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KANSAS FARMER.

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A terrific wind storm at Goliad, Texas, last Sunday killed ninety-eight persons and destroyed much property.

The crop and weather reports of Observer Jennings are read with great interest. They are unprejudiced and as accurate as a capable and conscientious man cooperating with a careful lot of observers throughout the State can make them.

Prof. P. J. Parrott of the New York Agricultural Experiment Station is another of the many young Kansans of whom this State has been robbed by the larger inducements offered by other States for the Kansas brand of ability. Professor Parrott already gives account of himself in his new position by some important investigations of San Jose scale. The value of his services to the State of New York will correspond to the length of his term and the facilities afforded him.

THE SCARCITY OF MEAT.

The trust question is occupying a good deal of public attention just now. It may occupy more in the future. The trust is outlawed by act of Congress. The old Common Law of England is quite as rigorous as the modern statute.

In popular estimation the trust is not very well defined. It may be a combination of independent producers, tradesmen, or carriers to control prices they pay and prices they receive, and incidentally to limit the output; or it may be any very large corporation, which, because of the magnitude of its capital,

the extent of its operations, and the ability of its executives, makes competition unprofitable.

Against the first described the common law and the statute are both applicable. Against the second it is doubtful if there is a legal remedy. Should statutes be enacted against the second the courts would probably hold them invalid.

Just at present the meat packers are before the public and are to be brought before the courts as a trust of the first class. Whether they are guilty of the offenses charged is a matter for proof in the courts. Whether they have unduly raised the prices of meat is the question which most interests the complaining public. The question as to whether the packers have conspired to depress the prices of animals on the hoof has almost disappeared since it was long ago found that no country killer could afford to pay the prices which the packers pay for butcher stock. But recent advances in prices of dressed meats raised such complaints and such a cry against the "trust" that public officials were compelled to act.

These advances are not surprises to the growers of the stock who have generally realized the increasing shortage of the supply as compared with the demand, and have, therefore, compelled the packers to pay better prices on the hoof. The shortage of store cattle or "feeders" has made it impossible to meet the demands of the market for this class of animals at former figures. But above all, the shortage of last year's forage and corn crops, and the consequent high prices, made it necessary that the producer of meat on the hoof should have high prices or lose money.

The question that most concerns the public, next to that of ability to pay the prices demanded, is whether the prices demanded by the trade are higher than warranted by the cost of production. It is pretty generally agreed that the retailer is suffering with the consumer. The farmer is not accused of unlawful combination—such accusation would be an absurdity. But the consumer is hurt. It must be, therefore, that the packers are at fault, is the rather loose assumption.

Such is a synopsis of about the usual train of reasoning, when, indeed, reasoning is indulged at all. The public, led by the sensational daily papers, fully expects that the packers will be convicted of extortion. It is probably safe to say that the farmer whose finished product is the packers' raw material, though expressing no opinion as to the charges of conspiracy, is generally of the opinion that, if the difference was formerly not too great between the price he received and that charged by the packer, it is not too great now. His query is as to why the charges were not preferred before the shortage of the cattle supply and the shortage of the corn crop produced a scarcity which made higher prices necessary.

The agitation is making great reductions in the consumption of meats. Possibly these reductions may equalize the demand to the supply so as to cause a temporary reduction of prices.

There is another aspect of the case

which has received little attention in the public prints. The generation now most potent in directing contemporary thought has been wont to congratulate itself upon the wealth of America's unoccupied but fertile lands. This generation has seen brought under settlement a belt of these lands some 1,400 miles long—ranging from the British Possessions to the Gulf of Mexico—by some 600 miles long—extending from about the eastern line of Illinois to the arid lands of the West, besides numerous and extensive areas beyond this belt. The productiveness of these new lands caused a glut of the world's markets, depressing prices to figures which threatened bankruptcy to farmers on older lands. This extension of agricultural areas can never be repeated for lack of any such extent of new, arable lands. The short crops of last year and the decline in the supplies of meats have, together, given the world a sample of prices of food-stuffs of the future. These prices will not rule uninterruptedly high. They may be subject to even greater fluctuations than in the past. But, on the average, the producer of food supplies may expect larger returns for the products of his soil and labor, which larger returns consumers will have to pay. The legal actions brought against the packers are incidents in the chafing of consumers at the new conditions.

It is a notable fact that, thus far, in America, we have come within view of but two shortages in the gifts of nature. The first of these is the timber supply, the second the meat supply. All resources except those of the soil are apparently limitless. Shall it be that those who produce from the soil shall henceforth occupy a more advantageous position than heretofore? Can any legal process take away the farmers' approaching preeminence?

BLOCKS OF TWO.

The regular subscription price for the KANSAS FARMER is one dollar a year. That it is worth the money is attested by the fact that thousands have for many years been paying the price and found it profitable. But the publishers have determined to make it possible to secure the paper at half price. While the subscription price will remain at one dollar a year, every old subscriber is authorized to send his own renewal for one year and one new subscription for one year with 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.

The Nebraska Experiment Station has experimented with 400 varieties of grass and forage crops to determine which were best adapted to the soil and climatic conditions of the State. Alfalfa and brome-grass have been most satisfactory and were the only varieties not injured by the drouth of 1901. Most of the failures in these crops were due to a lack of knowledge of proper preparation of the soil and of the necessities of plant growth. Professor Lyon, of the station advises experimental seeding

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on ranges of alfalfa and brome-grass because of their great adaptability to prevailing conditions.

Traffic Manager, Don A. Sweet, estimates that it will take at least 5,000 cars to handle the cattle shipments over the Pecos Valley lines this spring. Superintendent Garwood has already crowded every sidetrack between Amarillo and Pecos with empty cars, in order to meet the demand for transportation now on file. Of the shipments originating on this road, 5,000 head go to Manitoba, Canada, while the bulk of the remainder go to summer pastures in Wyoming, Nebraska, and the Dakotas.—Carlsbad Argus.

The Kansas City Live Stock Exchange has petitioned the Secretary of the Interior to rescind his order compelling the removal of fences from the public lands of the West, on the ground that the land is arid and unfit for anything but grazing. The petition states that the "order, if enforced, will work a great hardship and cause a great loss to the cattle-raisers it will affect."

Agricultural Matters.

Spontaneous Combustion of Alfalfa.
ADVANCE SHEET OF BULLETIN NO. 110,
FROM FARM DEPARTMENT,
KANSAS EXPERIMENT
STATION.

There were many instances during the summer of 1901 of alfalfa hay becoming so hot that it took fire by spontaneous combustion and was destroyed. Six examples will give an idea of the conditions under which spontaneous combustion took place.

O. L. Hull, Manhattan, Kans., cut a hundred acres of alfalfa, beginning the cutting May 19, when the first bloom appeared. The alfalfa was on river-bottom land and had made a heavy growth. The cut alfalfa was left in the swath about three days, when it was put in windrows with a side delivery rake. It was left for about three days on an average in the windrows, when it was gathered by a hay-loader and stacked. The alfalfa was so heavy that the tops of the windrows got too dry and the leaves shattered considerably while the bottoms of the windrows were too green to be in good condition for stacking. The entire first cutting from the hundred acres was put in one stack and estimated to be 150 tons. The stack settled more than usual and became very hot, but was not thought to be so hot as to be in danger. July 9, fourteen loads of alfalfa hay from the second cutting from the same field were placed on the stack to fill out where it had settled. This made 164 tons of hay in the stack. At 1 a. m., July 10, fifty-two days after the first cutting was made, a neighbor noticed a small fire on the stack that appeared like a locomotive headlight. An alarm was immediately given, but in a few minutes the entire outside of the stack was in flames and all the 164 tons were burned.

Emmett McDonald, Manhattan, Kans., made his first cutting of alfalfa the last week in May. The growth of alfalfa was rank and it was cut when the first blooms appeared. Cutting began Friday, the cut alfalfa was raked into windrows Saturday with a side delivery rake, where it stayed until Tuesday, when stacking began. The hay was taken from the windrows with a hay-loader and twenty-five to thirty tons put in a stack. The hay was so dry that the leaves shattered off considerably, and at the time of stacking it was considered that the stems were also well cured. Early in July it was noticed that the hay was quite hot, and the stacks were examined frequently. Mr. McDonald reports that the alfalfa took "spells" of being hot. It would be quite hot for about a week, then cooler for a few days, and then hot again. On the morning of July 25 one stack was so hot that it was thought unsafe to

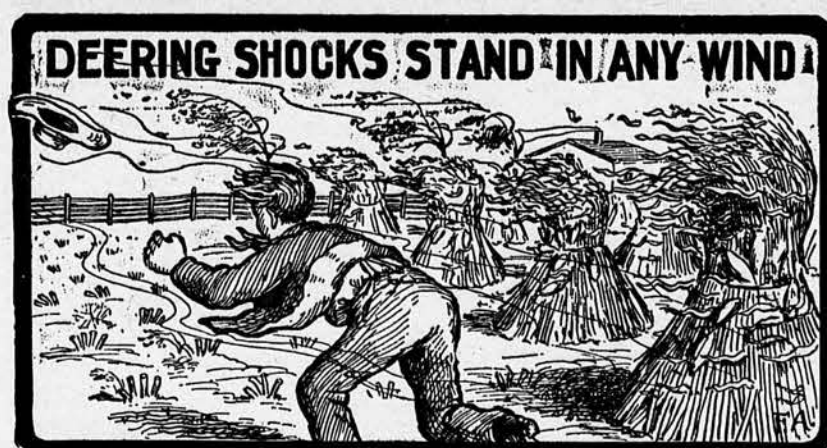
leave it longer, as other stacks stood near it, and work was started to tear the stack down and take it away. After a few feet were taken from the top of the stack the hay was found to be dry and charred and so hot that water hissed when thrown on it. The stems held their shape, but were apparently thoroughly charred. The exposed hay was too hot to handle, and it was well wet down and left to see what would follow. In about three hours a blaze broke out of the side of the stack, about four feet from the ground, and the stack was consumed. Another stack from the same cutting did not burn, but the interior of the stack was found to be well charred.

J. L. McCormick, Zeandale, Kans., had alfalfa hay on rich bottom-land. It made a rank growth and was cut late in May, when the first blooms appeared. It laid in the swath about one and a half days, when it was put in windrows with a side delivery rake. After curing in the windrow one to two days the alfalfa was gathered on wagons with a hay-loader and placed in the stack with a stacker. The stack was built thirty feet wide, thirty feet high, and of sufficient length to hold 150 tons. Two months and a half after stacking, the fire broke out. The stack settled badly in the middle, and two or three weeks before the fire broke out several loads from the second cutting of alfalfa were placed on the top of the stack to fill out where the settling had taken place. At that time the stack was quite hot and the smell of heating alfalfa was strong, but no danger was anticipated. The hay kept getting hotter, and it was decided to take the stack down and save as much of the hay as possible. One end was taken off safely. After the top of the stack near the middle had been taken off for several feet the hay was so hot that men could no longer stay on the stack. A few minutes afterward smoke burst out at the ground, all along the stack. Men cut two feet into the side of the stack and a blaze started. This was kept smothered with water until fifty tons of the hay had been taken away, when the fire could no longer be controlled, and what hay remained was burned.

George Washington, Manhattan, Kans., had a rank growth of alfalfa. It was cut early in June, when half in bloom, and burned in August. The cut alfalfa laid in the swath from one to one and a half days, when it was gathered in windrows with a side delivery rake. It was allowed to remain in the swath until apparently well cured, when it was stacked, 150 tons being put in a stack. The stack settled badly in the middle and smelled hot for quite awhile before it burned. Two or three days before the fire broke out a boy went on top of the stack where it had settled the most and taking a pole started to force it down through the center of the stack. The pole went through two or three feet of hay and then dropped down, the entire center of the stack apparently being burned out. Fire broke out all along the top of the stack, and no hay was saved.

W. D. Pool, Briggs, Kans., cut alfalfa May 20, when about one-fifth had come in bloom. The alfalfa was on bottom-land and had made a rank growth. It was left in the swath half a day, gathered in windrows with a side delivery rake, left in the windrows two days, loaded on wagons with a hay-loader, and unloaded with a horse fork. Twenty tons were put in the stack. June 25 the second crop was cut and six tons put on top of the stack. Early in July it was noticed that the stack was heating badly. August 2 the stack became so hot that fire burst out, and it was entirely burned. It began to burn about 1 o'clock in the afternoon.

T. W. Andrews, Rossville, Kans., had alfalfa on river-bottom land, where it made a very rank growth. It was cut the latter part of May, just as it was coming in bloom. It was put in windrows with a side delivery rake and left in the swath until considered well cured. It was put on wagons with a hay-loader and taken from the wagons to the mow with a horse fork. Two hundred and fifty tons of alfalfa hay were stacked in a hay-shed, the sides of the shed being boarded down from the roof for a distance of four feet. In the north end of the shed there was one bent filled with the previous year's cutting of alfalfa. The storing of the new crop was begun next to the old hay. July 24 a load of alfalfa was taken out of the south end of the shed. The men had finished loading, but had not yet driven from the shed, when smoke burst out along the line where the new alfalfa hay joined the old. In a few minutes a blaze followed and the shed and all the hay it contained were destroyed. For a week or more before the blaze broke out, the smell of heating alfalfa was strong. Mr. Andrews is



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not certain that the fire was caused by spontaneous combustion, but all the facts in the case indicate that it was.

CONDITIONS FOR SPONTANEOUS COMBUSTION.

All cases of spontaneous combustion of alfalfa hay that have come to our notice have occurred with the first cutting. Early spring growth of alfalfa in an ordinary season is rank. The alfalfa is cut either in May or early June, and at this time of the year the weather is such that it is difficult to thoroughly cure the alfalfa without getting it wet. Usually there is considerable damp weather and little wind after the first cutting is put in the mow or stack, and this hinders further drying. With later cuttings the growth is not so rank and succulent, and the weather is dryer, and there is often wind. This makes curing easy.

At this station we have not had alfalfa heat sufficiently to take fire, but we have had it become so hot that as a matter of safety we took it out of the barn several weeks after putting it in the mow, and stacked it out-of-doors. We have had so much trouble with the first crop heating that for the past four years we have stacked it out-of-doors and put the other cuttings in the barn. We have cured the first cutting as carefully as we knew how, keeping it several days in cocks, putting covers on the cocks at night and opening the cocks during the day-time, and with all these precautions if there came a week or more of wet, "muggy" weather in July or August the alfalfa hay would become hot. If the weather stayed dry no heating took place. The college barn is of stone, and is well ventilated at the roof above the mows. In all cases of spontaneous combustion given in this bulletin the alfalfa was handled as little as possible and was turned but little. This resulted in the leaves becoming dry while the stalks contained considerable moisture. Where weather conditions were favorable this moisture in the stems was sufficient to promote fermentation, and in the cases given the fermentation generated sufficient heat to start a fire. Usually alfalfa will not get hot enough to do this, and the heating causes little damage. It is quite common to find alfalfa hay from the first cutting that is brown or black from heating, and the cattle eat it with relish.

WHEN TO CUT ALFALFA.

Alfalfa should be cut when not more than one-tenth of the plants have come in bloom. Cut at this early stage, the yield of hay for the season will be much greater than if the alfalfa is cut near maturity, and every pound of hay secured will be worth more for feed.

At the Kansas Experiment Station, a strip through a field of alfalfa was cut when one-tenth was in bloom; an-

other strip was cut after full bloom had passed. The strip cut early was nearly ready to cut the second time when that cut after full bloom was being harvested the first time. The strip cut early grew vigorously through the season and made three cuttings and a good aftermath. The strip cut after full bloom gave a low yield the first cutting and did not grow sufficiently to yield a good second cutting. Early cutting invigorates the plant.

The late cutting of the first crop injures the plant more than at any other time, and have found it profitable to cut alfalfa the first time as soon as one-tenth was in bloom, even though the weather was bad and we knew that the crop would spoil in curing. The increased yield from succeeding cuttings over that cut late much more than make up for the loss of the first crop.

HOW TO CURE ALFALFA.

The leaves of the alfalfa contain more than three times as much protein as the stems, a ton of alfalfa leaves containing as much protein as twenty-eight hundred pounds of bran. Protein is the material in feed necessary for the formation of blood, lean meat, and milk. Every effort, then, should be made to cure alfalfa in such a way as to save all the leaves possible. The method of curing will vary with the conditions of the crop, ground, and weather. When alfalfa has made a slow growth, and at the time of cutting the ground and the weather are dry, there is no difficulty in curing. Often under these conditions it is safe to rake within a few hours after mowing, and stack a few hours after the alfalfa has been put in the windrows.

When alfalfa has made a rapid growth and is rank and succulent, and the weather and ground are damp, the problem of curing is a difficult one. It is easy to dry the leaves, but the stems will contain much moisture after the leaves are too dry. Alfalfa hay should become so dry before stacking that when a handful of stems are tightly twisted together no water can be squeezed out. The most practical way to accomplish this and at the same time save the leaves is the plan to adopt, and this will vary with different seasons and places.

