference of cost aside, considers the balance of advantages over disadvantages of the one system as about equal to the similar balance in the other.

LIGHTING THE FARM HOME.

This inquiry raises queries that have been in the minds and on the lips of many prosperous farmers. When the writer was a boy he helped make tallow dips each winter soon after we had killed a corn-fed beef. They were troublesome to make, expensive as to cost and an abomination in the using. Kerosene displaced them and indeed furnishes a good light. It has its disagreeable features, however, not the least of which is its propensity for breaking chimneys. There are several plans for installation of individual lighting plants of greater excellence than the kerosene lamp if one can afford the cost. From the tone of this correspondent's letter it is suspected that he will not willingly be content with anything short of an electric lighting plant; i. e., he wants the best, cleanest, least troublesome, and safest. We note that he wants not a windmill and elevated tank for his water service. Must be that he has in mind a gasoline engine to pump the water. This engine can be made to separate the cream, church the butter, turn the washer, saw the wood, grind the feed, pump the water and do many other chores, besides driving the dynamo and producing electricity for lighting and perhaps for other purposes. We have seen an estimate that a complete gasoline driven electric lighting plant, including wiring the house and all needed fixtures, can be installed with twelve lights in an eight-room house, for $250, and that the cost of gasoline to operate it—at 20 cents per gallon—will be 2½ cents for each hour operated. The same writer estimates that a larger engine and dynamo—say six-horse-power engine—capable of doing the other work mentioned can be installed with lighting accessories for the house, the cellar, the barn and enough to spare for a neighbor or two at a cost of $400.

Prices for gasoline engines vary considerably. Assuming that our correspondent has one of four or more horsepower, or will install one for various purposes other than lighting, the editor has obtained from E. P. Jordan, electrician and dealer in electrical supplies, Topeka, the following approximate estimates of cost of installing an electric light plant with 20 lights:

Dynamo	$ 80
Wiring	20
Fixtures	30
Lamps	4
Total	$144

Electric lamps average about 100 hours' service before they give out. They are replaced at a cost of 20 cents each.

The above prices should be sufficient to cover compensation of an electrician from Council Grove to set up and connect the machine, put in the wires and fixtures and join all together ready for service. The cost of the fixtures can be varied greatly, but the price named will pay for very neat and tasty oxydized copper chandeliers for the principal rooms, brackets for the bed rooms and drop cords for kitchen, pantry, bathroom, cellar, and one or two for the barn.

Such a plant, properly constructed, requires very little attention. Its care may be easily learned by the bright boy or the handy man on the farm.

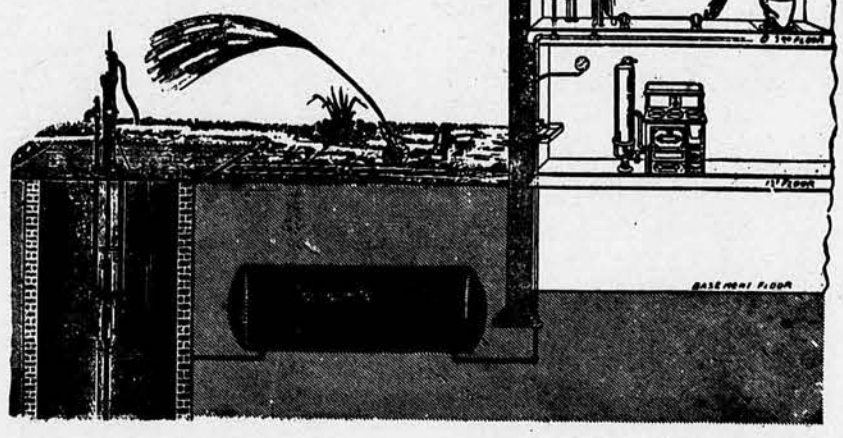
In case one does not have other use for the gasoline engine and does not care to invest so much for lighting as is necessary where the engine is charged against this plant alone, the next best arrangement is probably an acetylene apparatus. A neighbor of the writer, Mr. P. H. Forbes, of Topeka, has used such a plant for the last seven years and finds it entirely satisfactory. He lights eight rooms, two halls and cellar at an expense of $12 to $13 a year. The original cost of plant was:

Gas machine	$60
Piping the house, and lamps	40
Total	$100

Acetylene lamps are not suited for use in the barn on account of danger from fire unless enclosed lamps are used. Even these must be lighted either with matches or torch. The writer would not want such lights in the barn. Some are afraid of this kind of gas on account of its explosiveness. The modern apparatus has been brought to such perfection that explosions do not occur if the simple directions are followed.

THE AIR AND WATER PRESSURE SYSTEM.

The illustration, herewith, shows well the plan of the air and water pressure system of private water-works. Prices of the materials for such a system, except for the pressure tank, were given in the paper referred to by our correspondent. The pressure tanks are listed at prices varying from $77 for a 140-gallon tank to $219.40 for a 1,000-gallon tank. These prices are subject to a discount of 50 per cent. It is not best to use too small a tank. True, with a gasoline engine the supply of water can be replenished at any time, but it is more satisfactory to be able to store a supply for a few days and thus avoid the necessity of starting the pump too frequently. The quantity of water used by a family is greatly increased when it is made convenient to get it and when bathroom fixtures are used. The writer buys water by meter from the city of Topeka. For a family of twelve, with a horse and a cow, the average quantity used is almost exactly 7,000 gallons per month, or, say, 235 gallons per day, or counting the cow and the horse as each consuming as much as a person, 17 gallons per capita per day. If water is pumped by hand and, indeed, if the gasoline engine is used every day on account of the lights, a small compression tank will, of course, give satisfactory service. The advice of the KANSAS FARMER is that plans be made to avoid hand pumping. It is a labor the dread of which is too liable to lead to undesirable economy in the use of water.



Water Service with Compressed Air Tank.

FIRE-PROOF VAULT.

A fire-proof vault for storage of valuable papers may be built of brick and provided with iron doors, as is done in large office buildings where large books of account and many papers are to be stored. Manufacturers of safes furnish such doors and will supply plans and specifications for building vaults of sizes as desired. For the safe-keeping of such books and papers as are used by the ordinary store or are likely to be needed on a large farm, the cheapest and most convenient depository is a fire-proof iron safe. Safes are made in every desirable size and at varying prices. A good large safe can be had for less than the cost of the doors for a vault.

There is something inspiring in the thought of a family living for thirty-five years in one house in Kansas and now proposing to modernize it. Their friends, the readers of the KANSAS FARMER, will join the editor in wishing that they may live at least another thirty-five years to enjoy the fruits of their industry amid the pleasantest surroundings that can be produced.

M'LAUGHLIN BROTHERS' HORSES.

Last Friday the writer visited the fine new stables of McLaughlin Bros., at Kansas City, and was surprised to find them practically empty so rapid has been their sales. He was informed, however, that another shipment was just in from their home stables at Columbus, and he had the pleasure of seeing the horses brought into their new homes at Kansas City. This shipment was to fill a hurry order, and included a half dozen French Coach and about a dozen Percherons, that had just come over from the old country. They were in splendid condition and were practically all sold before they reached Kansas City. This bunch was the last of the importation received on April 4, which was one of the finest lots of stallions ever brought to this country. We now receive notice that McLaughlin Bros. have been notified by cablegram that Mr. James McLaughlin has just left London on the Minnehaha with the second importation of the year. These horses were due to reach New York quarantine on May 15 and will be accompanied by Mr. James McLaughlin, who states that this importation is the equal if not the superior of any yet brought over. The McLaughlins find it hard to buy the right kind of horses to supply their rapidly increasing trade. They import nothing but the best and for this reason enjoy a trade in good stallions that is second to none. Their rule has always been that the best is none too good for the enterprising farmers and breeders of America, and this fact is one of the reasons why they enjoy the confidence of the farmers and breeders of this country.

THE CONTINENTAL CREAMERY.

The Continental Creamery of Kansas, with head offices at Topeka, is the largest creamery in the world. It has a daily capacity of 100,000 pounds of butter. This is made from milk supplied by 25,000 patrons. Milk trains are run by the various railroads that this vast crop of milk may reach the factory promptly each day. The best of improved machinery and methods are used to convert this milk into the choice butter for which this company is famous. A small army of experts is employed and the highest market price is paid to the patrons for butter-fat.

The Kansas cow now produces more than $8,000,000 each year for Kansas farmers. This is more than double the cash income received by Kansas people for all the oil and gas produced in the State. The cow is queen and the Continental Creamery Company is her Minister of the Exchequer.

Watch the new announcements made each week in the advertisement of the Continental Creamery Company.

Miscellany

A New Importation of Seed Wheat from Southern Russia Urged.

SECRETARY F. D. COBURN.

It is clearly the opinion of those who have given the subject most attention that the tendency of this wheat when sown continuously in Kansas is gradually to deteriorate and assume a softness not possessed when at its best. This is accounted for, at least in part, by the greater humidity in the wheat-belt of Kansas than is common in those parts of Southern Russia from whence the best seed has always come.

Recognizing this situation, the Kansas millers' organization in 1901 assumed responsibility for the purchase and importation of a cargo of seed direct from Russia for distribution at cost to growers, who made use of it. In spite of the fact that the seed upon its arrival was found not to be of as good a grade as had been represented and was more or less foul with weed-seeds, the good accomplished was worth many times the cost, which was not great to any individual. Some mistakes made in this initial undertaking would of course not be repeated.

It is time another importation was made, on a larger scale, for next fall's seeding, and with the details for securing prime seed more carefully worked out. Mr. B. Warkentin, president of the Newton Milling Company, of Newton, Kans., a native of the country from which the wheat comes and who has business connections there, supervised the importation and distribution in 1901 in a manner that entitled him to the thanks of all Kansas. It would be a fine thing if the millers and grain-dealers of Kansas and Oklahoma could arrange through him or some other competent man or committee to undertake such a work this year. Possibly the Kansas Milling and Export Company, whose representative at Kansas City is Mr. Chas. L. Roos, might manage the undertaking to advantage, and the doing so would be a guarantee of competent service.

I think it would be advantageous for every one interested in maintaining the yield and outstanding quality of our wheat to use for his next sowing at least a portion of imported seed, and in order that it may be obtainable I suggest that all such persons correspond with Mr. Warkentin or Mr. Roos, making helpful suggestions and stating the quantity of seed likely to be needed by them or in their localities.

The pulse of the business world is and has been for a decade more or less affected by the output of the Kansas wheat-fields, constituting as it does such a notable factor in the breadstuff trade, and our people, every one of whom is interested either directly or indirectly, can not afford to neglect any reasonable effort for making secure the prestige already attained, or enhancing it still further as a valuable asset.

The National Federation of Millers will be in annual meeting at Kansas City June 7-9, and as many Southwestern millers will doubtless be there, it should afford an excellent opportunity for them to get together, compare notes and devise plans for cooperative action to secure the needed seed from abroad, and I am hoping there will be no default.

Commencement at Kansas State University.

The program for commencement week at the University of Kansas has been announced. The exercises will begin on the evening of June 1 with the concert by the School of Fine Arts. June 4 vesper services will be held on the quadrangle at 4 o'clock. In the evening, Samuel A. Eliot, a son of President Eliot, of Harvard University, will give the baccalaureate sermon. The evening of June 5, James H. Kirkland, Chancellor of Vanderbilt University, of Nashville, Tenn., will give the Phi Beta Kappa address. Tuesday morning, June 6, the regular class-day exercises will be held on the campus, and at 11 o'clock, P. C. Young, of Fredonia, of the class of 1882, will give the alumni address. In the afternoon the annual alumni baseball game will be played on McCook field, and in the evening the Chancellor's reception to the graduating classes will be held in Snow Hall. On Wednesday morning at 10 o'clock in University Hall, Governor E. W. Hoch will deliver the annual commencement address. Following this, and closing the exercises of commencement week, the annual University dinner will be served in the new law building.

Kansas Hard Winter Wheat Flour in the World's Markets.