There is practically no difficulty in curing any but the first crop. When the conditions for curing the first crop are unfavorable, we have usually found the most practicable method to be to cut the alfalfa in the morning after the dew is off, allow it to barely wilt in the swath, then rake, and before night put in narrow tall cocks. After the dew is off the next morning and the surface of the ground has become dry we open these cocks carefully so as not to shatter off the leaves. If the weather is favorable, the hay may be stacked in the afternoon. If not, we

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recock carefully and repeat treatment until the hay is properly cured.

Some alfalfa growers, in stacking the first cutting of alfalfa, put alfalfa and dry straw or prairie hay in alternate layers. This is a satisfactory way if the dry material is available. Other alfalfa-growers use ten to fifteen pounds of salt or air-slacked lime for each ton of hay, sprinkling the salt or lime so as to cover as much of each load as possible. Experiments made at this station indicate that considerably less gains are made by cattle when salt is mixed with the feed. A trial of lime on alfalfa made at this station showed little effect.

From all the experience that we have gained to date, we advise that the best way to prevent spontaneous combustion of alfalfa is to thoroughly cure before stacking. It is not often that all the conditions necessary to produce spontaneous combustion are present, and ordinarily there is no danger where reasonable care is taken, except with the first cutting, and with this cutting only when the growth is rank.

Alfalfa Experiences in Nebraska.

PRESS BULLETIN.

During the winter of 1902 a list of between 600 and 700 successful alfalfa-raisers in this State was collected, and to each was sent a report blank calling for a definite statement regarding a number of the processes he employed in obtaining his stand of alfalfa, and also regarding his subsequent care of the crop. More than five hundred satisfactory replies were received, representing eighty counties in the State. A study of this large number of reports from successful alfalfa-raisers gives some valuable information respecting alfalfa culture.

There were 288 stands reported upon upland, and 273 upon bottom-land. Even in the western portion of the State the amount of alfalfa on the upland is shown to be considerable, and very satisfactory results are evidently obtained, although naturally the yields of hay are smaller than on the bottom-lands of that region. In the eastern part of the State somewhat heavier yields appear to be obtained from bottom-land, but loss from winter-killing or other cause is greater. Twenty-three reports state that upland is more satisfactory than bottom-land. These come principally from the eastern portion of the State or from the irrigated land of the western portion.

An astonishing feature of the replies is the large amount of alfalfa that they show to be growing on the land with a clay subsoil. Sandy clay, clay loam, clay and lime, etc., were not counted as clay. In spite of this limitation, 245 clay or gumbo subsoils are reported. A clay or even a gumbo subsoil does not appear to be a barrier to successful alfalfa culture.

The seed-bed was prepared by plowing and further working in 373 cases, and by disking or cultivating in 75. Among the latter is one method that appears to be popular and satisfactory. This consists in thoroughly disking corn-land after all trash has been removed from the field. In the western part of the State there are a number of good stands of alfalfa obtained by breaking prairie sod, disking it, and harrowing in the seed; also by disking the unbroken sod, and harrowing in the seed. The latter commends itself as an easy way of supplementing the native grasses in pastures. The tendency to dispense with plowing on unirrigated land increases with the distance westward from the Missouri.

A study of the dates of sowing alfalfa-seed in the spring shows a range from early March to late June, although where advice was volunteered it was practically unanimous in favor of early sowing. There were only eight reports of summer or fall sowing, of which one was sown in July, four in August, and three in September.

In 108 cases a nurse crop was used, while in 393 cases the alfalfa-seed was sown without that of any other crop. The use of the nurse crop was largely confined to extreme eastern Nebraska and the irrigated land of the West. Many persons who used a nurse crop say that they would not do so again. It has been recommended to use a light seeding of small grain, sown earlier or with the alfalfa, to prevent damage by severe winds. When sown in this way the nurse crop is mown when eight or ten inches high, to prevent it smothering the alfalfa.

In 55 cases the seed was put in with a drill, and in 447 cases it was sown broadcast. This is at least an indication that if a drill is not available a satisfactory stand can be obtained by broadcasting and harrowing in, providing the other conditions are favorable.

There were 138 reports of less than

twenty pounds of seed per acre being used, and 336 reports of twenty pounds or more being sown. The evidence seems to be in favor of the use of at least twenty pounds of seed per acre.

Of the persons replying to the inquiries, 221 have stands of alfalfa that yield more than four tons of cured hay per acre each season, while 157 do not get as much as four tons of hay per acre.

Of persons having practiced disking alfalfa in the spring or at other times, 138 report that beneficial results have been obtained, while seven report that disking has been ineffective or injurious. By disking alfalfa is meant going over it in the spring with a disk harrow before growth starts, or during summer immediately after cutting for hay. It is customary to set the disks at a slight angle. This cuts the crown root and stirs the soil. Some of the correspondents prefer harrowing to disking. Where positive objection was made to disking, it was based on the claim that it caused the crowns to become diseased. The great bulk of the evidence was, however, in favor of disking.

Of the persons who have manured alfalfa, either by plowing in the manure immediately before seeding or by spreading it on the field after a stand had been obtained, 110 obtained beneficial results, and 13 found it to be ineffective or injurious. Objections are based on the claim that plowing in manure causes the soil to dry out, but objections to spreading manure on alfalfa are rather indefinite in their nature, except that on low land it makes the growth too rank, and the alfalfa falls down. Many of those who advocate its use specify that the manure should be rotted and fine. One man suggests harrowing after spreading, to fine it. The reports of beneficial results from plowing under manure come largely from the eastern portion of the State, but the use of fine manure applied as a top dressing has proven beneficial in all parts.

Growth of Agricultural Colleges.

Even the present generation can recall the time when the various agricultural colleges throughout the country were regarded by the larger portion of the farmers of their respective States as institutions whose greatest virtues were in securing appropriations. So far as a direct benefit to the farmer was concerned, the college was regarded, putting the matter mildly, as entirely superfluous. The instructors were impractical theorists, and the students were regarded as young men whose succeeding efforts were more suitable to furnish material for jokes and cartoons than for practical work. A few years ago the average agricultural college was willing to take students with moderate qualifications in order to get them at all, but during the last ten years this has been changed until comparatively recently many colleges, and all the leading ones, have had difficulty to supply accommodations. Twenty years ago students were a matter of dozens; now their places are being filled by hundreds, and the present seems to forebode that the time will come when thousands will receive regular instruction in our leading agricultural colleges.

As a matter of fact, the classic colleges and universities are being overcrowded. Many are being turned out every year to fill overcrowded professions that seem unable to remunerate them for barely more than they expended in current expenses while securing their education. The average farmer is becoming aware of the influence of the agricultural colleges, but is not open to the full importance of its need or growth to meet the new conditions that are constantly being made upon the college. The agricultural colleges demand the active support of the farmers of their respective States, because the colleges, to grow, need it. Agriculture in general and in particular demands it, and the young farmers of the country are growing to appreciate the fact that among the influential farmers of the future the college men are bound to play a leading part.

The experiment station is more or less dependent on the future of the agricultural colleges, since its work is carried on to a considerable degree in connection with the colleges of agriculture, and coming station forces must be recruited quite entirely from the graduates of the colleges. The stations have been of great influence on agriculture, more than many are able to appreciate, and we doubt if it will be fully appreciated until in succeeding years farming interests are able to look back and note the various steps of progress.

In the eastern section of this country the experiment stations are called on to solve the problems of successful agri-

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culture on lands which have been materially exhausted of their virgin fertility.

The farmers of the country do not, as a rule, appreciate the fact that the work of the experiment stations cost them very little in direct taxation, and in most States nothing at all, since the stations are supported, to a very great extent, directly by the federal Government.

The same is true to a very great extent with the land grant colleges, which are asking little more of the taxpayers of the State than appropriations for needed improvements to accommodate its growing conditions.—Drovers' Telegram.

About Cow-peas.

EDITOR KANSAS FARMER:—In your issue of May 8 Mr. B. F. Low asks for experience of KANSAS FARMER readers in growing cow-peas. I will give my methods or experience in growing them. A great deal depends in the variety planted. I plant only the Large White Black Eye and the Whipoorwill varieties, either one of which will vine considerably or not at all, depending on the time of planting, season, and soil. If planted as late as July they will grow very bushy and erect but will mature a better crop of seed and it will be much handier to gather. If planted in rows with a corn-planter at this time of the year on good soil they will make vines five or six feet long from the main stem. I am at present planting them with a press drill at the rate of one-half bushel to the acre, also mixing equal parts of Kafir-corn and cow-peas and sowing about one bushel to the acre. I expect to make two crops of hay from this planting.

I have ten acres of rye that I shall cut for hogs as soon as it is in the dough and then disk the land. I shall also disk about twenty acres of oats stubble and shall plant them both to cow-peas, sowing some of it, but drilling the most of it with a corn-planter. We always cultivate them, when drilled, with a single-shovel corn-cultivator.

You can also make one of the best crops of feed by disking and planting in a field well set with crab-grass. Harrow the field down smooth and let the crab-grass and cow-peas grow together. Mow and make hay. When sown with Kafir-corn I expect them to grow slender and stand up with the corn so that they will work nicely with the mower. When drilled with the planter I cut with a sulky plow or regular two-row bean-harvester. With the present prospect for chinch-bugs the man who has a few acres of cow-peas will find that he is "strictly in it," as the bugs will not touch them. J. T. SMITH.

Independence, Kans.

Suggests Otis for Professor of Agriculture.

EDITOR KANSAS FARMER:—I notice that Professor Cottrell has resigned his position as professor of agriculture, much to the regret of his many friends all over the State, and the friends of the college as well. The farmers of Kansas will lose a friend, and the college an efficient officer. But while we deplore the loss of Professor Cottrell, let us all labor to have the man appointed who will most nearly fill Cottrell's place both in the college chair and in the minds of his friends. The names of Cottrell and Otis are so indissolubly linked together in the minds of the farmers and dairymen of Kansas that if they must lose Cottrell then they will say, give us Otis in his place.

I know some one will say that Otis

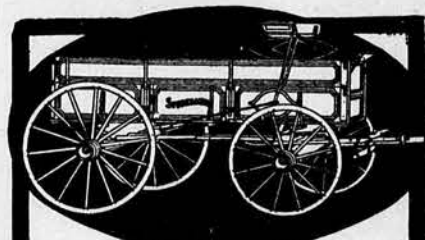
has a position. That is true but his assistant, Ed. H. Webster, is abundantly able to take care of that office, and by the way, it is none too good for him, either. I know that I voice the sentiments of four-fifths of the farmers and dairymen of eastern Kansas when I raise the standard of D. H. Otis for professor of agriculture. G. W. PRIEST.
Meriden, Kans.

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Use of Dried Blood and Other Packing-house Products in Feeding.

Many inquiries have been raised as to the utility of dried blood, bone-meal, etc., as feed, and as medicine for animals. Properly used they are undoubtedly valuable. The Armour Packing Company has published a booklet which contains much that is timely along these lines. Following are excerpts from this booklet:

In feeding farm animals the problem confronting each farmer is what feed stuffs to buy to supplement those raised on the farm, which will give the greatest feeding value and the most economical returns for the money spent. On the decision of this problem hangs the question of profit or loss to the farmer; of a paying business, or one running behind year after year. For it is entirely possible to practically throw away one's money in buying feed-stuffs to go with the crops grown on the farm; that is, by buying feeds that do not supply other food materials than those already present in abundance in our farm crops. To see how this is true, it will be necessary to give a primer talk on the composition of farm foods, and we will do this briefly and plainly so that "he that runs may read."

WHY WE FEED.

We feed our farm animals to produce milk, meat, wool, or eggs, as the case may be. In order to produce these articles, the animals must be well fed; at the same time as they are giving milk, or laying on flesh, etc., they have to breathe, digest their food, and exercise more or less; even if they are kept quiet in the stable there are internal motions of heart, lungs, intestines, and other organs to be kept up. The animals depend on their food to supply the materials required for the continued exercise of these different functions. We find, however, that farm foods differ greatly in their contents of the various nutritive elements which they supply, and are therefore of different value in feeding farm animals. We may here consider feeding stuffs made up of four kinds of materials, viz: Water; mineral substances (bone-building); heat-producing materials (starch, sugar, fat, or oils); flesh-forming materials (protein, nitrogenous nutrients). The water in feed-stuffs is of no importance in this connection, as it does not contribute directly to the sustenance of the animals, and only affects the palatability of the food. The other components given are absolutely essential for the feeding of farm animals, as well as of all other animals and of man. No animal can grow or even live for any length of time without receiving all of them in the food, and if one or two were absent in the food the result would be disastrous to the animal and its owner. Not only that, but if these different classes of food elements are not present in certain fairly definite proportions in the food given, its nutrients will not be properly utilized, and its feeding value therefor correspondingly lowered.

The heat-producing materials are such as starch, sugar, fat, woody fibre, and similar compounds which make up the bulk of the dry matter of all farm-grown foods, both roughage like grass, hay, corn stalks, roots, potatoes; and concentrated foods like the cereals, peas, beans, etc. Through their combustion the heat-producing substances supply and keep up the animal heat of the body, and they have another equally important office in animal nutrition, viz., to furnish energy for the work, internal or external, to be done by the animal. They are also spoken of as carbohydrates, and foods rich in these materials are called starchy foods.

The flesh-forming substances are found in the greatest quantities in purchased concentrated foods, like refuse products from the oil and flour mills, packing-houses, breweries, glucose factories, etc. Generally speaking, the most costly and most valuable cattle-foods are those containing the largest proportions of flesh-forming substances, or protein. Of these, the packing-house feeds, tankage, and dried blood deserve special consideration for the reason that they furnish these substances in a more concentrated and easily digestible form, at a comparatively lower

cost than any other group of concentrated feeds on the market.

The flesh-forming substances go to make muscle in the animal body, and to repair the wastes of the tissues; since milk, meat, eggs, and wool contain typical albuminoids, or flesh-forming substances, which can not be elaborated except through a supply of these materials in the food, it follows that this group of nutrients is of equal importance in feeding all kinds of farm animals, whether they are fed for growth or for the production of special food articles. The heat-producing substances can no more do the work that the protein bodies have to do than the mineral substances contained in the ash of the foods can do it. Under normal systems of feeding the different nutrients have their specific offices to fill, so far as we can tell this with any degree of certainty. Broadly speaking, the offices of the different food components are as follows: ash materials or mineral matter, for building up the bone structure of the animal; carbohydrates or nitrogenous substances, to supply heat and energy for work; and protein or flesh-forming materials, to make muscle and furnish the material required for the production of animal products like milk, eggs, wool, etc.

Foods grown on the farm are generally low in flesh-forming materials and rich in starch and allied heat-producing substances. For this reason the farmer is after protein foods primarily when he buys feeds to supplement those raised on the farm. He generally has an abundance on hand of hay or corn stalks, corn, oats, etc.; what he needs is a food or foods like tankage, dried blood, or other nitrogenous feed stuffs which will supply his animals with the muscle-forming nutrients required. The following short table will show in what proportions the different food components are found in our more important cattle-foods:

COMPONENTS OF ONE HUNDRED POUNDS OF DIFFERENT FEEDING STUFFS, IN POUNDS.*

	Mineral Substances.	Protein.	Starch, Sugar, etc.	Fat.
Tankage.....	15.	46.	3.	14.
Dried blood.....	4.7	87.		2.5
Bone flour.....	55.	25.		5.
Linseed-meal....	5.7	32.9	35.4	7.9
Cottonseed-meal..	7.2	42.4	23.8	12.9
Wheat bran.....	5.6	16.1	53.7	4.2
Gluten feed.....	9	21.6	49.6	12.7
Indian corn.....	1.5	10.5	69.6	5.4
Corn stalks.....	4.2	6.5	36.5	1.7

A study of the figures given in the table will be of interest to the feeder; it will prove to him the wisdom of buying and feeding packing-house feeds where these can be used to advantage for feeding farm animals, rather than the refuse materials from the cereals or other seeds. While the sum total of digestible components in the different feeds does not vary greatly, we see that tankage and dried blood contain from two to five times as much protein as any of the other feeds. The other concentrated feeds given in the table contain more of fat or of starchy materials, but we have seen that these classes of nutrients are abundant in the crops grown on the farm, and there is generally no need of going to cash butlay in order to secure them. More than two-thirds of Indian corn, for instance, is made up of heat-producing materials, but corn is lacking in flesh-forming substances, and corn stalks still more so; only one-sixteenth part of the latter feed is protein, while we find that about seven-sixteenths of these protein bodies make up tankage, and thirteen-sixteenths dried blood.

The prices at which these two packing-house feeds are sold are but slightly higher than those of the better classes of other concentrated food stuffs, showing conclusively that the former are the more economical foods; a ton of tankage will furnish us with twice as much protein, and a ton of dried blood with five times as much protein, as a ton of the other concentrated food stuffs given.

DESCRIPTION OF PACKING-HOUSE FEEDS.

Before we proceed to speak of the use of packing-house feeds in feeding farm animals, it may be well to state briefly what these feeds are, and explain the main features of their manufacture.

Tankage is a combination of scraps of meat of cattle and hogs, lungs, tendons, bones, etc., cooked for five hours in large steel tanks under twenty-five pounds pressure. By this radical treatment the different parts are largely disintegrated, and any disease germs which may have been found in the scraps as they went into the pressure tank would be sure to be destroyed. The tankage

*[These are totals. The digestible components are somewhat less.—Editor KANSAS FARMER.]

is then pressed so as to remove water and fat, after which the feed is dried and ground.

Dried blood is prepared from the blood of cattle or hogs, by boiling at about 212° F., the nitrogenous (flesh-forming) substances of the blood are thereby coagulated. The mass is then put in presses, and the pressed cake is run through steam dryers, then ground and bagged.

Ground-bone meal is manufactured from bones of cattle and hogs, cooked for a few hours so as to remove the fat and a part of the gelatinous tissue, thus facilitating the grinding of the bones; they are then dried and ground in a similar manner as the tankage. Ground-bone meal is particularly valuable for the feeding of farm animals, especially young animals, pigs, and poultry, on account of its high content of phosphates and other important ash materials; the nitrogenous substances which it contains in the form of tendons, cell linings, etc., have about the same food value as so much meat or dried blood.

WHAT THE AUTHORITIES SAY.

Animal feeds have been used for many years as foods for all farm animals, and considerable practical experience as regards their value for this purpose has therefore been obtained. It is interesting to note what the authorities in the science of feeding say about these feeds.

Dr. H. P. Armsby, the director of the Pennsylvania Experiment Station, says in his book, "Manual of Cattle-feeding:" "Flesh-meal being so digestible (protein, 97 per cent digestible), it is easy to see that it must exert an excellent effect, especially when used in small quantities as an addition to a fodder otherwise poor in protein. Flesh-meal is the more valuable, practically for swine, because by means of it the animals can be induced to eat large quantities of other fodder. Moreover, the addition of a nitrogenous by-fodder to a feeding stuff containing much starch contributes essentially to insure the complete digestion of the latter. The use of flesh-meal is not confined to swine, however, it has also been used with good results for milch cows, and for fattening cattle. The animals at first generally refuse to eat the flesh-meal, but when it is fed in small amounts, and gradually increased to two or three pounds per day, they soon become accustomed to it, and come to eat it even greedily."

Professor Settegast makes the following remarks concerning flesh-meal in his standard German work on "Feeds and Feeding": "In feeding flesh-meal it is well to feed it with cut roots or potatoes; all food-stuffs of this class may be largely improved by an addition of flesh-meal. By mixtures of cut straw, chaff, etc., it is possible to prepare feed rations by means of flesh-meal hardly inferior to good meadow hay. No deleterious effects are noticeable on the flavor of the meat or milk produced from feeding flesh-meal."

Dr. E. Pott, a German authority on farm foods, says of tankage: "Well preserved, not too coarse tankage is a concentrated feed of the very first order. All kinds of farm animals relish it when fed moderately, and pigs above all others."

"Dried blood is eaten by most animals without any repulsion. It is a valuable concentrated feeding stuff; fed to lambs as a substitute for milk it has given excellent results, and in case of scrofulous foals nothing short of wonders have been reached by giving small feeds of dried blood. In German studs dried blood is commonly used as a feed for horses, both as a concentrated feed and as an appetizer."

Prof. W. A. Henry, director of the Wisconsin Experiment Station, has the following to say in regard to the use of these feeds for farm animals, in his book, "Feeds and Feeding":

"Dried blood may serve a useful purpose with stockmen, especially the pig feeder. Pigs at weaning time will relish a tablespoonful of dried blood daily with their feed, and this allowance may be gradually increased until two ounces are fed daily to each animal."

"There is no reason why the better grades of meat scrap (tankage) produced at our slaughter-houses should not be used for feeding stock, especially pigs. La Querriere concludes that it is excellent for horses when boiled and mixed with hay or straw. The practice of feeding meat to horses is by means new. The Arabs prepared camels' flesh with other feed in the form of cakes which were given to their horses, thus providing a concentrated, nutritious food. Dried meat (tankage) made into a biscuit with oats have been recommended for feeding race-horses."

In his recently published book, "The Feeding of Animals," Professor W. H.

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Freeport, Ill., June 1899. Dear Sir:—Knowing, as I do, the excellent merits of your Balmoline, as practically demonstrated by its use under my personal observation. I am thoroughly satisfied that for chafes, galls, cracked heels, and all flesh wounds it stands at the top of the list.

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Jordan, the director of the Geneva (N. Y.) Agricultural Experiment Station, says of the slaughter-house feeds: "All these materials are excellent poultry foods when used as a part of the ration. They may be fed to swine also as an amendment to cereal grains when dairy by-products are not available."

WHAT EXPERIMENT STATIONS HAVE FOUND.

It will only be necessary for us to quote a few of the experiments conducted by our State Experiment Stations with tankage, dried blood, and bone-meal, to show the value of these feeds in feeding farm animals. There is one point in this connection which we wish especially to illustrate and to emphasize, viz., their value for supplementing farm foods, especially Indian corn, as a diet for fattening swine. In the whole Central West, Indian corn is the great swine fattening food, and it is to a large extent the sole food used for this purpose in this region. Professors Sanborn and Henry were the first ones to show that swine fattened on an exclusive diet of Indian corn grow to be sickly, over-fattened animals, that easily fall a prey to disease, and whose framework, muscles, and vital organs give evidence of malnutrition.

The experiments by the latter investigator on this point are very important and deserve to be studied carefully by every pig-feeder. In these experiments a dried-blood ration was fed against corn as the sole diet for swine, so as to study the effect of these foods on the carcasses of the animals.

Six pigs of a litter of eight, 100 days old at the beginning of the experiment, were separated into two lots and fed as follows: Lot 1.—One part dried blood, six parts wheat shorts, fourteen parts sweet skim-milk (by weight); lot 2.—Finely-ground corn-meal, all they would eat.

Up to the time of the experiment all pigs had been fed from the same trough on a mixture of shorts, corn-meal, skim-milk and buttermilk. The experiment lasted 136 days, and gave the following results:

	Lot 1, Dried- Blood Ration, Pounds.	Lot 2, Corn- meal, Pounds.
Feeds given during experiment:		
Skim-milk.....	3,302	
Shorts.....	1,415.1	
Dried blood.....	235.9	
Corn-meal.....		1,690
Digestible food materials.....	12,624.3	13,470.9
*Average weight per head.....	88	90
Average gain in live weight.....	135.1	97.2
Gain per day per head.....	.993	.714

*At beginning of experiment.

While the three pigs in lot 2 only gained 0.714 pounds per day per head, on the average, for the whole time, those in lot 1 gained nearly a pound a day per head; and this result was reached with less digestible food materials in the dried-blood ration than furnished to lot 2 in the corn-meal, as will be seen from the figures in the table.

The most interesting results were obtained when the pigs were slaughtered, and the carcasses, with the weighings, etc., obtained at slaughtering, were examined.

TOTAL WEIGHTS OF CARCASSES AND THEIR VARIOUS PARTS, IN POUNDS.

	Dried- blood Ration, Pounds.	Corn- meal, Pounds.
Live weights.....	669.3	561.5
Dressed weights.....	541.8	451.0
External fat.....	150.0	156.0
Lean meat.....	244.0	178.5
Kidneys.....	1.7	1.2
Blood obtained.....	18.5	11.7
Leaf lard.....	27.0	25.1
Tenderloin muscles.....	5.8	3.9
Large muscles of back.....	26.5	16.1
Hair.....	4.8	3.5
Six thigh bones.....	33.6	27.3
Breakage weight of thigh bones.....	455.0	285.5

The live weight of lot 1 (fed dried-blood ration), was 19 per cent greater

than that of lot 2 (fed corn-meal), and the dressed weight 21 per cent greater. The kidneys of lot 1 were 42 per cent heavier than those of lot 2, the blood 59 per cent, the hair 36 per cent, the large muscles of the back 64 per cent, the two tenderloin muscles 38 per cent, and the bones 23 per cent heavier in lot 1. On the other hand there was 38 per cent of external fat in lot 1 and 46 per cent in lot 2.

These results are very remarkable indeed, and still more so is the fact brought out by the breaking tests made with the thigh bones of the pigs on the experiment. It was found that the thighs of lot 2 broke at a pressure of 2,855 pounds, while those of the lot fed the dried-blood ration did not break until 4,550 pounds was reached, a result 65 per cent in favor of the lot fed dried blood.

These findings have been corroborated over and over again in careful, long-continued experiments; they tell decisively that abnormal conditions are brought about by feeding animals one-sided corn rations, or any ration rich in heat-producing materials, but lacking in flesh-forming substances. The figures given in the preceding table plainly tell how these abnormal conditions express themselves. By feeding fattening swine on exclusive corn diet, there was found:

1. An excessive development of fat, not only on the outside of the muscles and between the skin, but also between the muscular fiber.
2. The muscles of the body fail to develop to their normal size, especially some of the most important ones, as those along the back.
3. An abnormally small amount of hair and a thin skin results.
4. While the brain, heart, and lungs do not seem to change in weight, the spleen, liver, and kidneys are unusually small.
5. The amount of blood in the body is greatly reduced from the normal.
6. The strength of the bones may be reduced one-half.

Profits in the Feed-lot from Well-bred Animals.

A bulletin of the Missouri State Board of Agriculture is devoted to discussing beef cattle, which, in view of the present rise in meat prices, is timely and of special importance. Recent experiments in Missouri, Illinois, and Iowa have destroyed many time-honored theories about beef cattle and the method of feeding. The old idea that profitable prices depend more upon feed than upon breed is scouted in the bulletin just issued, the statements in which are backed up by tables giving the facts and figures obtained from recent experiments.

In discussing high quality from high breeding the report says: "No proposition in the whole realm of live stock husbandry has been more definitely demonstrated than that high quality comes from feeding well-bred animals. It is true that among beef cattle some are capable of consuming a certain definite amount of food and producing therefrom a fine quality of flesh that sells for 6 cents, live weight, while other cattle, fed on the same food under same conditions, are slow sale at 4 cents per pound."

The figures quoted were the prices previous to the recent rise, but serve just as well as an illustration of the new theory. The report goes on to say, "This great difference is not due primarily to the feeding, but to the breeding of the animal. At the Iowa Experiment Station, cattle of various breeds were fed for nine months. The gains made were approximately the same, and the food required to produce a given gain was about equal with all breeds. But when these cattle were offered for sale, the strictly beef-bred animals brought \$2.22½ per hundred more than others not specifically bred for their beef qualities. The Shorthorn, Aberdeen-Angus, and Hereford easily brought the highest prices of the day, while the Jerseys and Holsteins were sold for scarcely enough to pay for their feeding and shipping. We hear it frequently stated that pure-bred animals are more profitable because they are able to produce more gain from a given amount of food. The statement can not be substantiated. The experiments all point to the fact that the well-bred animals are more profitable because they produce a much more valuable product, and not because they are able to produce a greater bulk on the same amount of food."

The report contains many suggestions, not only to the cattle-breeder, but to the beef-buyer. The former class are advised, if they live in the "corn belt," to be liberal with their feed, as the profits will repay the outlay. Cheap feed mixed with a suitable grain ration may be used, especially when the object is to produce early maturity, but during

PRICKLY ASH BITTERS
CURES CONSTIPATION.

the fattening time food of the best quality should not be spared.

To the beef-buyer, the report says: "Too much care can not be exercised in the purchase of feeding cattle. Be sure that they have the typical beef form, and have not coarse bones, long legs, or harsh, papery skin, and by all means do not buy an animal that has been half starved when young, as such an animal is undesirable."

Use Good Sires.

Never was there a greater demand for good sires and the encouragement for the improvement of herds greater than at present. The sales of pure-bred cattle during the last three or four months proves this. The only way that we can produce a better grade of live stock—a grade that will top the market—is by the improvement of the native herds by the infusion of pure blood. The ideal constantly recedes. When the breeder of to-day approaches the standard set a year ago he will find that it has been advanced a few points further. This means that he will never reach perfection. The apparently perfect animal will be found to be lacking in some small detail, and future generations will develop a type of animal far superior to the best produced by our most successful breeders of the present. The recent high prices paid for pure-bred bulls are likely to discourage some farmers from buying a bull. This should not be. Nothing should deter him from buying a good bull. It is not necessary to pay a thousand dollars for a bull. The price does not cut such a figure. The progeny of a good pure-bred bull costing \$200 will readily sell for \$2 to \$5 a head more as calves or yearling stockers than the offspring of a scrub or grade bull at the same age, and the better bred stuff will bring from \$15 to \$20 a head more as finished beefees.

The small farmer who can not afford to purchase a pure-bred sire may easily breed his cows to the bull owned by some one of his neighbors. Nowadays in nearly every farming district may be found one or more first-class bulls that may be secured at a fee ranging from \$1 up to \$10. There is no excuse for not having highly bred calves.

In communities where the farmers own but few cows and none of them own a fine bull it would be a good idea to form a club and purchase one. This plan is practiced with success in many sections. At the present high price of beef every farmer should endeavor to be a producer. The demand is increasing and the supply constantly diminishing. Get in line, farmers, and help meet the demand by buying pure-bred sires to assist you in the work.

Broad Charges Made.

In the bill for an injunction filed by the attorneys for the Government in the Federal court at Chicago it is charged that the packers have conspired to manipulate the market in buying their live stock; that they have secret agreements to regulate the selling prices of their products; that they restrict shipments to manipulate the market; that they impose penalties on each other for breaking their agreements; that they blacklist customers who do not pay their bills; and that they receive unlawful rebates from the railroads which their competitors do not get. The suit is brought against Armour, Swift, Nelson Morris, Hammond, Cudahy, and Swartzschild & Sulzberger. The court is asked to grant an injunction to stop all the illegal practices alleged.

The South Omaha Live Stock Exchange has adopted a resolution on the agitation over the so-called beef trust, asking the public to withhold judgment pending the investigation now in progress. In part the resolution says:

"Resolved, That we respectfully ask the American people to refuse to allow their minds to be prejudiced by sensational articles being published broadcast through the press, regarding the so-called 'beef trust,' but hear both sides to the investigation now being held be-

fore rendering their verdict; that this agitation is hurting the producer, and when the producer of any commodity is hurt it is an injury to the foundation on which all prosperity is built; that the Government is making a thorough and complete investigation, and if it should develop that there is a beef trust, let the law be enforced, but do not injure the producer by following such advice as 'don't eat meat,' as by so doing you could not possibly injure a meat trust. Only the producer would suffer."

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.

Parturient Apoplexy.—Some time ago an 8-year-old cow in good health and strength dropped a calf and seemed all right in every respect. At noon the following day she seemed weak and staggered when she walked, also the movements of her head were jerky. She grew weak rapidly and she soon fell down and remained down about twenty hours. Her breathing was irregular. Perspiration stood in drops all over her body and her nose was dry. I injected warm soapy water into her womb and rectum frequently during the night. Her bowels moved after each injection, but at no other time. The following day, about 6 p. m., she got upon her feet without help. At this time she seems to have fully recovered. The flow of milk was somewhat diminished, but the udder was not inflamed, and the milk which I drew while she was down, appeared to be normal. She had been dry two and one-half months. At the time of calving she was living nearly altogether on green wheat with wheat straw to run to. She has had free access to water and has been protected from storms.

Some time after the first cow was affected, a pure-bred Shorthorn cow, 10 years old, thin in flesh but hearty and strong, dropped a calf. She had been fed the same as the roan cow described above. She had a large udder and gave a large flow of milk. About a week after coming fresh she came in from the wheat field as usual with a full udder and seemed all right. The next morning I found her lying in the yard. She staggered to her feet, but was very weak and unsteady in her movements, and she went down in about half an hour. A little later every movement she made caused her to lie flat on her side with limbs and head stretched out and jerking, her muscles quivering and her teeth grinding. She would neither eat nor drink, and nothing passed her bowels. She died in intense agony the next day.

The first cow's eyes seemed natural, although she had an anxious expression on her face. The second cow's eyes rolled back, but did not appear bloodshot. She bloated a little an hour or two before she died. Kindly tell me what the trouble was. Is there danger of a recurrence? A FARMER.

Great Bend, Kans.
Answer.—Parturient apoplexy or milk fever is always seen in cows that are in their prime—large cows giving a good flow of milk. Too rich food and pasture are the principal causes. After one attack the cow is slightly liable to the disease again at calving time. Do not feed rich food for some time before calving or for ten days after calving. If the weather is hot keep the cow in a cool place during the day. As soon as she has calved give two pounds of Epsom salts in a quart of hot water as a drench. This will prevent the attack, and with a careful and light diet there will be no danger of a recurrence.

PILES NO MONEY TILL CURED. 25 YEARS ESTABLISHED.
We send FREE and postpaid a 200 page treatise on Piles, Fistula and Diseases of the Rectum; also 100 page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.
DRS. THORNTON & MINOR, 1007 Oak St., Kansas City, Mo.