It will be remembered that a few years ago some of the larger Northwestern milling concerns were at considerable pains to widely advertise that Kansas wheats were not used in the making of their flours; leaving the inference that Kansas wheats, being inferior, were not wanted. This was probably inspired by jealousy and the inroads flour from Kansas hard winter wheats were making in their markets. Investigation revealed, however, that while Northwestern millers were publicly belittling the Kansas wheat they were secretly buying it wholesale to blend with their spring wheats of the North.

Not only does Kansas produce wheat in larger quantities than any other State, but the quality, as a rule, is unexcelled; and with a view to maintaining its high standard, Secretary Coburn of the Board of Agriculture is urging another importation of seed from Russia for next fall's sowing. One of the best investments the Kansas wheat-farmer could make would be to purchase imported seed-wheat say once in several years, in order to insure against the possible deterioration in the quality of wheat crops.

Kansas wheat-growers and millers, it would seem, have now reached a point where they should begin to reap whatever benefits attach to the reputation for producing first-class commodities, and they must continue to deliver the goods.

As suggestive of the place Kansas flour occupies in the markets of the world, and its importance in relation to the trade, is cited the following from the European Department of the Northwestern Miller, published in the heart of the American spring-wheat country, in the issue of May 10, under a London date-line:

"Kansas flour of the 1904 crop disappeared from this market some time ago, and really good patents milled from hard winter wheat are now hardly to be found in London.

"Kansas mills were last week quoting, at any rate in some districts, patents for prompt dispatch, which of course meant old-crop flour, at figures slightly below those they have been quoting for weeks and months. But the reduction, such as it is, is too small to permit of any business with this side of the Atlantic."

It is also evident that close tab is kept in Europe on the conditions of the growing wheat in Kansas, as the London correspondent further says:

"That the prospects of winter wheat are excellent is evident from the reiterated offers we are getting on this side, of new-crop flour for July-August dispatch. Here, again, there is some irregularity in price, some mills asking 24s 6d, and others 25s or even more, for "good patents" milled from hard winter wheat.

"Importers on this market mostly say that they are not willing to do business under such conditions, but I have no doubt that some business in July-August Kansas flour has been transacted, though it would be difficult to say how much."

Kansas wheat and flour have a clamorous world for a market.

St. Louis Wool Markets.

We are in receipt of the wool circular for 1905 of A. J. Child & Sons, 511 Main St., St. Louis, Mo. This firm has had fifty years' experience in the sheep and wool business, and for thirty years has been handling wool on the St. Louis markets. For many years they have handled the best clips in Kansas and will send this comprehension wool circular to any of our readers who mention this paper. Messrs. Child in a letter to the KANSAS FARMER say: "The wool market here is in excellent condition, in fact there has been a 3-cent advance within ten days, and prices now are highest in the last fifteen or twenty years, and still advancing. This ought to be good news to your subscribers and ought to stimulate wool and sheep industry. Ready buyers for everything offering and at crackerjack prices."

For wools in this territory they quote: Bright medium 28 to 30, dark medium 24 to 27, light fine 22 to 24, heavy and buck 12 to 19.

Visitors to Kansas State Agricultural College.

Nearly 500 excursionists from the northwestern part of the State came to Manhattan over the Rock Island on May 13. The object of the visit was to inspect the Kansas State Agricultural College. The larger portion were teachers and students who contemplate attending college there. A students' recital was given in the afternoon, and in the evening previous to the visitors' departure, the college band gave an open-air concert.

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 subscription for one year and one dollar to pay for both. In like manner two new subscribers will be entered, both for one year, for one dollar. Address, 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."

In the Dairy

Description of the Hegelund Method of Milking.

FROM WISCONSIN STATION BULLETIN 96.

The milking is done with dry hands and with the whole hand. After the milk flows readily the milking is proceeded with as rapidly as possible and without interruption until full streams of milk are no longer obtained. At this point the milker begins with the manipulations of the udder, which are three in number, and may be described as follows:

First Manipulation.—The right quarters of the udder are pressed against each other (if the udder is very large only one quarter at a time is taken),

Fig. 1.—First manipulation of udder, right quarters.

with the left hand on the hind quarter and the right hand in front of the fore quarter, the thumbs being placed on the outside of the udder and the four fingers in the division between the two halves of the udder. The hands

Fig. 2.—First manipulation, left quarters.

are now pressed toward each other and at the same time lifted toward the body of the cow. This pressing and lifting is repeated three times. The milk collected in the milk cistern is then milked out and the manipulation is repeated until no more milk is obtained in this way; then the left quarters are treated in the same manner. (See figs. 1 and 2.)

Second Manipulation.—The glands are pressed together from the side. The fore quarters are milked each by itself by placing one hand, with fingers spread, on the outside of the quarter and the other hand in the division between the right and left fore quarters; the hands are pressed against each

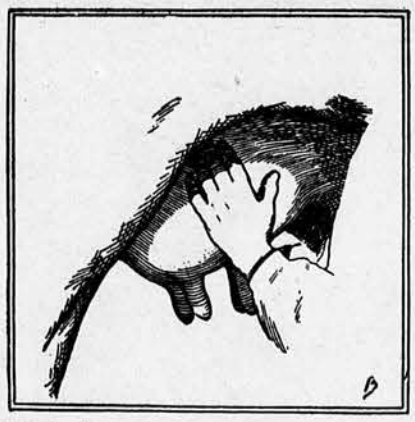


Fig. 3.—Second manipulation, right fore quarter.

other and the teat then milked. When no more milk is obtained by this manipulation, the hind quarters are milked by placing a hand on the outside of each quarter, likewise with fingers spread and turned upward, but with the thumb just in front of the hind quarter. The hands are lifted and grasp into the gland from behind and from the side, after which they are lowered to draw the milk. The manipulation is repeated until no more milk is obtained. (See figs. 3 and 4.)

Fig. 4.—Second manipulation, hind quarters.

Third Manipulation.—The fore teats are grasped with partly closed hands lifted with a push toward the body of the cow, both at the same time, by which method the glands are pressed between the hands and the body; the milk is drawn after each three pushes. When the fore teats are emptied, the hind teats are milked in the same manner. (See fig. 5.)

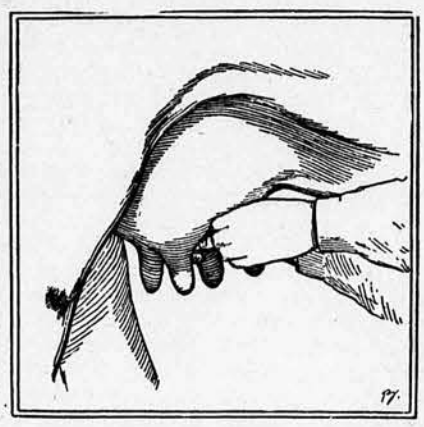


Fig. 5.—Third manipulation.

CONCLUSIONS AND RECOMMENDATIONS BY THE HONOLULU EXPERIMENT STATION AFTER EXPERIMENTING WITH THE NEW METHOD.

Although the experiment was limited to a thirty days' trial with only two cows, the circumstances under which it was conducted are such as to justify us in concluding that—

(1) After-milking by the Hegelund or manopulation method is entirely practical, either on a large or small scale.

(2) Such practice would add at least $10 per annum to the product of each average dairy cow, or every ten cows would yield the average product of eleven cows without additional expense other than the slight cost of extra labor.

(3) The above is a direct gain convertible into cash twice every twenty-four hours, while on the other hand the favorable after effects of exhaustive milking in developing and maintaining a larger and longer flow of milk can hardly be estimated.

(4) The increased richness of the after milk shows plainly how the quality of the general product of any dairy may be improved by this simple method. Probably much of the poor milk sold in the Honolulu market is traceable to a lack of thoroughness in milking, and to the more or less prevalent practice of allowing the calves to do the aftermilking, rather than to water added. The practice observed even in good dairies of allowing a hungry calf to do the stripping in order to prevent the cows from getting caked udders, or at least to prevent them drying off too soon, it is needless to say, is good for fattening calves but profitless to the owner.

The Hegelund method of udder manipulations is easily learned by any intelligent milker who is interested in his work (see illustrations and description), but since such help (in the writer's experience, at least) is difficult to find in Hawaii, it would be advisable for the owner, or man in charge, to assume the responsibility of after-milking the whole herd rather than expect the regular milkers to apply the manipulations to their respective cows. Such a course would lead to greater expertness, uniformity, and thoroughness, which are important principles in the method.

A month's persistent practice should enable the operator to after-milk from twenty to thirty cows per hour. The time so expended would prove by far the most profitable in the dairy, both in direct and indirect results.

The practice of this method as suggested would permit of an accurate check on the milkers, especially in large dairies.

It is believed that only minimum results are recorded in our experiment. Other investigators have included more or less strippings in the aftermilking, much of which is left by careless or ignorant ordinary milkers. In Scandinavia, where the manipulation method originated, the claim is generally made that the method will bring a regular increase in the milk yield amounting to three-fourths to 1 liter (1.7 to 2.4 pounds) per head per day. If this is true then such large after-yields mean one or the other of two things—either the first or regular milking is carelessly done, or else the system has been more highly perfected there than here. The fact probably is that the reports refer to maximum results, which are misleading.

The investigations of Prof. F. W. Woll at the Wisconsin Experiment Station covered a period of some four months, during which time 142 different cows were under experiment. The largest amount of milk per day obtained in the after-milk from one cow was 5.5 pounds and of fat 0.64 pound, the smallest amount being 0.20 and 0.02 pound of milk and fat, respectively.

The summary for 142 cows further shows that about a quarter of the cows gave less than one-half pound of after-milk, about one-third gave between one-half and 1 pound, and nearly another third gave between 1 and 2 pounds. Ten per cent of the cows gave more than 2 pounds (almost 1 quart) of milk per day in the aftermilking. The average amount of after-milk for the 142 cows was 1.08 pounds per head per day. The average butter-fat for all the cows was one-tenth of a pound per head per day.

Professor Woll concludes that: "The daily production of milk from our dairy cows can generally be increased by combined clean milking and manipulation of the udder by at least 1 pound per head, and that of butter-fat by one-tenth of a pound. For a lactation period of 300 days this is equivalent to an increase of 30 pounds of butter-fat, or 35 pounds of butter per cow per year." Estimating Wisconsin to have about a million milch cows, increasing their yields to the maximum would add 30,000,000 pounds of butter-fat to the annual production, worth not less than $6,000,000 at 20 cents a pound (a low valuation according to the Elgin market).

It is urged that dairymen reading this bulletin test the method herein described.

A Fire Department in Your Own Home at Low Cost. Protection Assured and Guaranteed. Endorsed by Fire Insurance Writers and Chiefs of Fire Departments Everywhere.

For one dollar, I will send postpaid to any address, my full and complete formula for making and using my celebrated dry powder fire extinguisher, the materials for which can be purchased from any druggist for a few cents per pound. So simple a child can operate them. Protect your homes, farm and ranch buildings, oil derricks and other structures. Don't pay extravagant prices for extinguishers not a whit better than mine. Its effects are instantaneous and certain. Entirely safe and as harmless as sugar to anything except fire which it destroys in the twinkling of an eye. Made in a few minutes at your home. Always ready. Never deteriorates. Keeps indefinitely in any climate. Supply your neighbors and others at a handsome profit. Splendid opportunity for farm boys to make some extra spending money. Don't delay. This offer may not appear again. Order to-day. You can not afford to be without this protection. Address, J. R. Lusk, Topeka, Kans.

The Portland Exposition.

"Judging from the hundreds of inquiries we are getting from people in the East," writes Assistant General Passenger Agent A. D. Charlton at Portland, Ore., "we are going to have a regular outpouring of visitors to the Lewis and Clarke Centennial which opens June 1 here in Portland. Our splendid double daily train service from St. Paul will be still further improved to accommodate our patrons and besides we have our through new Northern Pacific-Burlington train with entire new equipment. From the tenor of the letters we are receiving we find that thousands of farmers and others from the Eastern States will take advantage of the low rates to look up locations for themselves and families in Washington, Idaho, and Oregon. We are making arrangements for all our patrons to have stop-over privileges and also will arrange for very low round trip rates to points on our lines so that homeseekers can make side trips from Portland to see the country and seek locations along the Northern Pacific."