Clay's Shorthorns Sell Well.

The sale of seventy Shorthorns, held May 14 at the fine stock sale pavilion at the Kansas City Stock Yards, by W. T. & H. R. Clay, of Plattsburg, Mo., was a lively and representative Shorthorn event. The attendance was good, bidding lively, and good prices were realized. Fifty-five cows and heifers, sold for \$12,830, an average of \$233.27. Fifteen bulls sold for \$2,625, an average of \$175, realizing a general average of \$221 for seventy Shorthorns. All animals sold for cash without guarantee as to future usefulness.

The sale in detail was as follows: Butterfly 2d of Wildwood, E. S. Donahey, Newton, Iowa, \$800. Butterfly 3d of Wildwood, C. C. Bigler & Son, Hartwick, Iowa, \$505. Salvia 2d, C. D. Bellows, Maryville, Mo., \$400. 5th Orange Blossom of Wildwood, H. C. Duncan, Osborn, Mo., \$355. 7th Orange Blossom of Wildwood, C. C. Bigler & Son, \$305. 6th Orange Blossom of Wildwood, J. M. Smith & Son, Allentown, Iowa, \$306. Pro Barrington Bates, C. D. Bellows, \$350. Rosedale Violet 11th, C. D. Bellows, \$415. Rosedale 5th, H. C. Duncan, \$300. Park Violet 4th, J. W. Smith & Son, \$565.

Nellie Maid, H. C. Duncan, \$255. Nellie Maid 3d, E. S. Donahey, \$255. 2d Golden Drop of Wildwood, E. S. Donahey, \$290. Royal Victor, H. Campbell, Trenton, Mo., \$380. Barrington Victor 4th, C. J. Winger, Polo, Mo., \$305. Commodore 2d, J. C. Salyer, Higginsville, Mo., \$205. Orange Blossom's Victor 178274, A. Carrier & Sons, Newton, Iowa, \$205. Lady English 4th, L. Brodsky, Plevna, Iowa, \$200. Vesta Lady, H. C. Duncan, \$425. Minnie 32d, A. Carrier & Sons, \$215. Cordella 5th, A. Carrier & Sons, \$190. Nora Belle 19th, B. F. Winn, Edgerton, Mo., \$145. Red Beauty, H. C. Duncan, \$235. Courier's First 178273, Geo. T. Winn, Plattsburg, Mo., \$250. Leslie's Beauty 5th, G. T. Winn, \$105. Leslie's Beauty 4th, G. T. Winn, \$175. Claudine S., Jno. G. Overton, Trenton, Mo., \$175. Noxubee Lady Belle 8th, Jackson Bradley, Lexington, Mo., \$200. Noxubee Lady Belle 9th, C. C. Bigler, \$220. Noxubee's Beauty, G. T. Winn, \$200. Noxubee Lady Belle 5th, H. C. Duncan, \$125. 20th Mary of Wildwood, A. Carrier & Son, \$105. Lord John 3d 172612, A. Carrier & Son, \$105. Poppy 8th of Buffalo, Hall Woodstock, Carthage, Mo., \$185. Sharon Beauty, Ed. Hess, Council Bluffs, Iowa, \$130. Poppy 14th of Buffalo, G. T. Winn, \$175. Gentle Jessica 3d, Ed. Hess, \$150. Gentle Jessica 4th, Geo. Bundy, Hoxie, Kans., \$100. Mary Pickett, Jos. Mangler, Salisbury, Mo., \$150. 12th Rose of Sharon of Wildwood, H. K. Campbell, Trenton, Mo., \$170. Sharon Queen, A. Carrier & Son, \$270. 23d Mary of Wildwood, G. T. Winn, \$155. 56th Mary of Wildwood, J. G. Overton, \$305. 10th Loudon Duchess, N. M. Coop, Higginsville, Mo., \$200. 60th Mary of Wildwood, Geo. Givens, Lees Summit, Mo., \$130. Priscilla, A. W. McDarwich, Oakland, Mo., \$185. Priscilla 2d, Geo. Givens, \$105. 57th Mary of Wildwood, A. Carrier & Son, \$175. 3d Mary of Sunny Hill, T. J. Wornall & Son, Liberty, Mo., \$135. 1st Lady Gunter of Wildwood, C. D. Bellows & Son, \$300. Bowman Lady Gunter, C. D. Bellows & Son, \$250. Bowman Lady Gunter 2d, W. R. Hardesty, Linkville, Mo., \$185. 6th Daisy, Dean of Wildwood, F. W. Keplinger, Lucas, Neb., \$105. Princess Alice, J. M. Smith & Son, \$205. 2d Daisy Dean of Wildwood, A. Carrier & Son, \$135. Bess, J. C. Washington, Mayette, I. T., \$300. Phyllis Thirteenth of Buffalo, Geo. Wengler, Salisbury, Mo., \$180. Phyllis Fourteenth of Buffalo, F. W. Keplinger, \$150. Josephine B. of Wildwood, J. C. Washington, \$200. 22d Josephine of Wildwood, H. C. Duncan, \$200. Barrington Victor 5th, R. W. Babcock, Lawson, Mo., \$100. Barrington Victor 9th, Wood & Adams, Carpenter, S. D., \$160. Barrington Victor 10th, C. D. Donahey, \$150. Barrington Victor 6th, Steven H. Tice, Plattsburg, Mo., \$250. Barrington Victor 7th, Murphy & Marshall, Linwood, Kans., \$100. Barrington Victor 8th, H. C. Duncan, \$65. Enigma 2d, J. G. Washington, \$100. Enigma 3d, Frank Balfe, Girard, Kans., \$160. Enigma 4th, H. O. Love, Mayette, I. T., \$90.

Combination Shorthorn Sale.

On Thursday May 15 there was held a breeders' combination sale of Shorthorn cattle at Chillicothe, Mo. The offering consisted of consignments from the herds of Geo. Bothwell, Nettleton, Mo.; J. F. Finley, Breckenridge, Mo.; G. W. Wood, Winston, Mo.; Purdy Bros., and C. W. Thomas, Harris, Mo.; Phelps & Trimble, Samsel, Mo.; John Morris, Joe V. Beazell, and R. V. McGulre, Chillicothe, Mo. Col. Harry W. Graham, Chillicothe, organized the local breeders for this sale and it was gotten up in a very short time, consequently the condition of the cattle was not calculated to bring long prices. A number of breeders consigned animals for auction for the first time, in this sale. The males were rather young for public auction. The sale realized an average of \$106.95, on fifty-nine head. Twenty-five cows and heifers averaged \$143.60 and thirty-four bulls brought \$80 each. The sale was nominally under the management of Mr. George Bothwell, of Nettleton, Mo., but is practically engineered to its success by Col. Harry W. Graham, of Chillicothe, a man who is one of the coming auctioneers of Missouri. There was considerable local interest in the sale in an endeavor to

the averages made at the Trenton, Mo., sale some weeks ago. Thursday's average was about \$10 higher than the Trenton sale.

Colonel Graham, Colonel Sparks, and Colonel Slifer were the auctioneers. The attendance was large with bidders present from Missouri, Kansas, Oklahoma, and Washington. None came from Iowa or Nebraska. H. H. Ackerman, of Colfax, Wash., purchased ten head of good ones, both bulls and females. W. L. Miller, of Jamesport, Mo., bought a car-load of bulls which will be shipped to Texas. G. W. Houx, of Hale, Mo., a prominent Shorthorn breeder, topped the sale by buying \$500 for a roan yearling heifer consigned by W. L. Miller. Mr. Ackerman paid \$460 for Queen of the Lawn, an 8-months-old heifer sired by Imp. Nonpareil Victor, and consigned by George Bothwell. The highest price for bulls was \$205 paid for George Bothwell's Winsome Baron, a pure Bates yearling bull by Winsome Duke 1th, which was sold to R. W. McCleary, of Chillicothe, Mo.

Among other buyers were: G. A. McWilliams, Winston, Mo.; J. S. Rogers, Palmyra, Mo.; J. H. Peery, Jamesport, Mo.; T. W. Budd, Basehor, Kans.; S. Hawkins, Chillicothe, Mo.; S. W. Anderson, Albia, Mo.; George Bothwell, Nettleton, Mo.; Fred Hornecker, Chillicothe, Mo.; Frank Platter, Chillicothe, Mo.; S. S. Keeler, Chillicothe, Mo.; H. C. Duncan, Osborn, Mo.; J. H. McGee, Martinsville, Mo.; Ed. Hereford, Chillicothe, Mo.; John Morris, Chillicothe, S. P. Munpower, Chillicothe, Mo.; E. M. Kelfer, Kenoma, Mo.; Troy Rench, Laredo, Mo.; L. R. Twing, Hamilton, Mo.; I. N. Page, Chillicothe; L. A. Martin, Chillicothe; S. J. Miller, Chillicothe; Joe W. Thomas, Harris, Mo.; M. L. Higgins, Chillicothe; N. Z. Johnson, Samuel, Mo.; Scott Miller, Chillicothe; W. A. Holt, Savannah, Mo.

Iowa State Fair for 1902.

Secretary J. C. Simpson, of the Department of Agriculture, has just issued the new premium-list for the Iowa State Fair for 1902. The department paid out last year \$20,000 in premiums to 500 exhibitors and this year the amount will be even larger.

The live stock exhibit at the Iowa State Fair is second to none. At the fair of 1901 over 650 cattle were on exhibition, this being about 50 less than the number shown in 1900, and about fifty less than the number shown at the International Stock Show at Chicago last December.

Last year there were eleven large cattle barns, two horse barns, and a large tent, filled with cattle, and everything now indicates that the number this year will greatly exceed that of last. To take care of this great cattle show four new barns are now being built, and the Legislature has just passed a bill appropriating \$37,000 for a fireproof steel and brick stock pavilion, similar to the one erected in Illinois on their State Fair grounds last year. This stock pavilion is to be 225 by 175 feet, making a show ring on the inside 170 by 120 feet having a seating capacity of about 4,000 people. In this building the judging of all cattle and horses will take place. There will also be a sale of 100 Hereford cattle, conducted by the Hereford Cattle Association, in this pavilion one or two half days of the fair.

It need not be said that the addition of this building will greatly add to the educational value of the State Fair. All those interested in judging good stock may be comfortably seated in this building, where they may witness the awarding of the prizes.

Elegant Swine.

On May 6 I visited the great Poland-China ranch of Winn & Mastin at Mastin, Kans., and put in the whole day viewing the fine hogs. Mastin is simply a station at the crossing of the Missouri Pacific and Frisco railroads. The Missouri Pacific gets there from Kansas City at about 11 o'clock a. m. and departs at about 4 p. m. The ranch buildings are a mile or more east of the depot and as one walks out he passes numerous hog pastures all containing hogs, on blue-grass pasture with never-failing spring-water and shade-trees in abundance in each pasture. Each pasture is fenced with Page woven wire and has a large sign board up telling the number of each pasture and forbidding trespassing.

At the depot were four hogs in crates going to Texas, Wisconsin, and Nebraska, and as about seven hundred hogs are kept on the ranch, there is an average of three or four shipped out each day. There is four mails each day and the firm and its small army of workmen receive a bundle of mail that would surprise some post-masters.

The ranch buildings seem to be on a high divide and the rolling land produces so many hollows that each pasture has a creek of its own, or if the springs should go dry, are watered by pipes from the water-tank that stands on the very highest land.

Miles of water and gas pipes completely annihilate drought and distance, as enormous wealth is back of this ranch. Mr. Mastin owns the eighteen or twenty thousand acres and Frank Winn seems to have a fifteen-year lease on the ranch, hence the name of Winn & Mastin. I am not sure whether Mr. Mastin takes an active part or not, he was unwell when I was there and I transacted my business with Frank Winn. They have cross-drilled several fields of alfalfa this spring and it looks unusually well, as the land is rich from barnyard manure. They had some alfalfa put in last fall in former hog-lots and the soil was so rich that the alfalfa was about ready to cut when I was there. They will not get fully built up for some time to come. They have about a train-load of Arkansas lumber on the ground and a carpenter is kept busy the year around building houses, pens, and so forth. They are milking 90 cows at present but intend to milk 400 soon. The cream is sent to Kansas City and the sweet skim-milk fed to the show hogs, about two or three car-loads of them. In addition to the skim-milk they have rolled oats, hominy hearts, wheat chops, oat shorts, each one part; oil-meal one-fourth part and blood-meal one-sixteenth part stirred up with the milk until it is quite thin. Two large tanks, on wheels, drawn by a mule each conveys the slop to the pens. They have their own natural gas well and warm the slop in a large tank in cold weather. I had plenty of time to see the mighty Corrector, the \$2,500 hog; Lamplighter, the International winner at Chicago, who is a brother to my own herd-bear; Missouri

Sunshine; Perfect I Know, the king of show hogs; Proud Perfection, the great sire of show stuff; and the great yearling, Corrected, that they had just got from Mr. Axline for \$1,000 to show at the head of Corrector's get this fall. This is the best young hog I ever saw and, in my opinion, is way ahead of his sire. F. M. Lail, Marshall, Mo., who bred him, now owns his dam and has bred her for a fall litter to a litter brother of Corrector's that was the crack pig of the litter at the time he sold him. He has bought him back again, together with Corrected's dam and hopes to duplicate Corrected again.

Frank Winn is a marvel. He showed me 175 brood sows without a single mark or ear tag or crop to identify them and readily recognized them all. He had 100 other sows with litters that were yet separated and 175 gilts in a large lot. He could tell them all, but was awfully worried about how he was to tell the 600 pigs as most of them was by the phenomenal even breeder, Proud Perfection, the best son of Chief Perfection 2d, and they all looked alike. It was my good fortune to be able to explain to him a system of ear marking from one to ninety thousand that he will adopt, using a single mark for each litter, thus insuring against any mistakes before the pigs are put together or weaned. I wrote down the key and explained it all to him and it has lifted a load off his mind. I mark my own pigs when 2 days old and record the marks in my private herd-register and my wife can go to the book at any time, select the breeding asked for and go out and pick out the pig at a glance. It is as simple as using numbers and the registry. The number of the hog can be cut into his ear without hurting it for show purposes.

As my gilts at home were out of a boar from Missouri Black Chief, the \$1,000 State fair winner, and my boar's dam was out of the State fair winner, Chief Tecumseh 2d from a Klevor's Model sow, another State fair winner, from old Lock Me Over, the \$3,000 winner, I desired to get something nice to breed my gilts to, so as to be able to live up to my advertisement in the Farmer, wherein I claim the most fashionable breeding. I was greatly struck by Proud Perfection and his uniform get, so I bought the \$500 son of his out of May Perfect, who was No. 72 in their Springfield, Ill., sale and sold for \$115 to Geo. Horton, Wabash, Ind. May Perfect was a show sow and out of May Perfection and Perfect I Know. May Perfection was No. 2 in their Springfield sale and sold for \$420 to John W. Frunk jr., the proprietor of the Darkness herd. May Perfection is from Chief Perfection 2d and Old Darkness, the greatest sow Winn ever owned, and is a sister to the famous Heart's Delight. This 9-months-old boar that weighed 400 pounds was called Proud Perfection 2d and is really and truly a chip off of the old block. Frank Winn says he is one of the very best pigs in the United States. He is a perfect duplicate of his sire in that proud bearing so peculiar to him, also in build and color, and I feel as if I was in great luck to own so valuable an animal. As I and not an exhibitor, few will ever see my hogs, but it gives me pleasure to be able to sell as richly bred pigs as the world produces at farmers' prices through the "Old Reliable's" advertising columns. Moran, Kans. J. C. NORTON.

Auction Sale of Percherons.

I will offer at public sale, at my Willowdale Stock Farm, eighteen miles southwest of Kingman and six miles north of Zenda, on the Mulvane extension of the Santa Fe railroad, on Thursday, June 5, 1902, all my registered and grade Percheron horses. They are a splendid lot and will be sold to the highest bidder. Five per cent discount for cash, or one year's time at 7 per cent will be given on approved security. Purchasers will be transported free to and from the farm. FRANK WEINSCHENK. MAJOR W. L. BROWN, Auctioneer.

Gossip About Stock.

Mr. E. W. Brown, proprietor of the Nebraska herd of imported Chester White swine at Shelby, Neb., is welcomed among the breeders who offer first-class animals in a territory where only such are purchased. A handsome catalogue, nicely illustrated, will be sent for the asking.

A combination sale of Holsteins was held at Syracuse, N. Y., on April 30, which brought very good prices for the breed. Eighteen bulls were sold for \$1,375, an average of \$71, the top of the bull sale being \$300. Fifty-six cows sold for \$6,055, an average of \$108, the top of the cow sale being \$200.

It is reported that a company has recently leased in 1,100 acres of land in Lincoln County, Ga., and has obtained an option on 10,000 acres more in the vicinity with the purpose of raising Georgia cattle for the market. The company is financed by a New York man and has the assistance of the State Board of Agriculture in selecting the land.

It is now stated that France has in preparation a mammoth textile and industrial exhibit for the St. Louis World's Fair. In making this exhibit France will unconsciously give valuable lessons to our own Southern States which are expected in a few years to comprise the greatest silk producing area in the world.

Shorthorn men may be interested in learning that one of their fraternity, Hon. M. A. Low, of Topeka, is slated for the presidency of the new railroad which the Rock Island proposed to build from Ft. Worth to the Gulf. The probabilities are that the Gulf terminus of this new road will be at Galveston if facilities can be obtained.

The combination sale of Shorthorns under the management of F. P. Healy, of Bedford, Iowa, was held at Chicago on May 16. A total of 117 head were sold for \$14,470, averaging \$123.67. The 80 females sold for \$9,470, average \$118.37; and 37 bulls brought \$5,000, average \$135.13. It is noticeable that most of the animals in this sale were sold to breeders west of the Mississippi.

The second annual sale of Shorthorn cattle held under the auspices of the Wisconsin Shorthorn Breeders' Association at Madison on May 9, was a decided success. The offerings in most instances were con-

sidered very meritorious and the average for the better class of animals was in excess of \$400, although the throwing in of a few tailings reduced the general average to \$212.

In spite of the postponement of the St. Louis World's Fair, active preparations are already being made in live stock circles to capture some of the numerous and handsome premiums that will be hung up. Already thirty-five Hereford steers were purchased last week and sent to a Wyoming ranch to be fed for the fair. The purchasers announce their intentions to win the first prize.

The sale of Shorthorn cattle held by W. H. Neece, of McComb, Ill., on May 1, resulted in a low average because of the lack of proper feeding and because of a storm which occurred on the day of the sale which served to dampen the ardor of bidders. Many of the bulls offered in the sale were very young and sold at low prices. The forty-six head brought \$3,910, an average of \$85.

Prof. A. M. Soule, of the Tennessee Experiment Station, says the Australia Salt Bush that has of late been extensively advertised is adapted to cultivation in portions of the arid West, where the high per cent of the alkali prevents the growth of ordinary farm crops. This salt bush is a perennial, but can be easily destroyed if it is desirable, and probably has no value in any section of this country east of the arid plains.

Mr. J. G. Truman of Bushnell, Ill., president of the American Shire Horse Association, announces that the English Shire Association have decided to offer two gold medals respectively for the best mare and stallion of this breed exhibited at the next International show. Shire breeders and importers will at once see the benefit of this liberal action on the part of the parent society and the contestants for these prizes will doubtless be numerous.

The Shorthorn sale held by C. F. Rice at Indianola, Ill., last week was a very successful one and resulted in an average of \$200 on the 32 animals sold. The 27 females brought \$5,740, averaging \$212.58, and five bulls brought \$660, averaging \$135. The top of the sale was reached by Marma's Lady by Marmaduke, which went to J. O. Stout of Hollinsburg, for \$550. Lucy Ann by Chief Justice went to Ellis Williams of Mt. Perry, Ohio, for \$425.

A. B. & F. A. Heath, Republic, Neb., write us that they still have a few of those excellent young bulls for sale, and that the individuals now offered are very much above the average. Their reputation as breeders is such that they need no introduction among their former patrons, who are always their best customers, but should any one need an excellent young bull he will be able to find it by addressing this firm, whose advertising card appears on page 574.

At this season of the year it may be interesting to know that Professor Curtiss of the Iowa Experiment Station recommends that a mixture of 25 pounds of ground corn, 60 pounds of shorts, and 15 pounds of ground soy-beans be mixed dry and then made into a slop for feed for sows with pigs. This combination furnishes the elements necessary to develop the bone and muscle of growing pigs and is recommended for trial by all who have the ingredients.

In the experiment station barns at Madison, Wis., on Friday, May 9, the Wisconsin Shorthorn Breeders' Association held a combination sale. Col. Carey M. Jones was the auctioneer in charge of the sale, which was attended by prominent breeders from Wisconsin, Illinois, and Iowa. There were fifty-two animals sold, which brought \$11,040, averaging \$212.30. Of these forty-five were females, which brought an even \$10,000, averaging \$222.22, and seven bulls, which brought \$1,040, averaging \$148.50.

Washington is rapidly being converted into a live stock State. According to Prof. E. B. Elliott, of the Experiment Station, nearly 10,000 head of cattle have been brought into the Palouse country from the East during the last ten months, and most of them were high-grade. Thousands of acres of brome-grass have been seeded this year and many acres of alfalfa also. Last year's seeding on the hills is now six inches high, and the prospects are so bright that settlers are coming in thousands.

Mr. C. A. Stannard, Emporia, Kans., and Gudgeon & Simpson, Independence, Mo., combine in a sale of registered Hereford cattle to be held at Sioux Falls, S. D., on June 12. In this sale will be represented two of the best known Hereford herds in the West and the offering will consist of forty-five females and thirty bulls, which are being taken to the Dakota markets in response to a strong demand for first-class cattle in this newly developed cattle region. Catalogues may be had from either of the contributing parties.

The engraving on the \$250 Armour trophy lately presented by the Armour's Packing Company to be offered as a prize for the best Galloway bull of any age that is shown at the American Royal cattle and swine show is as follows: "Armour Galloway Trophy, presented by the Armour Packing Company, Kansas City, U. S. A. to the American Galloway Breeders' Association to be awarded at the American Royal 1902 for the best Galloway bull any age." A blank space is left for the name of the winning bull and its owner.

The Live Stock Sanitary Board of Wisconsin decided on May 9, that hereafter every shipment of Western range horses made into that State must be accompanied by a certificate issued by a reputable veterinarian showing that the animals were free from glanders or other malignant diseases. This certificate is to be issued only at the last point of loading before being brought into the State. The board of officers of Minnesota have signified their desire to take a similar action and other States will probably fall into line.

At the last annual meeting of the American Jersey Cattle Club a total of 10,341 cattle, consisting of 2,515 bulls and 7,826 cows had been registered during the year. At

this meeting arrangements were made by which English registered cattle could be registered in the books of the American Jersey Cattle Club. \$1,000 was appropriated for the purpose of making a test of the merits of the Jersey cattle as compared with other breeds at the St. Louis Exposition and the committee in charge was given power to increase this amount if necessary.

In Denver, Col., arrangements have been made for dipping Southern cattle which are to be sent to the Northern ranges. The Stock Yards Company has just installed a complete dipping plant and it is proposed to dip cattle as well as feed and brand them before they start for the ranges. As nearly all stock cattle on the range are bothered with lice and vermin and occasionally have a touch of mange it has been thought a wise policy to incur the small expense of 6 cents per head for dipping and thus insure good results rather than to let them go as formerly and take the risks.

At the Sand Hills Stockmen's Convention held at Crawford, Neb., Professor Lyons, of the Nebraska Experiment Station, advocated the securing and development of native varieties of grasses for the ranges in preference to anything that could be introduced. Mr. I. A. Fort, of North Platte, advocated a readjustment of the homestead law so as to enable homesteaders to secure two sections of land. This seemed necessary to him because all of the agricultural lands are now taken and the cattle-raiser can only hope to make a living on two sections or more of such land as still remains open to entry.

Mr. C. B. Dustin, of Sumner Hill, Ill., is reported to have sold his herd of thirty-eight Shorthorns to C. C. Bigler & Sons of Hartwick, Iowa, for a total of \$30,000. In this sale is included the famous herd-bull Merry Hampton who has been pronounced by breeding judges in America to be one of the best bulls now living, and whose price in the sale was \$15,000. This makes Merry Hampton the highest priced bull of any breed now living. Following closely upon the recent purchase by Col. G. M. Casey of the eight Shorthorn cattle, including Ruberta, Choice Goods, and Cicely for \$25,000, it would seem to indicate that the Shorthorns have lost none of their ardent admirers.

The Corn Growers' Association of Illinois has adopted a system of examination to test the qualification of candidates who apply for certificates as expert judges of corn. Those who pass this examination are given a certificate entitling them to a rank as expert judges for one year, when it will be necessary to take another examination. Three certificates gained in this manner entitles the holder to a life certificate. At a recent meeting of the Association fifty-one candidates were successful in passing the required examination and receiving annual certificates. There is an idea which might be adopted with profit by the Kansas Corn Breeders' Association which was organized last winter.

We wish to direct the attention of our readers to the very liberal offer of the Bickmore Gall Cure Company, of Old Town, Maine, as set forth in their advertisement which appears elsewhere in this issue of our paper. These people are offering to send a free sample box of their Bickmore Gall Cure to all those of our readers who will comply with the simple and easy requirements. We know this remedy of old; it has been advertised in our paper before and we have never heard a single complaint against the remedy or its manufacturers. We conclude that there must be a wide field for the use of such a preparation and recommend that those of our readers, who are horse owners, to respond to the advertiser's request at once. Certainly you assume no obligation or risk and we feel very sure that the results will be entirely satisfactory.

We call especial attention to the sale of high-bred Percheron mares and stallions to be held by Mr. Frank Weinschenk at his Willowdale Stock Farm about six miles north of Zenda, Kans., on Thursday and Friday, June 5 and 6. Among the choice animals which will be offered we notice the imported stallion Becouel 1797 (38123), which now weighs 2,100 pounds and is undoubtedly one of the very best draft stallions in the country. He also offers the 3-year-old, 1,600-pound Berkless 25563, who is a good one. Nearly all of the mares will have colts at foot by Becouel. These mares are large and well broken and in just the condition to suit the farmers. In addition to the pure-bred stock offered there are a number of grade colts that will make very useful animals. Catalogue and full information may be obtained by addressing Frank Weinschenk, Klingman, Kans.

Mendenhall & Calvin, of La Cygne, Kans., could have no better recommendation for the Shorthorn herd, which they are just now starting, than the announcement of the fact that they have just lately purchased from the famous Shorthorn herd of D. K. Kellerman & Son, Mound City, Kans., the excellent bull, Advance Guard 149690, by Bridegroom 124526, out of Keepsake 3d Vol. 40. They also bought a yearling heifer sired by Gloster 137952, out of a dam by Lavender King 4th 108682. Mr. Geo. K. Kellerman writes that they are now having an abundance of rain, with crops and grass in the finest possible condition, and their cattle up to the highest standard. They have two or three young bulls ready for service that they are willing to sell, and any man who wants cattle, Shorthorn cattle, that are the real thing, bred in the purple, and with lots of good thick meat in their glossy hides, should go after some of these red or roan beauties that are to be found in the Vinewood herd. See their advertisement on page 572.

The Shady Brook herd of Poland-Chinas, located four miles north of Topeka and owned by H. W. Cheney, North Topeka, Kans., is in a flourishing condition. About 200 spring pigs have already put in their appearance and are calling for their daily rations. They come this year in litters of nine to a dozen and are vigorous and thrifty. Among the matrons of the herd is a full daughter of old Chief Tecumseh 2d, still producing nine pigs at a litter. Then there is a daughter of Perfect I Know with a fine litter, sired by Proud Perfection, and a litter of ten all alive and

growing that are extra fine. This litter will prove a bonanza for those breeders who are looking for an out-cross for the Tecumsehs, the Perfections, or the Chief I Knows. Mr. Cheney will be pleased to quote prices and give pedigrees of this litter as he has ransacked the earth to find something good enough and thinks he has it here. He has a fine lot of fall pigs of both sexes ready for shipment and will quote very low prices to early buyers. They are sired by a son of Missouri's Black Chief and it will pay any one who ever expects to own a good pig to write to Mr. Cheney for his prices.

Mr. Geo. Manville, proprietor of Sunny Hill Herd of pure-bred Shorthorns and Poland-Chinas, at Dearborn, Mo., writes us that he has a good trade in Shorthorns in Kansas, as well as at home. We note among his recent sales, on this side of the line, a young bull to Frank Gardiner and another one to P. E. Whitmer, both of Hamlin, Kans., and also one to Peter Stein at Leona, Kans. We understand that while these men paid a fair price for these bulls they were particularly well pleased, as they had visited a number of other herds, and had failed to find what they needed. Mr. Manville's herd-bulls now weigh 1,985 and 2,210 pounds respectively, the one of the latter weight is the 198th Duke of Wildwood and is just 3 years old. The owner has refused \$1,000 cash for him. Mr. Manville won at the St. Joseph Fair last fall, in strong competition with his cattle just off grass every ribbon that he contested for, including a special premium of \$100 given by the Stock Yards Company for which all breeds contested. Mr. Manville's herd-bulls are 198th Duke of Wildwood 148143, and Young Prince 127287, whose pictures now adorn our office. See his advertisement on page 569.

The National Hereford Exchange sale of Hereford cattle, to be held at South Omaha stock yards, Tuesday and Wednesday, May 27 and 28, bids fair to be a most interesting event. About 60 females of various ages will be sold, and over 125 bulls. It will be seen that this will make lively work for the two days. The celebrated auctioneers, Colonels F. M. Woods, R. E. Edmonson, Carey M. Jones, and Harry W. Graham, have been engaged, and T. F. B. Sotham, the well-known breeder and advocate, and the veteran importer and breeder, Geo. F. Morgan, will lend their assistance in the ring. Beginners in Hereford cattle have learned to appreciate the information that is given out with every animal sold by Mr. Sotham. The number of bulls to be sold insures "bull-buyers' bargains" for every bull-buyer, whether he requires a show animal worth \$1,000 or a cheaper bull at \$100. First-class animals are included, representatives of the best herds in Iowa, Nebraska, Missouri, Kansas, Illinois, and Indiana. We can not attempt to particularize and mention the stock of each contributor, as it would take up too much of our space, but we can heartily recommend all of them as worthy of patronage, and we have no hesitation in saying that this sale will afford an unsurpassed opportunity for all classes of buyers. Being the last important sale of Hereford cattle to be held in this country, those prospective buyers who through until the new grass comes, will find this their last opportunity to purchase at public auction, and in speaking of auctions would say that a sale such as this can hardly be over-estimated. The buyer wanting one or more animals might start out at considerable expense of railroad fare livery hire, and hotel bills, to visit from herd to herd making selections. A man might visit a dozen herds and find one or two animals in each herd suited to his wants, but price or number in any one herd might not suit and the expense of getting different animals together, might be an obstacle to prevent purchase, but in a sale like this where the surplus of a score or more herds is brought together and put up at auction, buyers can select and bid on those animals that suit them and when they are finished their purchases, they are also together at a place where there is every facility for prompt and economical shipment. This is the sale of all sales for beginners. Let no one who desires to purchase Hereford cattle at auction undervalue this opportunity. Catalogue can be had by addressing the National Hereford Exchange, T. F. B. Sotham, manager, Chillicothe, Mo.

Publishers' Paragraphs.

Any farmer who may be interested in securing a top buggy, a road wagon, a set of harness, a saddle, and save the middle man's profits should write to the Erhardt Wagon Manufacturing Company, Atchison, Kans., for a catalogue and prices. It will pay.

At Dawson, Minn., there was recently an event of importance unusual in any community. The occasion was the delivery of nearly one hundred Tower Riding Cultivators to the farmers of that vicinity, each of whom hooked his team to his new cultivator and joined in a procession which was some three quarters of a mile long, when they were escorted through the principal streets of the town by the local brass bands in a sort of grand march. The Tower factories are located at Mendota, Ill., and are now under the management of J. G. Tower & Sons Company. Their output of cultivators this year is very nearly double that of last year, and they are now averaging a car-load a day besides almost as much more shipped by local freight. These tools are thoroughly appreciated by the farmers of the corn-belt and a number of other "delivery days" similar to the one at Dawson are announced for the near future.

This will be the banner year for the dairy business in Kansas. This State ought to be the greatest butter-producing State in the Union and when the farmer develops his milk output to his capacity, it will be. Every new invention which saves labor or makes it more effective is a boon to humanity. The farm separator saves the farmers' wives and at the same time gets all the butter-fat out of the milk. It has come to stay. The hand separator system will be improved, but the separator will never go out of business. The money in the dairy business is in the make-up of the cow. Don't let a cow whose yield is fifteen pounds per day eat up grass that would keep an animal yielding forty

pounds per day, nor give to a scrub feed that would keep a prize milker in good condition. Don't thresh your wheat in a machine that loses half the grain: The Grout bill kills 'adulterated' butter, but only puts a tax of a quarter of a cent a pound on process butter where no chemicals are used. It finishes the adulterating business but does not hurt the bona fide process people. Country butter prices will remain practically as now, but better arrange to get creamery prices for your butter-fat. The people who plowed up the buffalo- and tame-grass of the Western plains are now wishing they hadn't. The grass which needs no cultivation, which grows if anything else grows and is as free as the rain is the most valuable feed in the world and makes the finest flavored butter on earth. Western ranchmen are buying separators and only a few years will pass before most ranch cows will be milked. Every tub should stand on its own bottom. If oleomargarine is a good thing, and no doubt it is, it will sell on its own merits and not on the merits of good cow butter, the most palatable and easiest digested of all foods known. The dairymen of Kansas ask no favors. They merely ask that their business be not destroyed by a cheaper imitation of their product. This is only justice.