We call attention of our readers to the advertisement of C. B. Poke Manufacturing Company in this number. This firm is the largest manufacturers of animal pokes and stack anchors in the United States, and have recently erected at Kansas City, Mo., a factory adequate to their large and growing business. Their pokes are finished in a neat and workmanlike manner and are strictly practical—will do what they claim for them—keep breechy cattle where you put them. Write for circulars and price.

Lakeside Extraordinary Offer.

We are offering a veterinary book called "Home Treatment for Domesticated Animals," as a premium to the Kansas Farmer. Written by a graduate of one of the foremost veterinary colleges of this country, containing more than 600 pages. Indorsed by the late James A. Mount, Governor of Indiana, who was a practical farmer and stockraiser.

The author having had more than twenty years' practice which has qualified him to publish this book written in plain, simple language devoid of all technical medical terms so perplexing to the average reader. It is a treatise for the diseases of horses, cattle, sheep, hogs, and their causes, preventions, symptoms and cure, describing the symptoms so accurately that the most ordinary man can correctly locate the disease; also giving a written prescription for each case. This is a valuable book to the farmer and to the stockraiser.

Regular subscription price for "Home Treatment for Domesticated Animals," $1; regular subscription price for Kansas Farmer for one year, $1. On receipt of $1.25 the book will be sent to your address, postpaid, and the Kansas Farmer mailed to any address for one year.

Labor.

Labor is life! 'tis the still water faileth;
Idleness ever despaireth, bewaileth;
Keep the watch wound, or the dark rust assaileth;
Flowers droop and die in the stillness of noon.
Labor is glory!—the flying cloud lightens;
Only the waving wind changes and brightens,
Idle hearts only the dark future frightens,
Play the sweet keys wouldst thou keep them in tune.

—Frances S. Osgood.

To the Stockholders of the Farmers Cooperative Shipping Association.

You are hereby notified that the Annual Meeting of the Stockholders of the Farmers Cooperative Shipping Association will be held at the National Hotel, Topeka, Kansas, at 4 p. m., Wednesday, June 7th, for the purpose of electing a Board of Directors and transacting such other business as may legally come before the stockholders.

F. Englehard, President.
H. R. Signor, Secretary.

When writing advertisers please mention this paper.

POULTRY BREEDERS' DIRECTORY

PARK VIEW FARM
WHITE PLYMOUTH ROCK EGGS for sitting—Fine stock; farm raised. Price, $1 for 15; special price by the hundred. Shipped by express, carefully packed, anywhere. Mrs. O. E. Walker, Route 8, Topeka, Kans.

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

BUFF COCHIN EGGS, $1 per 13 from rich Golden Buff; heavy feathered birds, scoring 93 to 94½. Eggs ready to ship now. Romo Martindale, Topeka, Kans.

EGGS FOR SALE—White Wyandottes, from choice matings; can ship same day order is received. Price, $1 per 15; $4 per 100. M. Schrope, Route 1 Larned, Kans.

INDIAN RUNNER DUCKS—Eggs, $1.50 per sitting. Most profitable fowl raised; 200 eggs per year. Great demand for fowls and eggs. Order now. L. D. Arnold, Abilene, Kans.

S. L. WYANDOTTES—Pure-bred eggs, for hatching, from choice matings, at $1.50 per 15. Mrs. J. A. Magee, Larned, Kans.

PURE-BRED ROSE COMB BROWN LEGHORN EGGS—15 for $1; 50 for $2.50; 100 for $4. Mrs. John Holzhey, Beudena, Doniphan Co., Kans.

SILVER WYANDOTTES exclusively; pure-bred farm range; 1st prizes twelve years. Nice fertile eggs, 100, $4. Mrs. J. W. Gause, Emporia, Kans.

EGGS—From full-blood S. C. B. Leghorns, $1.25 for 30. Mrs. A. G. Page, Route 1, Eudora, Kans.

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

WHITE WYANDOTTES—Choicely mated and free range stock. Eggs, $1.50 per 15. Incubator eggs, $4 per 100. L. D. Arnold, Abilene, Kans.

FOR SALE—White Plymouth Rock eggs, $1 for 15. R. F. Meek, Hutchison, Kans.

WHITE ROCK AND BARRED ROCK EGGS for hatching, 75 cents for sitting of 15, either kind. D. S. Thompson, Route 1, Welda, Kans.

FILL YOUR INCUBATOR with eggs of my utility and beauty strains. Barred and Buff Plymouth Rocks, White Wyandottes, S. C. Black Minorcas, S. C. White and Brown Leghorns. Fresh eggs, carefully packed, $5 per 100; $3 per 50; $1.50 per 15. James C. Jones, Leavenworth, 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.

FOR SALE—Scotch Collies. One male about full grown; pure stock and fine individuals, but cannot furnish pedigree. Price, $5. Females about 4 months old, of best stock, with pedigree. Price, $5. Hill Top Farm, Parkville, Mo.

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, 801 East First Street, Newton, Kans.

SILVER WYANDOTTES EXCLUSIVELY—Great layers. Fine stock eggs, 15 for $1; 30 for $1.75. Address W. C. Koenig, First National Bank Bldg., Nortonville, Kans.

FOR SALE—Barred Plymouth Rock eggs, from 40 large, fine, rock-shaped, single-standard hens. Orchard range, mated with standard-colored males, scoring from 91 to 92½, by Russell & Rhodes. Best eggs in the State for $1 for 15. A. C. Ralt, R. F. D. 4, Junction City, Kans.

WHITE WYANDOTTES—Eggs for hatching from choice matings, $1 per 15; $4 per 100. S. W. Artz, Larned, 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 Cochin Bantams. James C. Jones, Leavenworth, Kans.

WHITE WYANDOTTES—Large birds, farm range. Eggs, 75 per 15. Henry Harrington, Clearwater, Kans.

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

FOR SALE—All kinds of fancy pigeons, reasonable. Toulouse geese eggs, $1 per sitting; Pekin and Rouen duck eggs, 18 for $1. Muscovy duck eggs, 10 for $1; White Holland turkey eggs, 9 for $2; poultry eggs, 15 for $1, from the following kinds: Barred Plymouth Rocks, Buff Cochins, Houdans, S. S. Hamburg, Cornish Indian Games, Buff, White and Silver Laced Wyandottes, Brown, White and Buff Leghorns, Golden Seabright Bantams, Pearl and White Guineas, Peacocks. Write for circular. D. L. Bruen, Platte Center, Neb.

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.

WHITE PLYMOUTH ROCKS Exclusively. Two grand pens scored stock. Eggs from my best matings, $1.50 per 15; $2.50 per 30. Incubator eggs, $5 per 100. M. B. Turkey eggs, $2.50 per 11. J. C. Bostwick, Route 2, Hoyt, Kans.

FOR BUFF PLYMOUTH ROCK eggs, from best stock, send to Gem Poultry Farm; 15, $2; 30, $3.50. Pure M. Bronze turkey eggs, 11, $3. C. W. Peckham, Haven, Kans.

FOR SALE—Eggs, express prepaid, B. P. Rocks, $1 per 15; $4.50 per 100. S. S. Hamburgs, $1.50 per 15; $7 per 100. Mammoth Pekin Ducks. Also a few high-scoring Hamburg cockerels for sale. Circular giving score and full description free. Mrs. Walter Roswurm, Route 2, Council Grove, Kans.

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.

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

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, 921 Topeka Ave., Topeka, 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.

The Poultry Yard

CONDUCTED BY THOMAS OWEN.

Eggs for Hatching.

Nothing connected with the poultry business is attended with any more disappointment to buyer as well as seller, than dealing in eggs for hatching. The seller or advertiser knows his stock and advertises the eggs in good faith, but no power on earth can foresee the expectation of the buyer, nor can he foretell the number and quality of chicks that may be brought forth through the manipulations of a fidgety, vacillating old hen. To the buyer and seller a dollar has different measurements of value when applied to a sitting of eggs. With the fancier, a sitting of eggs that sells at $1 would be placed at a very low estimate. With the average buyer, the inclination is to compare the price with a dozen of eggs that can be bought at the grocery at one-tenth the price. The buyer forgets that it is not mere eggs that he is buying, but that he is buying pure-bred stock in embryo. Just what he can get from them in numbers will depend largely on his own efforts. What he will get in quality depends on the breeding stock of the advertiser.

So much trouble has come along the line of selling eggs that some breeders of pure-bred poultry have withdrawn from the egg-market. They state in their advertisements that they sell no eggs for hatching. On the other hand, quite a number of excellent breeders cater largely to the egg trade. The buyer of eggs for hatching should understand that in a certain degree he is buying a "pig in a poke;" that there is a certain element of chance about his purchase, and he should not place too high an estimate upon it. If a person has common or mongrel stock, we know of no easier or cheaper way he can make improvement in his flock than by buying a sitting of eggs, even though he should buy the cheapest. By doing this two or three years in succession and selecting the best males from his flock, he will soon build up a good grade of stock.

The buyer of eggs should not expect fifteen chicks from fifteen eggs after the eggs have been shipped a hundred miles or more. This does not occur under ordinary conditions, and one should not expect more from abnormal than he would from normal conditions. The buyer should be slow to kick because he fails to get satisfaction; but rather, write a friendly letter stating the facts and that he expected more, remembering that "a soft answer turneth away wrath." Most breeders will be willing to deal fairly with patrons if they are convinced that they are not being imposed upon, for there is a lot of imposition attempted at times on the part of the buyer, just to get another sitting of eggs free. We know of a number of instances where unscrupulous buyers have imposed upon some of our best and most honorable breeders. But where there is forbearance on each side, and an intention of dealing honestly, all matters of difference can easily be adjusted.

Poultry Pointers.

A broiler is a chicken of two pounds or under. A spring chicken weighs from two to four pounds. A stewing or roasting fowl weighs four or more pounds.

Chickens that are insufficiently fed have a struggle to live and are money-losers all their lives. That one may get the best results from his fowls he should be willing to feed liberally.

People are often disappointed when they see young chicks from eggs they have bought of some new variety. They appear to know how an adult fowl of that breed should look and when they see chicks "off color," they become skeptical and think the eggs were from impure stock. The chicks of a Langshan, which itself is black, are almost white, with a little gray on the back and the head. Barred Plymouth Rock chicks are almost black when hatched, and those from White Plymouth Rocks and White Wyandottes are often quite dark in color when hatched But in a few weeks' time they lose these first feathers and their plumage approaches the color of the adult fowl

One great truth about corn is as true as that sunshine makes daylight, and that is that corn contains an essential oil which is transformed into heat when taken into the stomach of any animal, hence in hot seasons it is not the best food for poultry, but it is a very valuable part of food in winter. A little investigation and thought will enable the sensible breeder of poultry to balance his ration according to the season.

If canker gets into your flock, you will have plenty to do to prevent it from spreading. Canker is easily discovered and is readily distinguished from other diseases. Whenever you find a bird with a white deposit in its mouth which seems like cheese when detached, that is canker. When the entire mouth is full of it that is a bad case of canker. Take a small, flat stick and remove the canker. Blood will flow. Now apply a solution of white vitriol to the spot and it will soon heal.

The essential difference between a hog and a hen is, that the only value of the hog lies in the flesh, which carnivorous appetites demand for food. With the hen it is different. She will produce day by day an amount of food that shows a greater value than the increase in the weight of the hog. This food, in the shape of eggs, can be consumed right along and the owner still has the original capital (the hen) left. This is a case of having one's cake and eating it, too, a reversal of the old saying.

No sensible excuse has ever been offered for keeping scrub fowls. Pure-bred fowls should be in the yards of every farmer as well as of every up-to-date fancier. It costs no more to feed pure-breds than it does mongrels, and when they are marketed they bring a much better price. It is not yet too late to send off for some eggs from pure-bred stock so as to get a good start for next season.