For some time past the writer has been observing the vast amount of waste which is suffered every year in Kansas, by farmers who can not or will not use paint on their buildings and farm implements, as they should. Buildings should be painted frequently enough to protect the lumber from the action of the sun and wind and an enormous saving would be made if a little paint were applied each year to the wood-work of the various pieces of expensive farm machinery, which are now allowed to stand in the weather with no protection. The writer is satisfied that one of the explanations of this condition of affairs lies in the fact that ordinary paint is at once expensive, difficult to properly mix and apply, and still more difficult to preserve in shape for constant use. With the progress in modern science has come the discovery of many new things which serve to do away with former difficulties. Among these may be mentioned the newest discovery, which is called Magnite, and which is simply a cold water paint. This paint comes in the form of a dry powder which is made ready for use by mixing it with cold water. It is a genuine paint and not a kalsomine. It produces a hard, flexible enamel finish which will not rub, crack, or discolor with age. It can be applied over old oil painting or on any other surface and will not scale. As it is partially composed of asbestos fiber it is the best fire retarding paint known. It does not soften with age or moisture, and is made in every variety of color for internal as well as external use. But better than all else is the price, which is only from one-third to one-fourth of that of oil paints. Some of the largest hotels and wholesale houses as well as manufacturing plants in Kansas City are using this paint exclusively and when it comes to getting an equally good paint for 50 cents per gallon where you have been in the habit of paying \$1.50 or more per gallon, the advantages will be seen to be considerable. Write to Gustin & Boyer, 1408 West Eleventh St., Kansas City, Mo., for samples and color card, or send them \$1 and receive in return a ten-pound sample case, always stating whether you want it for interior or exterior use. See their advertisement on page 574.

One Fare for Round Trip for Memorial Day Exercises at Fort Leavenworth, Kans., May 30, 1902, via Union Pacific.

Ceremonies to be of imposing character. Remains of Gen. Henry Leavenworth, founder of Post, to be re-interred. Fort established April 27, 1827.

Many United States troops, different arms of service to be in parade. Fifteen hundred veterans, Civil War, commanded by Governor Rowland, Soldiers' Home, to be in line.

Governor of Missouri and staff to be in attendance. Also Federal and State officials.

Major-General MacArthur and General Bates will be in attendance.

Hon. F. Dumont Smith, of Kinsley, Kans., and General MacArthur, orators of the day.

All civic and military societies of Leavenworth to participate. Celebrated Fourth Cavalry Band from Fort Riley to be there.

Grand-daughters of General Leavenworth to be in attendance.

A trained choir of 250 voices will render vocal music for the occasion.

Fort Leavenworth is the most beautiful military post in the world.

The seat of army general service and staff college.

Many distinguished army officers to be present.

Gen. Funston writes that he will come if possible.

Tickets on sale May 29, 30, 1902. Limited to return May 31, 1902.

For full information call on your nearest Union Pacific Agent.

F. A. LEWIS, City Ticket Agent, 525 Kansas Avenue.

J. C. FULTON, Depot Agent.

Grocer Arrested.

At Dayton, Ohio, a grocer named John L. Schuster, has been arrested for selling Arbuckle's Ariosa Coffee. The Pure Food Department of Ohio claim that the glazing on Ariosa Coffee makes it unsalable in that State. This interests other grocers, because similar actions are likely to be brought against them for selling Arbuckle's, or any other coffee which has been glazed or coated.

The trial has been set for June 2. It is understood that the Arbuckles will send New York lawyers to defend the case. The Pure Food and Dairy Commissioner, Joseph H. Blackburn, will employ the best legal talent he can secure to represent the State's side of the case. The laws of Ohio are very strict in protecting the people against impure food. It is claimed that Arbuckle's Coffee is impure, because it is coated with a glazing that serves to cover up defects and make the coffee look better than it really is, and that this glazing is cheaper than coffee. Every one who drinks coffee will be interested in the outcome of this case.



Soft Harness

You can make your harness as soft as a glove and as tough as wire by using **EUREKA Harness Oil**. You can lengthen its life—make it last twice as long as it ordinarily would.

EUREKA Harness Oil

makes a poor looking harness like new. Made of pure, heavy bodied oil, especially prepared to withstand the weather.

Sold everywhere in cans—all sizes.

Made by **STANDARD OIL CO.**

Two and a Half Did It.
Wausau, Neb., March 13, 1902.
P. O. Box 347.
Dr. B. J. Kendall Company, Enosburg Falls, Vt.

Gentlemen:—You may remember I sent for your book, "A Treatise on the Horse and His Diseases," about a year ago. At that time I was using your Kendall's Spavin Cure on a bone spavin of about eighteen months standing. I used two and one-half bottles and now there is no spavin, not even a bunch. You may use my name among your testimonials, if you wish. Yours truly,
D. E. SEGER.

Myers' Pumps.

In buying a pump, like buying a horse or cow, it is most desirable to get a good one on the start.

You can't trade off an unsatisfactory pump every day, as you can a critter, and a pump is a friend that you meet many times a day for a good many years, so you are wise to select one that you are glad to meet.

Now, F. E. Myers & Bro., of Ashland, Ohio, have been making pumps for all purposes a good many years, and know how. Before you buy that new pump suppose you write to them, if your dealer does not sell their kind, and get their illustrated and descriptive booklets on pumps for your use.

They also manufacture other articles that may interest you—hay tools, store ladders, and the celebrated Myers "Stayon" Flexible Door Hangers. If you wish circulars regarding any of these things write them and they will be sent you.

PILES Fistula, Fissure, all Rectal Diseases radically and permanently cured in a few weeks without the knife, cutting, ligature, or caustics, and without pain or detention from business. Particulars of our treatment and sample mailed free.

Mr. M. McCoy, Goganc, Kans., Captain Company A., Fifteenth Indiana Infantry, writes: "Hermit Remedy Company, Dear Sirs:—I have doctored for piles since the Civil War—thirty-six years—and am now glad to report that after using your treatment for a few weeks I am completely cured. I believe you can cure any one, for a man could not be in a much worse condition than I was and live, and I am duly grateful to you. Respectfully,
"M. MCCOY."

We have hundreds of similar testimonials of cures in desperate cases from grateful patients who had tried many cure-alls, doctors' treatment, and different methods of operation without relief.

Ninety per cent of the people we treat come to us from one telling the other. You can have a trial sample mailed free by writing us full particulars of your case. Address, HERMIT REMEDY COMPANY, Suite 736, Adams Epress Building, Chicago, Ill.

(Talk No. 3.)

Difficult Cases

I take an especial interest in measuring and fitting eyes which are called difficult. I always like to hear a patron say that he has tried a dozen specialists, but could get nothing that suited him. I like to have these cases for several reasons. First, because when the correct lenses ARE selected they prove of untold benefit to the wearer. They make him see as he never did see, and give him relief from eye strain and discomfort. Second, because I take pleasure in hunting out complicated defects and solving difficult problems. I have a natural love for the optical science and enjoy working out intricate conditions. Third, because successful work where others have failed naturally adds to my reputation and helps in building up my business. If you have tried to get good glasses and have failed I want to see you. If you can be helped with glasses I have not the slightest doubt of my ability to fit you.

My exclusive attention is given to fitting glasses.

CHAS. BENNETT
OPTICIAN

730 Kansas Ave., Topeka, Kans.

ESTABLISHED 1870.

Horticulture.

Report of the Entomologist.

PROF. E. A. POPENOE, BEFORE THE STATE HORTICULTURAL SOCIETY.

THE CODLING-MOTH.

Though this subject has been presented so often before this society as almost to merit the action proposed by members in regard to pear-blight, that it be barred from future meetings, it is evident to the writer hereof that there yet remains opportunity for missionary work in the direction of inducing a wider popular knowledge of the codling-moth and its ways and the approved methods of its destruction. This effort must no doubt continue to be put forth for years to come. It is only by continued iteration that we may hope to overcome the popular objection to the warfare upon this insect; and, in my opinion, it is the duty, though it be a somewhat tiresome one, of the State Horticultural Society, as the exponent of advanced horticultural information, to keep the matter before the people.

The history of the apple crop for 1901 is practically a repetition of that of previous years; a fair product in quantity, reduced in marketable value by the work of this insect; the total loss no doubt greatly in excess of the expense of treating all the bearing trees in the State in a thorough and successful manner.

Judging by reports and letters of inquiry that yearly come to my table, I am satisfied that it is still necessary to present matters of the nature of fundamental information upon the habits of this insect and the methods of its subjugation, and to correct various popular delusions as to the efficacy of the spraying-engine where properly used. Some correspondents report success with the treatment, others failure, and others yet inquire if there is "any means of protecting the apple crop against this apple-worm." Some of the members of this society would as soon be without a cultivator as without a sprayer, and others still need to be brought to the light as to the proper application of this useful and valuable instrument. The consensus of expert opinion is with the former, and the doubters must remain in the constantly decreasing minority.

Too many of the small orchardists of our State are possessed of a half knowledge that is sometimes less safe than absolute ignorance. They "spray" without being certain as to substances, mixtures, times, and methods. They expect a single year's work to exterminate the insect, regardless of their neighbors' carelessness, and the result is consequently disappointing to them, turning them into opponents of all treatment. It is true that there exists well-digested and luminous text-books concerning this line of work, and numerous publications by the different experiment stations and by the United States Department of Agriculture, to be had for the asking; but these evidently are not available to all, or are entirely overlooked. It is for the benefit of those yet unsatisfied upon these points that the following résumé is presented, and in its preparation I have made free use of all sources of reliable information.

LIFE-HISTORY IN BRIEF.

The codling-moth belongs to a family of true moths, the most of which in their larval state feed upon leaves of various plants, many of them being injurious as leaf-rollers; the fruit-eaters, however, being very few, and practically no others than the present species being troublesome. It is one of the earlier orchard insects to receive notice in garden literature, and has had its due share of attention ever since the first account of it. According to Professor Slingerland's historical account, in Cornell Bulletin No. 142, among earlier suggested destructive measures were the scraping of the trunks of the trees, to remove rough bark, and the application of an alkaline wash; the banding of the trunk or the placing of cloths in the forks of the branches, to capture the worms; the spraying of the tree with whitewash, to fill the calyx cup and so prevent egg-laying at this point; various traps, including lights in the orchard; and finally, in 1878-'80, the use of arsenical sprays. Since the later date the efficiency of the arsenical spray has been the subject of repeated experiment in various quarters, and I think I may say without contradiction that,

in every case where proper conditions have been observed, the advantage of this treatment has been fully proven.

The moths appear in spring, having passed the winter as larvæ in cocoons spun the previous autumn in any convenient hiding-place, as the crevices in apple bins, boxes, or barrels, and out-of-doors under the scales of rough bark on apple-trees and in old birds' nests. The time of the general appearance of the moth corresponds fairly with the period of the fall of the bloom of the apple-tree, though under different circumstances, as special warmth or the reverse, specimens may appear slightly earlier or later. After a few days eggs are deposited on the young apple or on leaves near by. These hatch in a week or thereabout, the young worms making their way into the young apple mostly at the eye or blossom end, where they feed sometimes a few days before penetrating toward the core. Upon becoming full grown they work their way outward, and whether the attacked apple remains on the tree or falls to the ground, most of the worms abandon it and curiously make their way to the trunk, where they spin their cocoons, if shelter be afforded by scales of bark or by bands of cloth, paper or hay placed there for the purpose. The fact that many of the worms emerging from fallen apples find their way to the trunk to pupate is shown where three bands are placed upon the tree, when many cocoons will be found under both upper and lower bands, and but few under the middle one. The pupal state is assumed in the cocoons, and after about ten days, more or less, the moth appears. In the summer the worms transform at once after spinning the cocoon, but the worms that come out of the apple in the autumn remain in the larval state until within two or three weeks of the appearance of the apple bloom before transforming to pupæ. Occasionally a cocoon will be found in the basin of the apple next the stem. Numbers will be found in any bird's nest on the branches, many in the corrugations of the bark in the fork of the tree, and in any shelter on the ground under the branches, such as piles of boards or the like.

The moths emerging from the pupæ of the summer brood soon mate, and the females lay eggs as before, the second brood of worms occupying the now well-grown apples. Our investigations at the experiment station have shown us that, although, through the irregularity in appearance of the moths in spring, and apparently through the irregularity in time of full growth, there is no time during summer when worms may not be found in some of the apples, yet, through their appearance in greater numbers under the bands at certain times, it is evident that there are two and possibly three broods annually in our latitude, and this is probably true for the entire State. As before stated, the worms of the last brood pass the winter in the larval form, in cocoons, in any convenient place of shelter, and especially in crevices in bins, cracks in barrels, and corners in the apple room, where they have gone in the infested apple.

This, briefly, is the life-history of the codling-moth, and upon these facts is based the established treatment. In respect to the value of this treatment I am not so sanguine as those who state that after spraying not a single wormy apple can be found, where on adjoining trees not sprayed 90 per cent of the apples are wormy. But annual trial for twelve years has convinced me of the truth of the deductions from our first extended trial at the Kansas Experiment Station, namely, that under proper treatment the average difference in marketable fruit, in favor of the orchardist, amounts to a possible gain of 50 per cent of the entire crop, at an expense of application of a few cents per tree.

TREATMENT.

The treatment that we have pursued is as follows: Spray as soon as the petals have fallen (no delay admissible) with any good arsenical poison. Spray again at once, if the first application is followed by a good shower of rain, and, at any rate, give the trees a second spraying not later than ten days from the date of the first. This I recommend, because we have found, on similar trees, decidedly fewer wormy

Health for 10 Cents.

A lively liver, pure blood, clean skin, bright eyes, perfect health—Cascarets Candy Cathartic will obtain and secure them for you. Genuine tablets stamped C. C. C. Never sold in bulk. All druggists, roc.

apples where a second spray has been applied. On the other hand, a third application does not seem to show a sufficient decrease in affected fruit.

As to materials, I have found nothing better in general than good Paris green, in the proportion of an ounce to ten gallons of water, with the lime water from an ounce or more of fresh quicklime added. London purple we have entirely discarded, as being too variable a poison, and because of the frequent serious scalding of the foliage resulting from its use. Recent trials show favorably for the use of arsenate of lead.

In addition to the application of the spray, place bands about the trunk or large branches as soon as the first worms are leaving the fruit, the rough bark having been previously removed by the use of the tree-scraper. We prefer the band of carpet paper, eight inches wide at least, held to the tree by a broad-headed carpet-tack thrust by the thumb into the bark and through the overlapping ends of the band. Every eighth or tenth day the bands should be examined, and the captured larvæ and pupæ killed by any convenient means, the bands replaced, and so till the crop is off the tree. The number of worms so destroyed has equaled, in various tests, from 8½ to 44 per cent of the total of infested apples on the tree, a vast and profitable reduction in the number of insects that would otherwise affect the remaining fruits or the next crop.

As a third measure, see to it that no worms that go to the apple room with the mature fruit escape as gravid moths, to lay eggs in the orchard. Screens in the windows will pay for themselves, not by keeping other insects out, but by keeping the moths in. If every orchardist could be persuaded to adopt these defensive measures, there is not a shadow of doubt that many a load of apples that now goes to the cider-mill would go, rather, to the cold-storage house, with decided financial advantage to the grower.

THE GRAPE FIDIA, OR GRAPE-ROOT WORM.

From several sources I have received information and specimens that indicate that the grape fidia is occasionally the source of considerable injury to the vine in Kansas, and, although I have had little opportunity to observe in person the work of the insect, it seems desirable to bring together here an account of it, collected from available sources, for the benefit of our vineyardists.

The grape fidia is a beetle belonging to the family Chrysomelidae, to which pertain also such well-known pests as the Colorado potato-beetle, the cucumber-beetle, and the corn-root worm. The adult insect is one-fourth of an inch long, rather narrow, with slender, reddish legs and antennæ, the head usually drawn rather closely into the front of the thorax. In color the beetle is reddish brown, covered thickly with a coat of gray, scale-like hairs, obscuring the body color; but in old specimens this hairy coating is often rubbed off. The beetles are not very active, drawing the legs and antennæ close to the body and rolling off the leaf to the ground, where their gray color makes them hard to see. They feed upon the upper surface of the grape leaf, gnawing out patches of the leaf substance, and when numerous, as I have sometimes seen them, riddling the leaves or eating them to tatters. Besides the cultivated grape, they attack also the wild vine, and the Ampelopsis or Virginia creeper. Professor Riley records the beetle from the redbud, and I have taken it upon various woodland shrubs, but without evidence that it fed on them. Specimens of my collecting determine the appearance of the beetle throughout the month of June, and probably also throughout the greater part of July, in Kansas.

According to Professor Webster, of the Ohio Experiment Station, who has made the only published study of its life-history, the beetle lays its eggs during the months stated, on the vine, above ground, under shreds of old bark, the young hatching in a short time, and the young larvæ dropping to the ground, which they enter through the crevices, especially near the base of the vine, until they reach the underground parts; here they feed at first upon the tender fibers, but afterward on the bark of the older roots, which they ultimately denude completely of their bark. They pupate in the ground, the most of them remaining as larvæ within their earthen cocoons until the following June, when they transform rapidly to the adult.

It has been shown conclusively that the adults are readily destroyed by the use of an arsenical spray applied at the time of their first appearance. For the safety of the leaves of the vine, which are usually easily injured by unmixed

arsenic, an equal proportion of fresh lime should always be used in solution in the spray. In accordance with our experience with other insects, I suggest the application of Paris green in the Bordeaux mixture, which every well-informed grape-grower now applies as a preventive of vine diseases. The proportion of this should be about one ounce of Paris green to ten or twelve gallons of the Bordeaux mixture.

C. L. Marlatt, assistant entomologist of the United States Department of Agriculture, suggests the use of kerosene emulsion applied about the base of the vine at the time of the hatching of the young, to destroy them as they make their way into the soil.

Mr. A. Oberndorf, jr., Centralia, Kans., reports to me his use of carbon bisulphide injected into the soil about the base of the vine, as a means of destroying the larvæ after they have begun their work. It seems, however, that the earlier use of the poisoned spray on the leaves, by destroying the adults, would render these latter methods unnecessary. Thorough surface cultivation of the vines, by keeping the cracks of the ground closed, and by providing a dense layer of pulverized soil, is also serviceable as a means of checking the larvæ in their attempts to enter the earth.

This beetle should not be confused with the rose-chaffer or rose-bug, so called, for which it is often mistaken. In my experience, the genuine rose-chaffer is a much rarer insect in Kansas, though on apparently trustworthy evidence its occasional local abundance is reported, and we must reckon with it also as a destructive vine pest.

I shall be greatly obliged to any grape-grower who will forward to me specimens of any beetles of this character found injuring vine leaves, in order to determine more fully the distribution of these defoliators.

THE GRAPE-VINE FLEA-BEETLE, OR STEEL-BLUE FLEA-BEETLE.

The beetle here named is another insect that, while local in its appearance and not uniformly prevalent, proves very destructive when it does appear. It also does its work so rapidly that the damage may be done before its presence is noted.

This insect is a beetle belonging to the same family as the preceding, but to a different subfamily, the insects of which are distinguished by thickened hind thighs, associated with a habit of jumping like fleas when disturbed. The adult grape flea-beetle measures a little above one-eighth inch in length, is of an oval form, and in color is a polished steel-blue or purple-color. It is the only beetle of this character attacking the vine, though numerous species of similar appearance attack plants not related, one of them being occasionally a serious pest on young apple-trees. The parent beetle is the most troublesome form, eating the buds even before they expand, and attacking the young leaves as they unfold. The eggs are laid on the leaves, or on the buds from which the leaves appear. The young are like those of the common potato-beetle, in that they feed on the leaves with the adult, so that considerable injury is thus done the vine during the earlier weeks of its growth. The larvæ enter the soil an inch or two and there transform, the adults appearing toward midsummer, and feeding thereafter upon other plants, apparently, as well as the grape. These beetles are believed to hibernate in their condition as adults, and appear next spring, to repeat the injurious attacks of their predecessors.

It is evident from this account that this insect is open to destruction in a satisfactory way in two stages, as the beetles and the grubs feed alike exposed to the action of an arsenical spray; in accordance with our practice, this can be most economically applied with the Bordeaux mixture; the first application with the poison to be made at the opening of the buds, the second at the appearance of the larvæ.

My own experience with this insect has convinced me that where the beetle appears in numbers effective treatment may be needed to save the crop, if not the life of the vine. It is scarcely credible to one who has not witnessed the unchecked work of this insect what damage may result. Our trials of the capture of the beetles by kerosene pans has shown us that this method is much more expensive and less satisfactory than the application of Paris green.

Impurities in the blood produced by digestive disorders must be driven out before hot weather sets in, otherwise sickness will appear at a time when a strong, vigorous body is most needed. Picky Ash Bitters will expel all impurities and put the system in perfect order.

*This treatment was suggested by an experiment in which the calyx cup was covered with wax, and all fruit so treated found free from attack.

†Still offered for sale, and recommended by those financially interested, but actually worse than useless to the orchardist.

The Home Circle.

THE IRISH IMMIGRANT'S LAMENT.

I'm sitting on the stile, Mary,
Where we sat side by side
On a bright May morning long ago
When first you were my bride;
The corn was springing fresh and green,
And the larks sang loud and high;
And the red was on your lip, Mary,
And the love-light in your eye.

The place is little changed, Mary;
The day is bright as then;
The lark's loud song is in my ear,
And the corn is green again;
But I miss the soft clasp of your hand,
And the breath warm on my cheek;
And I still keep lis'nin' for the words
You never more will speak.

'Tis but a step down yonder lane,
And the little church stands near,
The church where we were wed, Mary;
I see the spire from here.
But the graveyard lies between, Mary,—
And my step might break your rest,
For I've laid you, darling, down to sleep,
With your baby on your breast.

I'm very lonely now, Mary,
For the poor make no new friends;
But oh, they love the better still
The few our Father sends!
And you were all I had, Mary,
My blessin' and my pride;
There's nothing left to care for now,
Since my poor Mary died.

Yours was the good brave heart, Mary,
That still kept hoping on,
When the trust in God had left my soul,
And my arm's young strength was gone;
There was comfort ever on your lip,
And the kind look on your brow—
I bless you, Mary, for that same,
Though you can not hear me now.

I thank you for that patient smile,
When your heart was fit to break—
When the hunger pain was gnawing there
And you hid it for my sake;
Bless you for the pleasant word,
When your heart was sad and sore;
Oh, I'm thankful you are gone, Mary,
Where grief can't reach you more!

I'm bidding you a long farewell,
My Mary, kind and true!
But I'll not forget you, darling,
In the land I'm going to;
They say there's bread and work for all,
And the sun shines always there;
But I'll not forget old Ireland
Were it fifty times as fair!

And often in those grand old woods
I'll sit and shut mine eyes,
And my heart will travel back again
To the place where Mary lies;
And I'll think I see the little stile
Where we sat side by side,
And the springing corn and the bright
May morn
When first you were my bride.
—Lady Dufferin.

The Farmers' Boys and Girls—Their Training and Education.

HENRY ISLEY, BEFORE BROWN COUNTY FARMERS' INSTITUTE.

We have had varied subjects under consideration during this session of our institute. When the knowledge we have gained here will be put to practice, it will fit us better for the duties of the hour or benefit us socially, or more abundantly replenish our exchequer; and we can reasonably expect some returns in the near future, at least a year hence. But the returns for duties well done in reference to the subject under consideration are shrouded in the thickly veiled future, say twenty or thirty years hence, yea, may reach an endless eternity. While we have been considering the train of thoughts to better ourselves and our own condition, we are now planning the motive power, yea the very engine, that is to carry the long train of our calling to the summit of success, when our life's work is done.

I know I speak the sentiment of every one in my hearing when I say, We want our sons and daughters so well prepared that they may be able to achieve greater successes than we could. I frankly admit that my tongue is too feeble to properly express the sentiments I feel on this subject.

Under the head of training I would say: Train them to be industrious, honest, frugal, observing, self-reliant, chaste, truthful, obliging; to shun idleness and bad company; in fact, train them in all that is implied in the decalogue; train them to live within their means; train them that they may early see the evils of intemperance, gambling, and other attending vices and shun them. In the latter case I may be radical when I say games of chance are too often the stepping-stone to the gambling table, where so many useful lives are plunged into the vortex of destruction.

In a whisper I would say to parents, lead your boys and girls rather than drive them; show them by example that they may understand the full import of the trite old saying, "What is worthy of doing at all is worthy of doing well." Live so yourselves that they will love and obey you, and revere your memory long after you are gone to the silent tomb. Train them to love their country, that they may early realize that this priceless heritage of our fathers can only be maintained by "eternal vigi-

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lance," and that the liberties we enjoy cost hundreds of thousands of lives and countless millions of treasures. Train them to remember their Creator in the days of their youth to the full extent in all that grand old injunction implies. To sum it up I would say, train them so that they may have a desire to be useful in this life whatever vocation they may follow, never forgetting that the crowning victory of a well-spent life is eternal happiness.

The minute details of the educational part of this subject I leave to my associates on this question who are better qualified than I to handle it. I will speak of it only in a general way. We must keep up with the times. What was good enough fifty years ago is insufficient to-day. The world moves; so must we. Some of us well remember the old log school-house with slab benches, where we received our first limited instruction. But conditions have changed. What may have been questionably sufficient then is certainly insufficient now. For myself I would say I never was sorry for the little I was permitted to learn when young, but often was sorry for the much I was not permitted to acquire.

I would say, let us give our boys and girls the best educational qualifications within our means and reach. It is possible that we may not all be able to give them an academic or collegiate education, but it seems to me there should be no excuse for all to have a thorough common school education. Let us fit them so well that they may be prepared to meet the battles of life manfully, that they may be prepared to do better than we can do, that they may know their calling, that they may solve the problems of life successfully and strive for still higher ideals in life, and the result will be more men and women who "dare to do right." A better citizenship will naturally follow, and our country will be safe. An unborn generation will follow your example and revere your memory. In imagination I lift the veil and look down the shadowy vista of the future, I fancy I can hear the chorus of an unborn generation, and the echo says: "Well done."

Afflictions of Jules Verne.

Jules Verne, "he of the great imagination," as the French call him, the writer of eighty fabulously successful novels, lies dying at his home in Amiens, old, blind, and penniless. His son is now in England with the hope of getting some of his father's admirers to place their names on a subscription list that the dying man may lack neither doctors nor medicine while he yet lives, nor a decent burial when he dies.

The world's farewell to the novelist must be to him a bitter contrast to its welcome and to the hospitality he enjoyed during his stay, from every point of view his life has been successful. He had fame in every civilized country, money in consequence thereof, the friendship of the great among his countrymen, health, and the love of a devoted wife. To-day the last alone remains to him. His fame diminished as his writing waned. He had spent his money and the faculty of making more departed with the advent of old age. His friends are dead and he has become blind.

Verne's books were a new sort, different in kind from any that had been published in France. The love motif was entirely absent. His heroes were adventurers, travelers, who nevertheless in contradistinction to the conventional daredevil, spent none of their time either in getting beautiful maidens into distress by breaking their hearts, or in setting them out of it by breaking their maligners' heads. The Verne adventurer-

ers fight and beat other men or more frequently nature. The laws of time and gravity are their pet antipathies. The talos were all pseudo-scientific. Their author succeeded in accomplishing the previously impossible, for he made the marriage between science and fiction, two creatures of an incompatible temperament, happy. At least so far as the lay world could judge.

But he himself was not made happy by his work. In his later days he has been frequently melancholy, because, as he continually said, he thought he had accomplished nothing worthy in literature. A favorite remark of his has been: "Je ne compet pas dans la litterature Francais" "I amount to nothing in French literature."

George Sand, the great woman novelist, admired his tales. After reading several stories which he wrote about balloons and flying machines she asked him to take another tack. One of his greatest novels, "Twenty Thousand Leagues Under the Sea," followed. Then one of Cook's tourist time tables gave him the idea of "Around the World in Eighty Days," which is the best known of his writings. Even to-day, when by means of the transcontinental railroads a traveler manages to make a circle around the earth in less than eighty days he is wont to boast of having defeated the resourceful Phineas Fogg.

Verne was not a traveler. He never tried to visit any of the places he wrote about. The majority of the sites he tells of are inaccessible to members of this age and generation, anyhow, and maybe their describer thought it was not worth while to go to the rest. He always said his hardest work came when he had to read up about the places he had not seen but would describe.

He worked hard, a fact shown by his output—eighty imaginative novels in less than forty years. Arising at 4.30 in the morning, he worked till 11 before eating; then came breakfast, and in the afternoon four or five hours more of work.

When the first draft of a book was done he corrected and recorrected until he had gone through the proof sheets seven or eight times. His publishers say that his last correction looks untirely unlike the first draft; that the outlines of the plot and even the names of the characters are changed.

Verne began to write at the age of 12. "Poetry it was then, and dreadful, too," he says himself. When graduated from college he went on the Paris bourse, and in the course of a few months' speculations lost considerable money. He was always glad of it, however, because he claimed that he was thus enabled to see at close range that nervous energy and lightninglike thinking which makes his heroes interesting.—Chicago Tribune.

Trust the Children.

There was once a little 6-year-old girl who had the habit of telling wonderful stories of things no one but herself had ever seen or heard.

"As I was walking along," she said one day to her mother, "a golden egg dropped out of a tree and fell down upon the stones. The egg was broken to pieces, but a beautiful bird with wings of gold, and little stars for eyes, flew up before me, away into heaven, and sang, 'Little girl, I love you; I love you!'"

"Oh, what a beautiful story!" said her wise mother, "I will get a pencil and paper and write it out. When father comes home I will read it to him, and perhaps to-morrow you can tell me another."

This delighted the little girl, and when her father, who was also wise, clapped his hands and pronounced it an

"excellent story" her satisfaction was complete.

The next day another story, longer than the first, and, if possible, more marvelous, was told, and again written out by her mother for her father's pleasure, and the daily story became a habit of the little girl's life. After awhile she learned to write, and was then able to tell her own stories on paper. And when she grew to be a woman and took up her life-work, which was that of telling stories altogether, she gave the credit to her mother, who had so wisely developed and cultivated her inborn talent.

A stupid and impatient mother might have said to her child, "That is not true; no such thing ever happened, and you have told a lie." Or a tender mother, who was yet stupid, might have said, "My little girl must not tell things that never happened, for that is telling a lie."

The world in which a little child finds himself is a great wonderland, not at all like our world. He has never measured and weighed relative shapes and sizes, and so things look bigger and more important to him than to us. If imagination and the creative faculty be latent within him, possibilities of things unseen and of actions unexperienced loom up before him, and he is not unlikely to make himself the hero of some thrilling incident that perhaps has no foundation outside of his own fertile brain.

Just here is the place where discrimination on the part of parent or teacher is plainly in order. The mistake is often made of taking it for granted that the child expects you to believe him, when the chances are that he does not.

Praise his little story, and encourage him to tell new ones, appearing meantime to consider it as told simply for your amusement, with no intention to deceive. Perhaps there is no one of us but that can point to some friend who has the faculty of drawing out the best there is in us. For the time being we are what that friend has made us, and we go from him happily conscious of the fact.—Lilla A. Whitney, in Farm and Fireside.

Try a Glass of Water at Bedtime.

The human body is constantly undergoing tissue changes. Water has the power of increasing these tissue changes which multiply the waste products, but at the same time they are renewed by its agency, giving rise to increased appetite which in turn provides fresh nutrition. Persons but little accustomed to drink water are liable to have the waste products formed faster than they are removed. Any obstruction to the free working of natural laws at once produces disease. People accustomed to rise in the morning weak and languid will find the cause in the secretion of wastes, which many times may be remedied by drinking a full tumbler of water before retiring. This materially assists in the process during the night, and leaves the tissues fresh and strong, ready for the active work of the next day.

Gavitt's \$550 Prize Offer.

An interesting contest is at hand. Our readers will not fail to notice the display announcement on page 644 of the W. W. Gavitt Medical Company, Topeka, Kans., who offer \$550 in prizes for a list of words formed by using letters occurring in "Gavitt's System Regulator is Guaranteed."

The W. W. Gavitt Medical Company is a firm of manufacturing chemists of Topeka, and have built up a tremendous business during recent years. No firm in Topeka receives a larger daily mail than this house. Their business has grown to such an extent that they occupy three buildings, each of which is taxed to its fullest capacity. Every reader of the Kansas Farmer should feel a special interest in this Kansas institution and enter the contest at once.

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is a splendid summer resort, high up in the Sacramento Mountains, in New Mexico, on the El Paso Short Line (Great Rock Island Route). If you are looking for rest and recreation, you can find them at Cloudcroft. The mountain breezes, fresh with the fragrance of the great pine forests, bring health and cool nights. Cloudcroft gives all the pleasures and benefits of a sojourn in the mountains. Its story is best told in a handsome booklet just published by the Great Rock Island Route and which can be had free on application to E. W. Thompson, A. G. P. A., Topeka, Kans.

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The Young Folks.

Conducted by Ruth Cowgill.

NOTHING IS LOST.

Nothing is lost; the drop of dew
Which trembles on the leaf or flower,
Is but exhaled to fall anew
In summer's thunder shower;
Perchance to shine within the bow
That fronts the sun at fall of day;
Perchance to sparkle in the flow
Of fountains far away.

Nothing is lost; the tiniest seed
By wild birds borne on breezes blown
Finds something suited to its need,
Wherein 'tis sown and grown.
The language of some household song,
The perfume of some cherished flower,
Though gone from outward sense, belong
To memory's after hour.

So with our words—or harsh or kind,
Uttered, they are not all forgot;
They have their influence on the mind,
Pass on, but perish not.
So with our deeds—for good or ill,
They have their power, scarce understood;
Then let us use our better will
To make them use our better will!