It is safe to say that the time will never come when the poultry, egg, and feather business will not be a profitable one. The rapid increase in the urban population certainly bodes no evil to this industry. People will eat—in fact, they must eat; and as long as the consuming population increases, just so long will the demand for poultry and poultry-products increase. To supply this increased demand, there must be an increase in the number produced.

The egg-eating hen is an intolerable nuisance. She is a twin sister to the chicken-eating hog. There have been many plans suggested to cure her of this habit, but she is still at it, and perhaps always will be. Her appetite is certainly an abnormal one when it craves the contents of an egg. Sometimes red pepper has been put on the shells of the nest egg, but the experiment has not been a success. One poultryman uses nests that are so small that the hen can not reach down under her body to peck at the egg after she has laid it; and the nest box is so high that she can not reach the egg when she stands on the edge of the box. Nests are sometimes provided that allow the egg to roll down into a darkened place where the hen can not see it and she wonders what she is cackling at. This is one of the most successful methods of preventing this habit.

Poultry Notes.

N. J. SHEPHERD, ELDON, MO.

Many a case of indigestion may be traced to a heavy feed in the morning and the next meal taken from the leavings of breakfast trampled in the dirt by all the fowls. The safest and best rule is to give at each meal only what is readily eaten up clean.

Fowls with a free range at this time of the year need but very little grain. There is so much green stuff, bugs and

POULTRY BREEDERS' DIRECTORY

Eggs From Prize-winning S. C. B. Leghorns that are mated to win. Pen No. 1, $1.50 pen 15; pen No. 2, $1 per 15. Get prices on larger quantities. State number wanted. F. W. Boutwell, Route 8, Topeka, Kans.

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

S. C. BLACK MINORCAS—The world's greatest laying strain; beautiful in shape, color and comb. Eggs, $1.50 per 15; $5 per 100. Cockerels, $1; hens, $1. Address George Kern, 817 Osage St., Leavenworth, Kans. Circular 5 cents.

PURE BLACK LANGSHANS—Strictly fresh eggs, 26 for $1; $3.50 per 100. Mary McCaul, Elk City, Kans.

A ROCK CUT—After May 10, Barred Plymouth Eggs, 75 cents per 15; $4 per 100. From the best strains in America. Order at once. Mrs. Chas. Osborn, Eureka, Kans.

BUFF ROCK EGGS—For sale at 15 for $1; 45 for $2.25. H. M. Stephens, Munden, Republic County, Kans.

S. C. BROWN LEGHORNS—The champion winter and summer layers. Also Barred Plymouth Rocks and Buff Cochin Bantams. Eggs from either variety, 85c per 15; $1.25 per 30. L. E. Evans, Fort Scott, Kans.

BARRED AND WHITE PLYMOUTH ROCK Eggs, $2 per 15; $5 per 45. Hawkins and Bradley strains, scoring 93½ to 94½. Mr. & Mrs. Chris Bearman, Ottawa, Kans.

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

WHITE WYANDOTTES Exclusively—Pure-bred and good layers. Eggs, $1 for 15. Stock all sold. Mrs. C. E. Williams, Irving, Kans.

H. M. JOHNSON Laying strain R. C. Brown Leghorn. Breeding pens selected with care in extra layers and fine points. Eggs from pens, $1.50 per 15; $3 per 45. Range flock per sitting, 75 cents; $3 per 100. H. M. Johnson, Formosa, Kans.

BLACK LANGSHANS
Eggs from two high-scoring pens. Headed by prize-winners, $1.50 per 15. Good hatch guaranteed.
R. C. MARCH, 1313 W. Sixth, **Topeka, Kans**

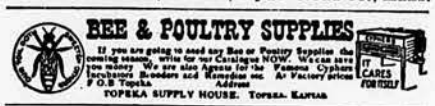
Golden Wyandottes
Winners at Topeka Poultry Show, January 1905, 2, 3 hen, 3 pullet, 2 cock, 2 cockerel. A few birds for sale. Eggs, $2 per 15.
J. D. MOORE, Route 2, Blue Mound, Kans.

SILVER SPANGLED HAMBURGS
Best in Kansas; State records prove it. Eggs at reduced prices for May; best $2, second pen, $1.25. Beautiful birds, good layers, non-sitters. Circular free. Mention Kansas Farmer.
FAY FINKLE, Galva, Kans.

White Wyandottes
EXCLUSIVELY
The strain that's bred to lay. Large birds, farm range. Eggs, $1 per 15; 5c each for 50 or more.
P. E. SALTER, - - Augusta, Kansas

BARRED PLYMOUTH ROCKS
EXCLUSIVELY.
"Superior Winter Laying Strain" noted for size and quality. Sixteen years' careful breeding. Eggs, 15 for $1; 30 for $1.50. E. J. Evans, Box 21, Fort Scott, Kans.

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



Rose Comb Rhode Island Reds and Barred Plymouth Rocks
Have sold all the breeding stock I can spare, but can furnish eggs for hatching at a very low price from a winter strain of layers that have layed all through the zero weather in January and February. First prize winners at Lawrence and Topeka mated. Write for circular and list of matings, telling you how we can produce fertile eggs so low. Italian bees for sale.
H. A. SIBLEY, Lawrence, 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 showroom. 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 fowls; eight pullets averaging 289 eggs each in one year. I have bred them exclusively for twelve years and have them scoring 94 to 96¼, 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.

EGGS AT BARGAINS

Buff Orpingtons.	Partridge Cochins.
Black Langshans.	Light Brahmas.
Barred P. Rocks.	White Wyandottes.
Buff P. Rocks.	Buff Leghorns.
C. I. Games.	R. I. Reds.

All high-class stock of the best strains. For prices on larger or smaller lots write,
T. J. PUGH,
Fullerton, - Neb.

worms to be had for the trouble of hunting for them that only light rations of grain are needed. If much corn is fed, the hens will get too fat to either be healthy or to lay well.

Keep the breed of fowls that you like best and that best fills your requirements. Take care not to inbreed too closely; carefully selecting out the very best for breeding purposes and introducing new blood sufficiently often to maintain vigor.

Salt is a necessity for fowls and when it is supplied them they keep in better condition and lay a larger number of eggs. Of course, an excess of salt is injurious but the soft food is seasoned with it with benefit. A good plan is to mix a small quantity with the food about three times a week.

Sick fowls should never be allowed to remain with the flock. Keep them by themselves in clean, dry quarters where they can be easily attended to. In a majority of cases if the trouble is serious, it will be the cheapest in the end to kill and bury, as the trouble in curing will be more than the fowl is worth.

The hens will always prefer bones when pounded and broken into pieces the size of a grain of corn. Bone-meal, ground bone, or bone that has been bleached, is not always acceptable, but fresh bones pounded will be preferred to anything else and often induce them to lay when many other things fail.

When the flock appears dumpy and seems to lose appetite, it may restore the birds to health by giving linseed-meal in the soft food once a day. A gill of linseed-meal to ten hens is sufficient, but it should not be used as a regular diet. Given twice a week it is excellent. A good way to feed is to mix with wheat bran then scald.

Success depends largely on the time the pullets are hatched. If they come out early, they will have plenty of time to grow and mature, thus being in a condition to commence egg-production on the approach of winter. If a pullet is hatched and does not secure a good start, it will remain useless until nearly a year old. It is the matured pullet that gives the best results.

The Veterinarian

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the Kansas Farmer. Give age, color and sex of animal, stating symptoms accurately, of how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. In order to receive a prompt reply, all letters for this department should give the inquirer's postoffice, should be signed with his full name, and should be addressed to the Veterinary Department, Kansas Farmer, Topeka, Kans., or Dr. C. L. Barnes, Manhattan, Kans.

Fistula.—I have two well-bred mares that have had fistula; both seem to be cured now. One of them has a colt at her side. Is there any reason why I should not breed them? I have been working them for some time.

Eureka, Kans. A SUBSCRIBER.

Answer.—We have sent the bulletins you request. I think it will be all right to breed your mares even though they have had fistula. If we can be of any assistance to you at any time, write us again.

Ivy Poison.—I have a 7-year-old cow that is suffering from ivy poison. The skin on head, neck, brisket, sides of udder and skin of legs next to udder, from body to hocks, is thickened up and lays in folds as though it were too large. At first there was a blistery eruption which oozed out a gummy substance which soon made a scab and a rough coat. The cow moans every few minutes, but still grazes; she is getting stiff in hind parts, however. I have used two applications. When first noticed, I used a tincture of sulfate and lead acetate solution; since then I have used only a strong solution of soda, twice daily. Please prescribe. G. R. W.

Jefferson, Kans.

Answer.—In my experience sweet spirits of niter is the best remedy for ivy poison; you might get some and try it on your cow. I believe it will relieve her wonderfully.

Ailing Cow.—I have a cow that has her tongue so swollen she can hardly eat, and there is also a lump or swelling under her head from her throat to her mouth. She has been in this condition for a month and a half. What can I do for her? B. B. M.

Yates Center, Kans.

Answer.—I would advise poulticing the cow's head, where the swelling is located, changing the poultice as often as it gets cold.

Trouble with Colt.—I have a 3-year-old colt, just broken and worked this spring at ordinary farm work. When she steps with hind feet the pastern-bone or coronary -bone (I don't know which) seems to slip ahead a little, and when she throws her weight on her feet it slips back again into place. It doesn't seem to bother or pain her in the least. I also have a 13-year-old horse which is the same way and has worked and pulled anywhere I wanted him, with apparently no bother to him. E. M.

Windom, Kans.

Answer.—If your horses seem to go along all right, would advise you to leave well enough alone.

Sweeneyed Mule.—I have a mule that is sweeneyed in one shoulder; has been that way but a short time. I am working the mule now, and it does not seem to hurt him. I do not know how it happened, for I was careful not to overwork the animal. I want to know if there is anything I can do that will positively make the muscles fill out to their proper place?

Clay Center, Kans. SUBSCRIBER.

Answer.—You had better quit working your mule for a while and treat the shoulder; use a fly blister on the part that is wasted away. Rub the blister thoroughly into the skin after clipping the hair away. Leave blister on twenty-four hours, then wash off with warm water and grease. Tie the mule short enough so he can not bite his shoulder while the blister is acting. Better repeat the blister in about three weeks. If this does not help him after two or three applications, write again and we will prescribe other treatment.

Sprain.—I would like to know what is a good remedy for a sprain; a big heavy mare has a sprained pastern-joint. It happened last September, and she has been lame ever since. The joint is big, and has something like wind-puffs; they are soft. M. F. C.

Wakefield, Kans.

Answer.—We have sent bulletins of our department as per your request. If your horse has tenderness in the pastern-joint, would advise using the following liniment: 1 pint compound soap liniment; 2 ounces of fluid extract of belladonna; 2 ounces of fluid extract of poke-root; and 2 ounces of spirits of camphor. Rub on affected joint three times daily, after bathing the joint with hot water

Wart on Mule's Eye.—My coming 2-year-old mule has a wart on upper corner of left eyelid; is growing down over the eye. I noticed it first about a month ago; it is nearly one inch long now. Please give safe home treatment. Would it be safe to use caustic?

Stockholm, Kans. R. W. S.

Answer.—I would not advise you to use caustic on the wart which you say is located on the upper eyelid, as some

When writing advertisers please mention this paper.

of the caustic might get into the eye and do considerable damage. It would be much safer to cut the wart off and then heal up the wound with any of the common disinfectants that you have at hand.

Lumps on Cow's Udder.—My 4-year-old cow has lumps, containing matter, in front and a little to the side of the udder; they grow about three weeks and get about as large as a man's fist before they open. After they are gone, others come in the same place. She had a nice calf a year and a half ago, which was not very well at time of birth, and the cow got so poor that she could not raise the calf. She lost a calf four weeks ago, before time. She has had these lumps about a year and a half. She runs in pasture in summer, and corn-stalks in the winter. Has had no treatment.

Hill City, Kans. A. B.

Answer.—You had better open the abscesses on your cow's udder before they have a chance to break and then heal up with a disinfectant. Then if your cow could be fed a tonic for her blood, she would, in time, cease having these abscesses form. Give her the following: Tincture of ginger, 4 ounces; tincture of gentian, 4 ounces; fluid extract of nux, 2 ounces; tincture of iron, 2 ounces; give teaspoonful of this medicine in a pint of water, as a drench, twice daily.

Lump on Mule's Shoulder.—I have a 4-year-old mule that I broke to work this spring. There is a lump raised on the left shoulder about half as large as my fist. It is not raw and is not sore. I put red oil liniment on it, which took the hair off, but did no good. The hair has grown out again. Please tell me what will take the lump off.

Conroy, Okla. G. H. W.

Answer.—If the lump is hard, you may need to dissect it out in order to get it completely removed. If soft, simply open the enlargement and let the fluid escape, then heal up the wound with some disinfectant.

Warts on Colt.—I have a yearling colt that has small warts all over one side of her mouth; some of them are as large as a pea. What can I do for them? Or will they go away of their own accord? A. H. L.

Dodge City, Kans.

Answer.—A very successful way to remove the warts is to smear castor oil all over the warts once daily, until they are all gone.

Closed Teat.—I have a cow which had trouble last year calving, and failed to give milk out of two front teats for some time after; I succeeded in getting milk to flow from one all right by persistent greasing, bathing, and milking, but could not with the other; now she is fresh again and the same trouble prevails. The one quarter seems to be full of milk and the teat stands out full but when pressed or squeezed the milk seems to go up. There is no fever that I can detect. Do you think it could be remedied by the use of a teat siphon? and where could I obtain one? Do you think the duct could be successfully opened with a knitting-needle?

Richland, Kans. E. W. G.

Answer.—From the description you give of your cow's teats I should judge that they are completely closed. You might try the needle you speak of; after this operation use a milking-tube to draw the milk. You can get a milking-tube from Haussman & Dunn, Chicago. C. L. BARNES.

Planting for Profit.

The practical farmer knows that a scientific cultivation of the soil produces results that the haphazard way of doing things never did. He has learned that Nature does not discourage his help, but rather that she rewards the diligent worker who mixes method with his work, and that she will repay him well for the assistance he renders her.

You must not expect good results from your seeding, if you never improve and enrich your soil. And you need not anticipate a bounteous harvest, if you do not plant your seed in the best way.

The seeding is important then and this demonstrates the fact that a great deal depends upon the sort of tools that are used to plant the seed. So it is essential that farmers do not experiment with tools that haven't proven their worth. The "Peoria" Drills and Seeders have been sowing wheat and making "bumper" crops possible for thousands of farmers throughout the great West and Southwest for the past twenty years. They are reliable tools on which the farmer can depend. Write to the Peoria Drill and Seeder Co., Peoria, Ill., for a free catalogue of their complete line.

WEEKLY WEATHER CROP BULLETIN

Weekly weather crop bulletin for the Kansas Weather Service, for the week ending May 16, 1905, prepared by T. B. Jennings, Station Director.

GENERAL CONDITIONS.

Good rains have fallen over the greater portion of the State, but in the southwestern and extreme western counties the precipitation was light; it was also light in some of the southeastern counties. Hailstorms occurred in Ness, Russell, Jewell, Ellsworth, Saline, McPherson, Reno, Shawnee, Jefferson, Anderson, and Crawford Counties. The temperature has been nearly normal though the night of the 11-12 was quite cool.

RESULTS.

EASTERN DIVISION.

Early wheat is beginning to head in the Kaw River counties, it is all headed in the southern counties, where late wheat is now heading. Corn-planting is finished in the southern counties and nearly finished in the northern; much replanting has been necessary in a few counties. Corn is up in the southern counties and coming up in the northern; it is being cultivated as far north as the Kaw River. Oats have improved in the northeastern counties; the crop is doing well now except in Geary and Wyandotte Counties, where it is believed the recent rains will effect a material improvement. Early potatoes are growing rapidly in the northern counties, blooming in the central counties and are being marketed in the extreme southern. Alfalfa-cutting has begun in the southern counties. Apples promise a good crop except in Wyandotte. Grapes are now quite promising. Grass has made a good growth this week and pastures are very good. Flax is doing well in Coffey. Strawberries are a good crop in the south but blackberries are not so promising.

Allen County.—Beneficial rains; crops of all kinds doing well; large amount of corn cultivated.

Anderson.—Good rains; wheat, oats and grasses doing well; corn being cultivated but much replanting is in progress and has been done.

Atchison.—Crops doing well although slightly damaged by recent high winds.

Bourbon.—Wheat, oats and corn in good condition; good prospect for all grain.

Brown.—Crops improved by recent rains and warm weather; corn in good condition but making slow growth: some replanting but not general; pastures good; fruit promises well.

Chase.—Early corn coming up; wheat and all other grains doing well; alfalfa doing well; indications of fair fruit crop.

Chautauqua.—Wheat heading well and in good condition; corn doing well; garden truck doing well and potatoes being marketed; grass growing well; forage crops being planted; cattle in good condition.

Cherokee.—All crops doing well and farmwork has progressed rapidly; good crop of strawberries; apples promise well; blackberries a failure.

Coffey.—Crops doing well although rains have delayed cultivation and the weather has been a little too cool for corn; oats, flax and grass doing well; weeds and crab-grass growing fast.

Crawford.—High winds unfavorable to growth of crops; some fields of wheat in south portion of county damaged by hail, and corn and gardens also suffered injury; wheat is heading generally and doing well; oats making good growth; corn growing slowly and not showing good stand; grass doing well.

Doniphan.—Wheat improved by rains; large amount of corn planted; oats improving; grass and pastures doing well.

Elk.—Rains beneficial to crops; alfalfa ready to cut.

Franklin.—Much corn replanted on account of failure to germinate; otherwise, crops look well.

Geary.—Wheat, alfalfa and pastures benefited by recent rains; oats making slow growth and very short for season; corn doing well although there are some complaints of poor stand; potatoes growing fast where cultivated.

Greenwood.—Rain much needed; wheat jointing; potatoes blooming; alfalfa haying in progress; fruit prospects not so good.

Jefferson.—Good growing week, with beneficial rains; damage by hail to fruit, especially to strawberries; not much injury, however, to grain crops.

Johnson.—Recent rain has been beneficial to all crops and prospect is much improved; wheat beginning to head; early potatoes in bloom; grapes in bloom; corn being cultivated.

Linn.—Beneficial rains for all crops; pastures and meadows benefited.

Lyon.—All crops growing well.

Marshall.—Growing crops doing well except in the northern portion of the county where weather was unfavorable; almost all corn planted and early planted corn will be cultivated next week; shows good stand.

Montgomery.—Late wheat heading; corn cultivation in progress.

Morris.—Cool and dry; corn-planting completed and early corn being cultivated; wheat and rye heading; oats, barley and spelts doing well; all grapes in good condition.

Osage.—Wheat, oats, and grass doing well; early planted corn up and shows good stand; planting about completed.

Pottawatomie.—Cool week and all crops need rain; high winds.

Shawnee.—Corn-planting nearly completed and corn that is up generally has good stand and healthy color; some replanting done and some undre cultivation; wheat, rye and oats growing well; alfalfa will soon be cut; fruit-trees and grapes promising; pastures and meadows very good; cattle doing well; wheat rather short in western portion of county.

Wilson.—Good weather for farmwork; corn cultivation progressing well.

Wyandotte.—Wheat beginning to head; corn coming up and shows good stand; too dry for good growth of oats; some complaints of poor stand of potatoes; poor prspect for fruit crop.

MIDDLE DIVISION.

Wheat is heading in the southern counties; it has been damaged some by high winds in Barton, Ellsworth, and Cloud Counties, and retarded by dry weather in Kingman, otherwise the crop is doing well. Corn-planting is nearly finished and the corn is coming up. It is being cultivated in the southern counties. Oats are doing well in Harper, Sedgwick, and Clay Counties, but not so well in Cowley, Reno, Ottawa and Washington. Grass is in better condition in the northern counties than in the southern. Pastures are good. Alfalfa-cutting has begun in the southern counties and the first crop is nearly ready to cut in the northern. Potatoes are doing well, and in Cowley County are being marketed. Apples are promising. Strawberries are ripe in the southern counties and are a full crop. Hail caused some damage in the central counties.

Barber.—Weather conditions favorable to all crops; wheat and barley looking well; grass and alfalfa growing rapidly.

Barton.—High winds injurious to wheat; corn coming up well; alfalfa nearly ready to cut; cattle in pasture and doing well.

Butler.—Good prospects for all crops; corn looking well although necessary to replant some; peaches and grapes not doing well; full crop of strawberries; good prospect for apples; alfalfa doing well but backward; first crop of alfalfa being cut.

Clay.—Corn-planting nearly finished; much of late planting up and shows very good stand; alfalfa-cutting will commence next week; wheat and oats doing well; grapes in bloom; garden truck abundant.

Cloud.—Wheat damaged to some extent by high winds; corn-planting progressing slowly; alfalfa growing well.

Cowley.—Early sown soft wheat made, so far as moisture is concerned; wheat and oats need rain; oats not doing well; alfalfa crop being cut; new potatoes and peas in market; large crop of strawberries.

Dickinson.—Good week for growing crops although corn cultivation has been at a standstill; pastures doing well.

Ellsworth.—Severe hailstorms in portions of county; much wheat damaged.

Jewell.—Alfalfa and all small grain doing well; corn nearly all planted and first planting coming up; gardens damaged slightly by hailstorm.

Kingman.—Wheat somewhat retarded by drouth, but beginning to head out; grass growing well; fruit blown off by high winds.

Lincoln.—Crops doing well; corn nearly all planted; stock all in pasture and doing well.

Ottawa.—Wheat improved by rains; crops are generally in fair condition, although listed corn has been damaged by washing and oats are weedy in spots; grass doing well; alfalfa in fine condition; corn coming up and shows good stand; good prospect for apples; grapes and raspberries doing well.

Phillips.—Wheat and alfalfa making good growth; corn nearly all planted; good stand.

Reno.—Rain needed in southern half of county; wheat in fair condition; some fields are poor; oats in poor condition; corn doing fairly well; rye in poor condition and heading short; potatoes continue to look well; slight damage to crops from hail.

Russell.—Wheat looks well in some localities but in others is short and thin and the prospect generally is not good; gardens doing well; corn is nearly all planted and coming up well; pastures good.

Saline.—Stormy week with high winds and hail but no serious damage; all crops doing well.

Sedgwick.—Prospects for wheat oats and corn good; wheat will be heading in a week or ten days; good prospect for apples; peaches mostly killed.

Stafford.—All growing crops doing well.

Sumner.—Early wheat heading; some good fields of wheat but many are in poor condition; oats show good stand but growing slowly; alfalfa good; corn under cultivation; all crops growing slowly and turning yellow on account of lack of rain; grass short and stock not doing well; fruit prospect good.

Washington.—All growing crops need rain; corn coming up but does not show very good stand and some is being replanted; wheat and oats backward; alfalfa good; too cold for growth of garden truck.

WESTERN DIVISION.

Wheat generally is in fine condition and giving promise of a good crop. Much corn has been planted in the northern counties and the early planted is coming up. Oats and barley are doing well though they are now needing rain in the southwestern counties. Grass is good and cattle are improving. Potatoes are doing well. Forage crops are being sown. Alfalfa is nearly ready to cut in the northern counties and is being cut in the southern.

Clark.—Small grain needs rain; ground dried by high winds.

Decatur.—Favorable conditions for small grain; large acreage of corn planted and early planting coming up; weather somewhat too cool and wet for corn and there are some complaints of seed rotting; alfalfa almost ready for first cutting.

Finney.—Cool, windy week but crops made good growth; wheat doing well and about to head; first alfalfa crop being cut.

Ford.—Favorable weather for growth of crops during the past week.

Greeley.—Cool and dry, with high winds.

Kearny.—Good weather for growth of crops; pastures good; wheat, oats and barley are doing well but rain would be beneficial to these crops; alfalfa growing slowly; range-grass doing well and stock in good condition.

Lane.—Early corn coming up and showing good stand; some wheat, especially on stubble, beginning to show poor color; barley improving this week.

Ness.—Crop conditions not so good this week; rain would be beneficial to all vegetation; wheat not looking so well as last week; corn coming up but weather too cool for growth; grass in good condition and stock doing well; potatoes up and looking well although injured by frost in southwest portion of the county; gardens in fair condition.

Norton.—Wheat and rye doing well, but will need rain soon; ground dried by wind; corn-planting nearly finished and early planting coming up; gardens late.

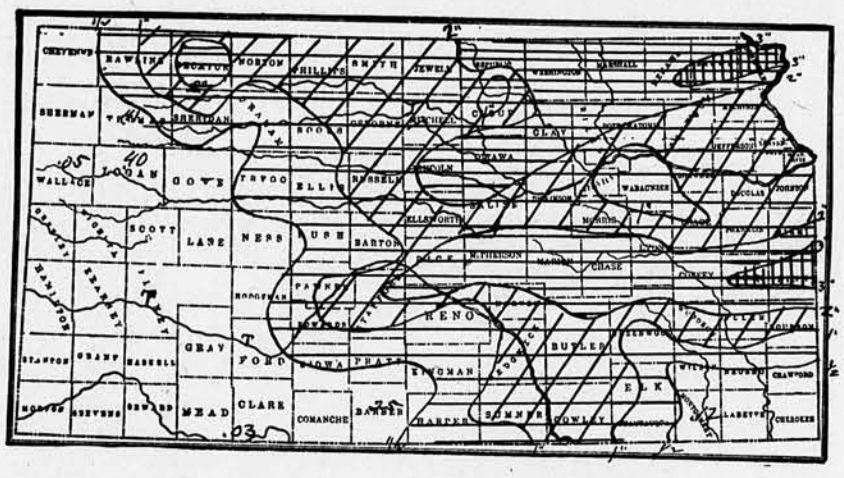
Sheridan.—High wind during first part of week.

Thomas.—Wheat very rank and prospect of large crop; corn-planting in progress; grass doing well.

Trego.—Crops in good condition and uninjured by recent dry weather.

Wallace.—Wheat, barley and oats doing well; good prospect for apples, cherries and plums; range-grass doing well; Kafir-corn, cane and other crops being planted; gardens doing well.

Rainfall for Week Ending May 13, 1905.



The Markets

Kansas City Grain Market.

There was a moderate increase in receipts of wheat, but offerings of milling samples were light. Half the receipts came from Omaha elevators. The demand was limited and trade was slow. Prices were firm for milling wheat and unchanged for off grades. The railroads reported 13 cars of wheat received, compared with 31 cars a week ago and 44 cars a year ago. Sales of car loads by sample on track, Kansas City: Hard wheat—No. 2, 1 car $1.04, 2 cars $1.03, nominally $1.01 @1.05. No. 3 hard, 2 cars $1.02, 3 cars 98c, 1 car 97c, nominally 91c@$1.02. No. 4 hard, 2 cars 93c, 1 car 90c, 1 car 89c, 3 cars 84c, 2 cars 80c, nominally 91@94c. Rejected hard, 1 car 79c, 1 car 77c, 1 car 68c, 1 car 65c. Soft wheat—No. 2 red, nominally $1@1.05. No. 3 red, 1 car 98c, nominally 91c@$1.0. No. 4 red, 1 car 95c, 1 car 93c, 1 car mixed 92c, 1 car 90c, 1 car 84c, 2 cars mixed 84c, 1 car 82c, 1 bulkhead car 82c, 1 bulkhead car 80c, nominally 79@95c. Rejected red, nominally 65@80c.

At about ½c lower prices corn was in fair demand. Receipts were moderately larger than a week ago. The market closed firm with the early declines recovered. The railroads reported 20 cars of corn received, compared with 34 cars a week ago and 38 cars a year ago. Sales of car lots by sample on track, Kansas City: Mixed corn—No. 2, 6 cars yellow 49c, 1 car 48¾c, 3 cars yellow 48½c, 1 car 48½c, 9 cars 48c, 2 cars 47¾c, 4 cars 47½c; No. 3, 1 car 48c, 1 car 47¾c; No. 4, 1 car 47c. White corn—No. 2, 1 car 49c, 2 cars 48¾c, 1 car 48½c; No. 3, nominally 48c.

Oats sold fairly well at unchanged prices. Receipts were moderate. The railroads reported 7 cars of oats received, compared with 10 cars a week ago and 1 car a year ago. Sales of car lots by sample on track, Kansas City: Mixed oats—No. 2, 3 cars color 31½c, nominally 31@31½c; No. 3, nominally 30½c. White oats—No. 2, 1 car 32½c, 2 cars 32c; No. 3, 1 car 31½c.

Rye—No. , 1 car poor 53c.

Corn-chop—Nominally 93c, in 100-lb sacks.

Timothy—Nominally $2.70 per 100 lbs.

Flaxseed—Nominally $1.15.

Bran—1 bulkhead car 73c.

Shorts—1 bulkhead car 78c.

Millet—German, $1.40@1.50; common, $1.25@1.35 per 100 lbs.

Red clover and alfalfa—$9@11.50 per 100 lbs.

Cane-seed—2 cars $1.10.

Kafir-corn—Nominally 75@78c per 100 lbs.

Kansas City Live-Stock Market.

Kansas City, Mo., Monday, May 15, 1905.

Things were not satisfactory to shippers of cattle last week, and closing prices for the week were 15@25c below the beginning of the week, covering pretty much all classes of cattle. Veal calves lost 50@75c. The main cause of the decline was too big a supply of beef steers. The buying side of the market was in better shape than during the previous week, but their needs were not urgent, and the large supply of beef gave them the whip-hand. Much of the supply last week was on contract, and lack of confidence in the future also brought in a good many fat cattle. The general quality was very high during the week.

The local supply of cattle to-day is 7,000 head, market slow and somewhat lower. Chicago has a big run and lower prices, and Eastern orders were filled there advantageously to-day, removing some support from the market here. Lighter receipts are expected later this week, but there seems to be no prospect of any better prices than those now ruling. Top cattle last week averaged a dollar higher than in May last year. The extreme top was $6.30, and quite a number of cattle sold above $6, bulk of fat steers $5@5.90, good to choice heifers $4@5.35, good cows $3.50@4.75, veals $4.50@5.50, bulls $2.60@4.60. Trade in stockers and feeders was light, prices for desirable stuff $3.50@4.75, a few sales above this.

Hog prices were up and down last week, altogether influenced by the volume of receipts. Fluctuations were violent, ten cent changes being the rule, but the net result of the week's business was only a loss of 7 cents. Market is 5@10c lower to-day, account of liberal marketing, top $5.30, bulk of sales $5.15@5.27½. There are indications of the usual summer shifting of prices, medium weights nearing the top, and heavies settling down towards second place.

The mutton market closed the week in very good shape, 15@25c above the opening. Practically no fed sheep or yearlings appeared, outside of a few clipped ewes; lamb supply nearly wholly wooled fed Westerns, which sold at $6.60@6.90. Texans made up most of the sheep supply, were of extra good quality, and sold at $4.10@4.85. The run is light this morning, market 5@15c higher. A few feeding Texans have sold lately at $3.25@3.75.

J. A. RICKART.

South St. Joseph Live-Stock Market.

South St. Joseph, May 15, 1905.

The aggregate receipts of cattle at the five markets to-day was close to 40,000 head, or four thousand more than was received at the same points a week ago. The demand was not sufficient to absorb the increased marketing except at a lower range of prices and all points showed more or less of a decline. The local receipts ran mostly to fair to good beef ern dressed beef steers were steady to 10c lower than the close of last Friday. Strictly good to choice export and Eastern dressed beef steers were ready to weak while the good light butcher steers and medium shipping and dressed-beef kinds were right around 10c lower. The trade in cows and heifers was steady in spots but most kinds were weak to 10c lower, and this was especially true regarding the light-weight heifer stuff. Fat export bulls showed no particular change but common to fair bulls and stags were weak to a shade lower. A very strong demand prevailed for the right kind of young stock cattle but fresh arrivals included only a nominal number. Regular dealers had good orders in hand and also reported a fair country inquiry, but they were unable to get enough to supply their wants, and as a consequence the few on sale sold a little stronger generally. There is some inquiry for thin feeders of good quality, but there is apparently no demand for the fleshy kinds as packers invariably pay more for such offerings than the country can afford. Young stock cows, heifers, and stock bulls were only in fair request and prices ruled about steady.

The hog market has received a severe setback on account of increased marketing; receipts last week were especially heavy and prices broke sharply and today supplies were pretty well centered in Chicago, which caused another sharp decline. The trade here was quite active but generally 5c lower, prices ranging from $5.15@5.30 with the bulk selling at $5.17½@5.25. This indicates a 15@25c decline from the high point of last week. We are still of the opinion that anything like heavy marketing will force values still lower, whereas moderate receipts will allow values to react. Quality of hogs continues very good, which indicates a good many yet in the country, and should these come forward freely during the balance of the month, prices would no doubt hover around the 5c mark. Local receipts have hardly been up to the requirements of the packers and on this account values are ruling strong to 5c higher here than at nearby competitive points.

The supply of sheep and lambs was not very large to-day and the local demand was stimulated by some outside orders which forced the market up 10@20c; good to choice Colorado lambs selling at $7.15@7.30, shorn lambs at $6@6.30. Arizona grass lambs sold up to $4.90, which was 10c higher than the last week. Last week the spread between wooled and shorn lambs was from $1@1.50 but this gap has been materially closed and the spread does not exceed $1 now and in some cases not so much. The demand is very strong for all offerings and many more could be sold to the advantage of the shipper.

WARRICK.

Special Want Column

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

CATTLE.

FOR SALE—Registered Hereford bulls, good ones, low prices, by H. B. Clark, Geneseo, Kans.

WANTED—A registered Holstein bull, must be good size and a good breeder. Prefer a 2- or 3-year-old. E. P. Riggle, Eureka, Kans.

FOR SALE—Seventeen registered Angus bulls, 10 to 20 months old; also a number of cows and heifers at reasonable prices. Will sell my herd bull. Address A. L. Wynkoop, Bendena, Kans.

FOR SALE—10 Registered Galloway bulls, cheap. J. A. Darrow, Route 3, Miltonvale, Kans.

FOR SALE—Red Polled bulls, half-brother to World's Fair winner. D. F. Van Buskirk, Blue Mound, Kans.

FOR SALE—Shorthorns—One herd bull, Greenwood 165865 and 3 young bulls, all Scotch-topped. Brookover Bros., Eureka, Kans.

FOR SALE—A registered Red Polled bull, 30 months old, weight 1500 pounds, in good condition, will guarantee him a breeder; price, $100. For pedigree or other information address W. E. Brockelsly, 815 E. Hancock, Lawrence, Kans.

FOUR GOOD HEREFORD BULLS, 15 to 20 months old, at reduced prices if taken at once; also a few younger ones. A. Johnson, Clearwater, Kans.

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

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

FOR SALE—A 3-year old Shorthorn bull, sired by Royal Bates. Address Dr. N. J. Taylor, Berryton, Kans.

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.

SEEDS WANTED—There are many inquiries for seeds adapted to various parts of Kansas; Black Hulled White Kafir-corn, different varieties of oats, corn suited to localities, etc., are in demand. Those who have such for sale may make profits for themselves and confer benefits on others by advertising in this column.

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. C. M. Garver, Abilene, Kans.

WANTED—Cane, Kafir-corn, millet, alfalfa, clover, English blue-grass and other seeds. If any to offer send samples and write us. Missouri Seed Co., Kansas City, Mo.

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 PIGS—Both sexes. Oom Paul (23 times sweepstakes) strain and other good lines of breeding. Selects, no culls for sale. Hillcrest Farm, Greenwood, Mo.

WANTED—To sell for cash or trade for a tried bred sow, my Poland-China herd boar, Kid Klever 33079. Also one fancy yearling boar; sell or trade. Write for price, description and reasons for selling. Here are two snaps. F. H. Barrington, Spring Creek, Chautauqua Co., Kans.

TWENTY-FIVE last fall Duroc-Jersey boars. Chock full of the top-notcher blood. They are a fine lot; also 40 sows bred or open. A. L. Burton, Route 1, Wichita, 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.

MISCELLANEOUS.

WANTED—Men and teams to break prairie. Will rent the land or sell it on easy payments. Address, W. W. Cook, Russell, Kans.

FREE—Eighty page catalogue; everything for the home and farm. Send 2 cent stamp. Home Manufacturing Company, Taylor St., Chicago, Ill.

WANTED—By married man, no family; thorough practical farmer and stockman, situation as manager or will take a well stocked farm and share profits on basis of half. References furnished and required. Address C. A., Box 13, Lindsborg, Kans.

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

HONEY—New Crop, water white, 8 cents per pound. Special prices on quantity. A. S. Parson, Rocky Ford, Colo.

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

POULTRY.

EGGS FOR HATCHING from Rose Comb Rhode Island Reds at greatly reduced prices after June 1; high-scoring pen, $1.50 per 15; No. 1 pen, $1 per 15; No. 2 pen, $5 per 100. Leon Carter, Asherville, Kans.

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

Neosho Poultry Yards

Rose Comb R. I. Red and Buff Orpington eggs the balance of the season $1 per sitting. Birds score 91¼ to 94½. J. W. Swartz, Americus, Kans.

FARMS AND RANCHES.

FOR SALE—Farm; 360 acres; 160 cultivation, balance fine timber; new 6-room house, cribs, granary, sheds, barn and outbuildings; 3 wells, living water, orchard, on public road, 100 miles from St. Louis. Also 557-acre farm, improvements poor, about 200 acres under plow, finest stock farm in state, 3 miles from live railway town. For particulars call or address J. B. Dunkerley, 4745 Hammett Place, St. Louis, Mo.

SOME FINE BARGAINS—480 acres, 60 acres alfalfa, 90 acres bluegrass 250 acres under plow; fine improvements; a great bargain; price, $20 per acre. 80 acres, good land, all smooth; moderate improvements; good bargain; price $2100. 320 acres, all closed in, 90 acres bottom; good improvements; 10 acres timber; running water; cheap at $6200. 120 acres, small improvements, 70 acres under plow; reasonable; price $2000. Garrison & Studebaker, Florence, Kans.; office at Minneapolis, Kans., also.

DO YOU WANT to buy a farm ranch, city property, or buy, sell or exchange a stock of merchandise, or want a bargain in some of my wheat farms, write me. F. C. Purdy, Sterling, Kans.

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 devided. Price, $15 per acre. Call on or address the owner, Box 192, Wakeeney, 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.

TWO SNAPS—160 acres cheap; improvements, valley land, 140 acres cultivated; price $3,200. Small payment down, balance yearly payments. 160 acres, 12-room house, 30 by 40 barn, 85 acres cultivated; price, $4,500; half down, balance terms. Garrison & Studebaker, Minneapolis, Kans. We also have offices at Florence and Salina. Try us.

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 966, Wichita, Kans.

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 South during 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 $500 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.

FARMS AND RANCHES.

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.

BARGAINS in Central and Western Kansas land. J. J Hazlett, Sterling, Kans.

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

VIRGINIA FARMS

AS LOW AS $5 PER ACRE WITH IMPROVEMENTS. Much land now being worked paid a profit greater than purchase price the first year. Long Summers, mild Winters. Best shipping facilities to great eastern markets at lowest rates. Best church, school and social advantages. For list of farms, rates, and what others have done write to-day to F. H. LABAUME, Agr and Ind. Agt., Norfolk and Western Ry., Box 66 Roanoke, Va.

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.

AGENTS WANTED.

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

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

LEGAL.

Publication Notice.

No. 23254.

The State of Kansas to Sarah A. Vance and A. H. Vance, A. S. Davies, Henry F. Meyer, and E. W. Davies,

Greeting: You, and each of you, are hereby notified that you have been sued in the District Court of Shawnee County, Kansas, in an action therein pending, in which Cynthia H. Hawkins, Clyde E. Hawkins, Frank B. Hawkins, and Jessie B. H. Darragh, are plaintiffs, and you and each of you are defendants, and that unless you answer the plaintiffs' petition on or before the 26th day of June, 1905, the plaintiffs' petition will be taken as true, and judgment will be rendered against you and each of you, quieting the title of the said plaintiffs in and to the following described real estate, situated in the County of Shawnee and State of Kansas, to wit:

Lots numbered one (1), three (3), five (5), and seven (7), on Highland Avenue, in Seabrook's Subdivision of lots numbered three (3), and four (4), of Section numbered three (3), Township numbered twelve (12), south of Range numbered fifteen (15), east of the Sixth Principal Meridian, and perpetually enjoining you and each of you from ever asserting any right, title, interest or estate in and to said premises, and excluding you from all interest therein.

FRANK H. FOSTER,
Attorney for Plaintiff.

Attest:
(Seal) I. S. Curtis,
Clerk District Court, Shawnee Co., Kans.

PUBLICATION NOTICE.

To Charles Woodcock:—You are hereby notified that on the 4th day of April, 1905, an order of attachment was issued by M. F. Laycock, the clerk of the Court of Topeka, in and for Shawnee County, State of Kansas, in an action pending in said court in which E. G. Kinley is plaintiff, and you are defendant, against you, for the sum of $28.94, and that said cause will be heard by said court on the 25th day of May, 1905, at 8 o'clock a. m.

FRANK H. FOSTER, Attorney for Plaintiff.

PROPOSALS FOR LEASING CERTAIN of the tribal lands of the Kiowa, Comanche, and Apache Indians for agricultural purposes. Department of the Interior, Office of Indian Affairs, Washington, D. C., May 6, 1905. Sealed proposals will be received at the Office of the U. S. Indian Agent, Kiowa Agency, Anadarko, Oklahoma, until 2 o'clock p. m., on Wednesday, June 7, 1905, and will immediately thereafter be opened in the presence of such bidders as may attend, for leasing for farming purposes subdivisions "E", "F", "G", and "I", of Reserve Pasture No. 1, that portion of Reserve Pasture No. 2 lying east of the Oklahoma City & Western Railroad, and all of Reserve Pasture No. 4. Said lands will be leased in tracts not exceeding one quarter-section, or fraction thereof, where the quarter is fractional, for the term of 3½ years from July 1, 1905. No bid for a different period or different amount will be considered; and no person, firm, company or corporation will be permitted to lease more than 640 acres. Posters giving fuller information and the conditions to be observed in the submission of bids may be obtained by addressing the U. S. Indian Agent. The bids must be addressed to the U. S. Indian Agent, Kiowa Agency, Anadarko, Oklahoma, and must be plainly marked on the outside of the envelope, "Proposals for leasing Kiowa lands for agricultural purposes." Bids not conforming to the requirements of the printed poster may be rejected if such action shall be deemed necessary in the interest of the Indians. Any further information desired may be obtained from the U. S. Indian Agent Anadarko, Oklahoma. C. F. LARRABEE, Acting Commissioner.

FULL DESCRIPTION OF THE INDIAN LEASE LANDS

to be opened up to settlers this summer, can be had together with the **Weekly Democrat, One Year for $1.00.** The Democrat is published at the home of the leasing agent Col. Randlett. Indian agent at Anadarko, Okla., the gateway to the great Kiowa, Comanche and Apache Indian Reservations. Reference: Col. J. F. Randlett, Anadarko, Okla. If you want a home send $1.00 to the Democrat, Anadarko, Okla.

Stray List

Week Ending May 11.

Morris County—H. A. Clyborne, Clerk.

HORSE—Taken up by A. H. Chelson, in Elm Creek tp. (P. O. Wilsey), April 14, 1905, one brown mare, 5 feet 2½ inches high, scar on right hind leg, branded on left jaw with J upside down, with bar underneath.

Stafford County—W. W. Hall, Clerk.

STEER—Taken up by C. S. Curtis, in Rose Valley tp., Nov. 12, 1904, one 2-year-old red steer, mark or cut in right ear.

DUROC-JERSEY SWINE.

D. M. TROTT ABILENE, KAS., famous Duroc-Jerseys, Poland-Chinas.

COUNTY SEAT HERD DUROC-JERSEY SWINE.
Geo. Briggs & Son, - - - Clay Center, Neb.
Young stock for sale.

DUROC-JERSEYS—Large-boned and long-bodied kind. A fine lot of fall pigs (either sex) for sale. Prices regsonable.
E. S. COWEE, R. F. D. 2, Scranton, Kans.

MAPLE AVENUE HERD
Duroc-Jerseys J. U. HOWE, Wichita, Kansas
Farm two miles west of city on Maple Avenue

DUROCS Spring pigs, sired by five leading males, either sex or pairs after weaning. Bred sows for fall litters. John Schowalter, Cook, Nebr

FAIRVIEW HERD DUROC-JERSEYS
Now numbers 150; all head for our two sales, October 25, 1904, and January 31, 1905.
J. B. DAVIS, Fairview, Brown Co., Kans.

THE OLD RELIABLE KLONDYKE HERD.
Duroc-Jersey Swine, Shorthorn Cattle and B. P. Rocks. FOR SALE—Two September 27, 1904 males. Eggs 75 cents per 15; or $4 per 100.
Newton Bros., Whiting, Kansas.

GOLDEN RULE STOCK FARM
LEON CARTER MGR., Asherville, Kans.
Gilt-edged Duroc-Jersey Swine.

The Famous Fancy Herd
DUROC JERSEY SWINE
A few gilts and 7 fine young boars for sale. Breed sow sale at Concordia, Feb. 21, 1905.
JNO. W. JONES & CO., R. F. D. 3, Delphos, Kan.

FOR SALE
75 head of pedigreed Duroc-Jersey spring pigs, boars or sows, no akin, good color, well built, very cheap, order now from
CHAS. DORR, Route 6, Osage City, Kans

ORCHARD HILL HERD
OF DUROC-JERSEYS
Gilts all sold. A few excellent males left yet.
R. F. NORTON, - Clay Center, Kans.

DUROC-JERSEY HOGS.
All stock registered. Pigs for sale weighing 150 to 200 pounds, both sexes. Will have sows for early farrowing at $20 each. Spring males and gilts, $10 to $15. Address
Mr. & Mrs. Henry Shrader, Waunets, Kans

PLAINVILLE HERD
DUROC-JERSEYS
For sale, an extra fine lot of young boars large enough for service. Bronze turkeys, Barred Plymouth Rocks and Brown Leghorn chickens for sale.
J. M. YOUNG, Plainville, Kans.

DUROC-JERSEYS
A few Gold Dust gilts of the big-boned, hardy variety and out of large litters bred for April farrow.
BUCHANAN STOCK FARM, Sedalia, Mo.

Wheatland Farm Herd Duroc-Jerseys
For Sale—At reasonable prices, some fine October pigs, male and female; also some tried sows, bred and open. Our yearling herd boar, Wheatland Daudy 23905, sire Nathan 6397, dam Lincoln Lass 32792, will also be sold.
GEO. G. WILEY & SON, South Haven, Kans.

MINNEOLA HERD
DUROC-JERSEY SWINE
Prince 17799 and Red Rover 27665 at head of herd. Young boars and bred and open gilts for sale.
L. A. KEELER, Route 7,
Phone 891 G, Ottawa, Kans.

Rose Lawn Herd Duroc-Jerseys
Now offering males only. Bred sows and gilts reserved for Feb. 22, 1905 sale. Visitors welcome and prices right. Can ship on Santa Fe, Mo. Pacific and Rock Island railroads.
L. L. Vreeman, Hope, Dickinson Co., Kans.

POLAND-CHINA SWINE.

Kansas Herd of Poland-Chinas. W. R. C. Leghorn eggs. F. P. Maguire, Hutchinson, Kans.

FOR SALE Poland-China Hogs, Holstein-Friesian Cattle; either sex. Best strains represented. H. N. HOLDEMAN, Rural Route No. 2, GIRARD, KANSAS.

Elm Grove Stock Farm Poland-Chinas.
Herd headed by Nonparell 86105A, Sweepstakes boar at Missouri Sate Fair, 1904. Can spare a few choice sows bred for May and June farrow.
F. A. DAWLEY, Waldo, Kans.

DIRGO BREEDING FARM
J. R. Roberts, Proprietor, Deer Creek, Okla.
Breeder of Poland-Chinas of the leading strains. Stock of all kinds for sale at all times. Satisfaction guaranteed. Write us and we will tell you what we have.

Republic County Herd
Big-boned, Fancy-bred Poland-Chinas
Fancy breeding, great individuality. Inspection invited. Choice boars and gilts of September farrow for sale. Two sired by a 750-pound boar—a prize-winner. Their dam, Waunetta Ann 171850, she by Expansion. Three sired by Keep Coming 84889, he by Keep On. Also R. C. B. Leghorn eggs from choice matings. Write for description and prices.
O. B. SMITH & SON, Cuba, Kans.

HIGHLAND FARM HERD OF PEDIGREED
POLAND-CHINAS
Twenty serviceable boars at special prices for next 30 days, sired by Black Perfection 37122, Slick Perfection 32604, Perfection Now 32580, and Ideal Perfection. They are lengthy and good-boned pigs, with plenty of finish. Write me description of what you want and I will guarantee satisfaction.
JOHN BOLLIN, Route 5, Leavenworth, Kan

POLAND-CHINA SWINE.

MAPLE VALLEY STOCK FARM
Pure-bred Poland-Chinas from leading strains. Visitors welcome and correspondence solicited. Satisfaction guaranteed. C. P. Brown, R. 2, Whiting, Ks

POLAND-CHINAS
For Sale—June gilts, sired by Corwin's Model. This stock is first-class. Weight from 150 to 200 pounds. Prices quoted on application.
Dave Stratton, Route 1, Walton, Kans.

Pecan Herd of Poland-Chinas
Model Tecumseh 64133, American Royal (8) 80783, and Best Perfection 81507 at head of herd. Write us your wants.
J. N. Woods & Son, Route 1, Ottawa, Kans.

Main's Herd of Poland-Chinas
Empire Chief 30379, heading champion herd and winner in class at Iowa and Nebraska State Fairs. He is of great size and finish. Sire Chief Tecumseh 3d and out of Columbia 2d. The combination that produced so many State fair champions. A grand lot of sows bred to him; and summer boars for sale at reduced rates. Try me for quality and prices.
JAMES MAINS, Oskaloosa, Jefferson Co., Kan.

ROME PARK POLAND-CHINAS and BERKSHIRES.
I have about twenty boars ready for use and twenty-five sows bred, and some unbread, and a large number of good pigs, both breeds.
T. A. HUBBARD, (County Treasurer Office.)
Wellington, Kans.

GUS AARON'S
POLAND-CHINAS
Route 5, Leavenworth, Kans.
Choice young boars of April and May farrow sired by Beauty's Extention, for sale. Also bred sows and gilts, all with good colors, bone, fancy head and ears. The head boar, Beauty's Extention 27966, for sale. Some snaps here. Visitors welcome. Mention Kansas Farmer and write for prices.

CLEAR-CREEK HERD OF
POLAND-CHINAS
For Sale, at bargain prices, from now till January 1, 1905, four boars ready for service, sired by Sherman's Corrector, a half brother to Corrector 2d, the reserve champion at the St. Loui Expo ition, and out of up-to-date bred sows. Also a bunch of boars equally as well bred, sired by six good herd boars, and out of matured sows.
E. P. SHERMAN,
Wilder, - - Kansas

CHESTER WHITE SWINE.

D. L. BUTTON,
Elmont, Shawnee Co., Kan.
Breeder of Improved Chester-White swine. Young stock for sale.

Sedgewick County Herd
O. I. C. SWINE
Bred gilts and spring pigs for sale.
E. Forward & Son, - Clearwater, Kans.

O. I. C. SWINE
Have for sale a few choice boars of serviceable age; booking orders now for spring pigs. Write for prices. Satisfaction guaranteed.
S. W. ARTZ, - LARNED, KANSAS

High Point Stock Farm
I have choice O. I. C. and Duroc-Jersey males. Also bred O. I. C. and Duroc-Jersey gilts for sale. B. P. Rock cockerels and eggs in season. Write or come and see
J. R. EBERT,
Route 3, Hunnewell, Kans.

O. I. C. HOGS

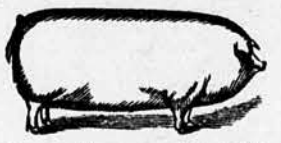
A. G. McQUIDDY,
501 East South Fourth Street, Newton, Kans
Handles the great George Washington breed from the famous Silver Herd of Cleveland, Ohio. For particulars and prices write to the above address.

O. I. C. HOGS.
300 Beauties, all ages.
We take the lead, others follow. We were the first western Breeders to take up the O. I. C.'s, consequently have advanced our herd to a place above all others. We have spared neither time nor money in perfecting this this breed, Write your wants and we will be pleased to give you information.

Scotch Collie Dogs.
No Pups for Sale.
Brandane Noble, Cragsmore Wonder, Laddie McGregor, at stud. Write for terms. We assure you we can please you. We are selling more Collies than any firm in America. We guarantee satisfaction.
WALNUT GROVE FARM, Emporia, Ks.
H. D. NUTTING, Proprietor.

CHESTER WHITE SWINE.

O. I. C. SWINE
Six Miles from Kansas City



Take the Argentine car at Stock Yards and get off at 8th and Strong Avenue, where you can get Free Livery to our farm. If you cannot inspect our herd write us. We wish to impress you with the fact that we have
15 Head, both sexes, August and Oc. Farrow
Strong and growthy.
Also have a number of spring pigs ready to ship.
ALVEY BROS., Argentine, Kans.

BERKSHIRE SWINE.

CEDAR LAWN BERKSHIRES
My sows are sired by Elma's Prince 64778, and Berryton Duke 72946. Boar at head of herd, Jurists Topper 76277. Wm. McADAM, Netawaka, Kan

BERKSHIRES
From the best breeding that can be had, for sale at all times. Male and female, bred and open. Prices and breeding that will suit you.
J. P. SANDS & SONS, Walton, Kans.

Ridgeview Berkshires
Boars of July and August, '04, farrow for sale, sired by Forest King 72668. Orders booked for spring pigs.
MANWARING BROS.,
Route 1, Lawrence, Kans.

WHITE HOUSE HERD
BERKSHIRES.
GEO. W. EVANS, Prop. MERRIAM, KANS.
W. S. ROWE, Manager Rural Route.
Herd consists of Cherry Blossom, Royal Majestic, Artful Belle, Longfellow, Riverside Lee and Silvertip strains. Choice young stock for sale. Visitors always welcome.

SUTTON'S BERKSHIRES
Imported Blood
30 extra choice Boars, 100 to 150 pounds.
40 extra choice Gilts, 100 to 150 pouds.
Fancy heads, strong bone and all-around good ones. Bargains at $15 to $25 to close quick.
CHAS. E SUTTON, Russell, Kans.

BERKSHIRES
I have purchased the great S. B. Wright herd, of California—are of the best in America, and the best sows and boars I could find in Canada, and have some fine young boars by several different herd boars. Can furnish fresh blood of high quality.
Eight pure Collie pups, cheap.
E. D. KING, Burlington, Kans.

KNOLLWOOD
BERKSHIRES
Pacific Duke 56691, the 1,000 pound champion show and breeding boar from herd of S. B. Wright, Santa Rosa, Cal., bred by N. H. Gentry; Model Princess 60134, by Halle 60125, sweepstakes Pan-American sow; Stumpy Lady 63409 by Combination 56028, sweepstakes Kansas City and Chicago 1902. Lee's Model Princess 62514, the $180 daughter of Governor Lee 47971; Lady Lee 99th 65035, the $160 daughter of Lord Premier 50001, and other "Blue-Bloods." Sows bred to 3 grand boars and young stock for sale.
E. W. MELVILLE, Eudora, Kans

TAMWORTH SWINE.

TAMWORTHS
Ready for sale, consisting of 50 fall and spring gilts, that can be bred to any one of the three different herd boars, Mark Hanna, Red Stack Jolly, and a fine herd boar from Illinois. Also 40 young boars for sale for spring farrow.
C. W. FREELOVE,
Clyde, Kansas.

SHEEP.

ELMONT HERD
SHROPSHIRE SHEEP.
Herd headed by Huntsman 155655 and Marshall 176211. Choice young bucks ready for service, for sale, also extra good spring ram lambs. All registered
JOHN D. MARSHALL,
Walton, - Kansas.

SHORTHORN CATTLE.

Plainville Shorthorn Herd
Headed by Prince Lucifer 188685
A pure Scotch bull.
Stock for sale at all times.
N. F. Shaw, Plainville, Rooks Co., Kans

ROCKY HILL HERD
SHORTHORN CATTLE.
J. F. True & Son, Perry, Kans.

D. P. NORTON'S SHORTHORNS.
Dunlap, Morris County, Kansas.
Breeder of Pure-bred Shorthorn Cattle.
Herd bull, Imported British Lion 133692. Bull and heifer calves at $50.

Meadow Brook Shorthorns
Ten fine young bulls for sale—all red. Red Laird, by Laird of Linwood, at head of herd.
F. C. KINGSLEY,
Dover, Shawnee County, Kansas.

MAPLE GROVE SHORTHORN HERD
BANKER No. 129324
CRUICKSHANK HERD BULL.
Sissy 849 of Vol. 40, Rose of Sharon blood, Norwood Barrington Duchess 654 Vol. 50, Bates blood. Pure-bred unregistered bulls for sale.
OSCAR DUEHN, Clements, Kans.

Silver Creek Shorthorns
The imported Missie bull, Aylesbury Duke 159763 and the Cruickshank bull, Lord Thistle 129960, in service. A few bred yearling heifers by Imp. Aylesbury Duke are now offered for sale. These heifers are in calf to my Cruickshank bull, Lord Thistle.
J. F. STODDER,
BURDEN, COWLEY COUNTY, KANS.

GLENWOOD HERDS
Shorthorns and Poland-Chinas
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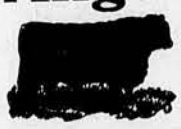
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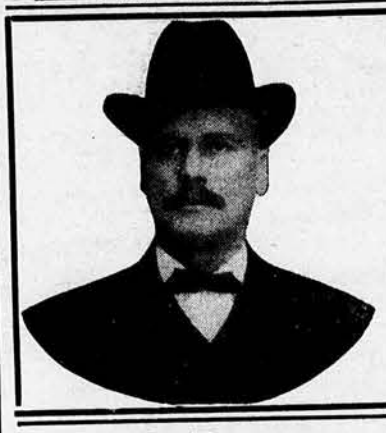

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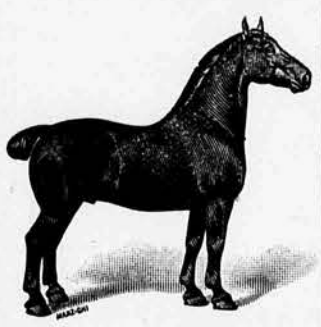

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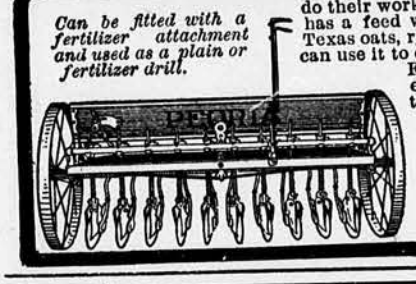

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