—Anon.

Eliza Green Horn's Observations.

The lot of an uninformed observer is seldom an enviable one, especially if he be afflicted with an unwary tongue and a credulous mind. The above observation was occasioned by some reflections which forced themselves upon me after a visit of two weeks in the country, from which I returned a sadder and a wiser woman.

Some kind friends in Ellsworth County invited me to visit them in their farm home, which invitation was accepted with pleased alacrity, never suspecting that their sole object in extending it was in order that they might vary the monotony of a long summer by poking fun at me. I had some difficulty in deciding just what clothes to put into my trunk, so I took all I had, in order to be certain of being appropriately clothed for every occasion, for it is one of my maxims never to be unprepared for anything. By the time I was ready to return home I had learned to look upon that trunk with disgust for I found that I had clothes appropriate for every occasion but the one in hand.

Taking the train, I found a seat by an open window, in order to see all the strange things which I had been lead to expect, as they appeared.

The train whirled along past field after field of blowing grain. I did not know what kind of grain then, alas for my stupidity! but I do now, indeed I consider myself now quite a well-informed person as to grain-fields. But as I looked out over the rolling grain-fields, stretching as far as the eye could reach, I thought that never in my life had I seen anything lovelier. Here was the dark velvety, blue-green of the alfalfa, next to it might be the glorious vivid green of the oats or the shining, yellow-green of the moving cornstalks, while far off against the horizon would be perhaps a single tree, overlooking all the glory of the fields; or as the train sped on, one might see a low range of green-covered hills meeting the horizon.

Suddenly I noticed that the train was slowing up until soon it came to a stand-still.

"Oh, what is the matter?" I asked wildly of a fellow passenger. "Are we being held up by desperadoes?"

"I don't know," said he, becoming grave at once at the suggestion. "Perhaps I would better go out and see."

"Oh, do," I entreated. "And don't let them come in here. Tell them I have nothing but a nickel and my return ticket and they are welcome to those if they only won't come in."

I was getting more and more terrified as I talked, for the man looked so solemn that I knew he suspected grave danger. He went out at once leaving me with cold shivers running up and down my back and cold sweat trickling down my cheek—it was a very warm day, however, so that the sensation was rather pleasant than otherwise.

He soon returned and as soon as he stepped into the car, I knew something terrible had happened.

"Oh, what is it? What is it?" I shrieked, rushing to him and clutching his arm. "Are we held up?"

"We are being held up by grasshoppers."

"Grasshoppers?" I was ready to faint, visions of being eaten alive by the terrible little beasts coming before my eyes.

"Yes," he said kindly. "The little pests are very thick this year, particularly farly along the railroad, and as the oil on the tracks and in the wheels, so that the train is temporarily dis-

abled. I suppose we have mashed thousands of them to-day."

"Oh," I said, faintly, "poor grasshoppers!"

The train soon started on, however, though I shuddered as I thought of the destruction we were dealing to the defenceless insects, and we arrived at T— at about 4 in the afternoon. I got out and looked anxiously around for my friends who had promised to meet me. I saw no one whom I knew, but accosted an old man who I thought might be their father.

"I beg pardon—is this Mr. Markham?"

"Well, no I reckon 'taint," he said, as if there might be some doubt about it.

"This is T— isn't it?" I asked, a sudden suspicion darting through my mind that I had got off at the wrong place.

"Oh, yes, this is T— all right, but I ain't Mr. Markham."

"How far does he live from here?"

"About five miles. You can find it easy. You just take that road south till you come to a little white house, then you go west till you get there."

"I guess that is all I can do," I said. "Thank you."

Five miles! I was ready to cry, but decided to wait until I had walked a mile or two, when I would be out of sight and hearing.

I struck out, in the blazing hot sunshine, wondering if I would drop by the wayside. I bit my lip to keep the tears back and tramped bravely along, my dress trailing in the dust. I walked, and walked, and walked, until I felt as if I were in a tread-mill and would have to keep on forever, taking steps but never getting anywhere.

Presently I heard wheels coming behind me at a rattling pace. At first I thought it must be my friends who had got there too late. Then I thought that could not be for I should have met them since I was in the road on which they must come. Then I thought it was a tramp who would rob and murder me, forgetting that tramps do not usually ride in spring wagons. But I was too tired to care, so I trudged doggedly on.

The wagon overtook me. There was a rough looking man sitting on the seat.

"Want a lift?" he said.

I trembled all over—by this time I was sure he was a tramp. What in the world could he mean by a lift? Perhaps that was the way of demanding my money or my life. However, the best way was to brave it out, so I looked as fearless as I did not feel and answered haughtily in a voice which I vainly endeavored to make bold and steady.

"No, sir; I don't care for any. Please pass on and leave me to my reflections."

The man stared, then passed on muttering something about wishing me joy in my reflections. I felt that I had acted with wonderful courage and presence of mind, but when I told my adventure that evening as I sat with my friends watching the stars, they laughed so that they could hardly tell me that my "tramp" was their own hired hand, "as good-hearted and genial a fellow as you'll find anywhere."

Such was the beginning of my visit and from the first minute until the last I was tormented and harassed, circumstances seeming to have entered into a conspiracy with my friends to make me seem ridiculous. From the first morning when I called all the family to rescue me from the sleepy old cow, who had happened to glance toward me as she stood peacefully chewing her cud, till the last day when it took the hand an hour to hitch up because I had helped to unhitch the night before, and had taken the whole harness to pieces in my desire to do it thoroughly. I was laughed at and patronized, until I had no spirit whatever left.

I suppose it was an education for me, but some things which I learned there I have since found to be untrue. For instance, I was taught that pumpkins grew on trees, which I have since found to be absolutely false. They grow on vines. The Markhams had trained a pumpkin vine to grow up around a peach-tree so that when the pumpkins came they hung upon the branches as if they belonged there. My friends have since confessed that such was the case, though at the time showed no remorse in deceiving me.

I have since wondered how many other deceptions they perpetrated. I have reason to suspect that they were not always entirely trustworthy in the information they gave me, though I am sure of some of the things I learned, because of the doleful experience they gave me.

As I said at first, I returned home a sadder and a wiser—much wiser—a man.

ELIZA G. HORN.

Roger Williams.

History has been niggardly in its treatment of brave, gallant, true, good Roger Williams. There never lived a grander man since the crucifixion. To be sure, his grandeur did not partake of the tinsel and blare of the soldier. He never killed men by the score; he rescued them. He went not forth gaudily caprisoned, swaggering and swearing and shooting; he slipped through the forests and swam the icy rivers, and by his wise pleadings saved the shedding of innocent blood. Had there been no Roger Williams there would have been no Pilgrims. He was their saviour on more than one occasion, yet they drove him forth and would kill him simply because he would not pool his conscience with theirs.

From out the chaos of bigotry and superstition; of ignorance and intolerance; of religious fanaticism and mental slavery, looms the saintly—nay! sweetly-tuned, conscience-following, intensely human Roger Williams—the beacon and hope of true freedom and true liberty. He was not only ahead of his time, he was abreast of any time. No man comes nearer being divine than when he is honest with himself. Conscience is the only true counselor—it is God's monitor in the human heart, and no man can be a heretic who follows its lead, despite churchly denunciations.

Creed is despotic ever, and the Puritans, having decided that their creed was infallible, became ardent followers of their master. Roger Williams knew no creed, but followed the dictates of his conscience, and as his conscience was ever present and ever ready, each question of morality or right living was settled on its merits as it came up.

Roger Williams was born in Wales in 1600, and died in his adopted home eighty-five years later. He was educated at the famous Charterhouse, and the University of Cambridge. After graduation he took orders in the Church of England. But he was an eager seeker after truth, and soon decided that the new cult, sneeringly called the Dissenters, were nearer the truth than his own unbending, creed-ridden church. As soon as he made this decision he left the sect with which he had thought to spend a lifetime and enlisted with the persecuted party. Of course, he was denounced by the church as a backslider and a heretic. Denunciation seemed to be a very potent weapon of the church in those days, notwithstanding denunciation always has been and always will be, a boomerang.

He landed in the New World in 1631, with the Massachusetts colony, but differences arose and he went to the Puritans at Plymouth, where he lived a noble, useful life for about two years. His old companions at Boston and Salem grieved over his banishment, and could not rest until they induced him to return in 1633. The truth is that they needed his great ability in helping decide many important questions that were beginning to harass and trouble them. But he was again banished in 1636 because he opposed with all his force and eloquence the wedding of church and State. He would not acknowledge the right of the magistrates to compel all to attend church on the Sabbath; to become church members before being eligible to political preferment. "But the ship must have a pilot," argued the magistrates.

"And he holds her to her course without bringing his crew to prayer in irons," retorted Williams. "We must protect our people from corruption and punish heresy," said they. "Conscience in the individual can never become public property, and you, as public trustees, can own no spiritual powers," answered he. "May we not restrain the church from apostasy?" they asked. "No," was the rejoinder, "the common peace and liberty depend upon the removal of the yoke of soul oppression."

He was banished from the colony for opinion's sake, and serenely accepted the doom. Banishment meant exile from

all the haunts of his own race; so, trusting in God, and not worried over-much as to his fate, he departed into the wilderness.

He had always been an ardent and consistent champion of the rights of the natives. At one time he wrote a pamphlet in which he uncompromisingly declared: First, that the soil belonged to the Indians; second, that the settlers could obtain a valid title only by purchase from the Indians; third, that accepting a deed for the land from a mere intruder like the King of England was a sin requiring public repentance.

He had been the native's unpaid friend so long and in so many ways that he was regarded highly by them and so it was but natural that he, being now an outcast from the society of his own people, should turn to his colored friends. He reached the home of Massasoit, chief of the powerful tribe of Narragansetts, after a perilous tramp through the wintry woods, and was made welcome. Like the simple people that they were they did not perceive the awful taint of heresy about him, nor were they fearful of heretical inoculation.

During the balance of the winter and spring of this year he was idolized and made most comfortable by Massasoit, Pokanoket, and Canonius. Many were the assemblies called to listen to his counsels and wise was the teaching. He treated their errors lovingly and bound them closer by his absolute fairness. In the summer his Indian friends gave him a birch bark canoe, and he glided down the river to the present site of Providence. There he built his home—on lands the Indians wanted to give him, but which he paid for—which soon became, and so remained during his life-time, "A shelter for persons distressed for conscience."

And here rocked the cradle of human liberty and freedom of thought. Here truth was counted king, and the searching after truth was royal occupation. Here creed merged into Christian charity, and the judgment of heresy was left to God. The oppressed sought this asylum in the wilderness and had their hurts healed. Here conscience developed and character bloomed. The Indians were treated as brothers and between the red men and the whites there sprung up a lively regard and enduring respect that continued forever.

Had the Puritans, the Dutch, the Spaniards, been actuated by Williams' Christian philosophy, there would have been no Indian wars and no Indian problem; no Century of Dishonor, and no annihilation of a race.—From "The Story of the Native American," by S. M. McCowan, in Chillico Farmer and Stock Grower.

Beauty of the Imperfect.

Most of us fret over our faults and failings. Our imperfections discourage us. Our defeats oftentimes break our spirits and cause us to give up. But this is not true living. When we look at it in the right way, we see that the experiences that have been so disheartening to us really contain elements of hope and encouragement.

There is beauty in imperfection. Perhaps we have not thought of it, but the imperfect in a good life is oftentimes the perfect in an incomplete stage. It is a stage of progress, a phase of development. It is a picture before the artist has finished it. It is beautiful, therefore, in its time and place.

A blossom is beautiful, although compared with the ripe, luscious fruit, whose prophecy it carries in its heart, it seems very imperfect. The young shoot is graceful in its form, and wins admiration, although it is but the beginning of the great tree which by and by it will become. A child is not a man. How feeble is infancy! Its powers are undeveloped, its faculties are untrained—it is yet without wisdom, without skill, without strength, without ability to do anything valiant or noble. It is a very imperfect man. Yet who blames a child for its immaturity. There is beauty in its imperfection.

We are all children of greater or lesser growth. Our lives are incomplete, undeveloped. But, if we are living as we should, there is real moral beauty in our imperfection. It is a natural necessary process in the unfolding of the perfect. A child's work in school may be very faulty, and yet be beautiful and full of encouragement and hope, because it shows faithful endeavor and worthy improvement. A writing-teacher praises his scholars as he inspects the page they have written. He tells them, or certain of them, that they have done excellently. You look at their work, however, and you find it very faulty indeed, the writing stiff and irregular, the letters rudely formed, and you can not understand why the teacher should speak so approvingly of the

The EGGS

the coffee roaster uses
to glaze his coffee with—
would you eat that kind of
eggs? Then why drink them?

Lion Coffee

has no coating of storage eggs,
glue, etc. It's coffee—pure,
unadulterated, fresh, strong
and of delightful flavor
and aroma.

Uniform quality and
freshness are insured
by the sealed package.

\$550.00
GIVEN AWAY

GAVITT'S SYSTEM REGULATOR

IS GUARANTEED.
Contest Closes July 1st, 1902.

\$550.00
GIVEN AWAY

YOU MUST SECURE A COUPON. READ CONDITIONS.

"Gavitt's System Regulator is Guaranteed." OFFER.

PRIZE
OFFER

FIRST PRIZE. \$30.00 in cash will be given to party sending in the most words formed by using letters occurring in "GAVITT'S SYSTEM REGULATOR IS GUARANTEED."
SECOND PRIZE. \$25.00 in cash. THIRD PRIZE. \$10.00 in cash.
FOURTH PRIZE. \$5.00 in cash. NEXT TEN PRIZES, \$1.00 in cash each.
NEXT TWO HUNDRED PRIZES, A \$1.00 Box of Gavitt's System Regulator each.
NEXT FORTY PRIZES, 50 cts in cash each.
NEXT ONE THOUSAND PRIZES, A 25c Package of Gavitt's System Regulator each.

PRIZE
OFFER

1,254
PRIZES.

CONDITIONS.
FIRST. In order to enter this contest, the contestant must have a PRIZE COUPON, which can only be secured by buying a box of our Gavitt's System Regulator, from our agents or from us direct. Price \$1.00 per box for nearly one year's treatment. Guaranteed to cure all Blood, Kidney, Liver and Stomach troubles or money refunded.
SECOND. The prize period will close on July 1st, 1902.
THIRD. In case of a tie, the party who sends in the words first will be eligible to the best prize.
FOURTH. The words must be numbered consecutively.
FIFTH. You may use the letters occurring in Gavitt's System Regulator as often as you like.
SIXTH. We expect a great many contestants and would thank you to write the words very plainly, giving your name, post office address, etc., on coupon, and also on the list. Send the coupon and list direct to us at once.
Secure a \$1.00 Box of our Gavitt's System Regulator, tablets chocolate coated or other forms and enter Contest at once.

1,254
PRIZES.

IMPORTANT NOTES.

For our medicine and coupon, apply to any of our agents, or if we have no agent at your place send direct to us.
If the party buying the medicine does not care to enter the contest, they may sell or give their coupon to another. The coupon shall be evidence that there was a sale made by our agents or ourselves, therefore we will honor each coupon received, providing words are written plainly.
Any number of people may help select the words, but only one name must appear upon the coupon.
Give the coupon to your son or daughter—they will have plenty of time to form the words in the evenings, and with a little help from you, they in all probability, will secure one of the prizes.
You have 1,254 chances of receiving a prize; with a little work and thinking you should get one of the best.

W. W. GAVITT MEDICAL CO.

MANUFACTURING CHEMISTS.

HARRY E. GAVITT, Mgr.

Three Buildings.

TOPEKA, KANSAS, U. S. A.

Agents Wanted in all Unoccupied Territory.

scholars' work. Yet he sees real beauty in it because, when compared with yesterday's page it shows marked improvement.

We usually think of defeat as dishonorable. Sometimes it is. It is dishonorable when it comes through cowardice or lack of effort. We ought to train ourselves to be overcomers. But when one has bravely done his best, and, after all, has gone down in the struggle, there is no disgrace in his failure. A twofold battle is going on whenever a man is fighting with hard conditions or adverse circumstances, and it is possible for him to fall in one and be victorious in the other. Too often a man succeeds in his battle with the world at the cost of truth and right. That is defeat indeed, over whose dishonor Heaven grieves. But when a man falls in his struggle with circumstances and yet comes out with his manhood untarnished he is a conqueror indeed, and his victory gives joy to the heart of Christ. In such failure there is glorious success, and no dishonoring of the life in Heaven's sight.

Defeat is the school in which most of us have to be trained. In all kinds of work men learn by making mistakes. The successful business man did not begin with success. He learned by experience, and the experience was very costly. The true science of living is not to make mistakes but not to repeat one's mistakes. Defeat, when one has done one's best, and when one takes a lesson from his defeat, is not something to be ashamed of, but something to be glad for, since it sets one's feet on a little higher plane. Defeat which makes us wiser and better is a blessing to us. We owe more to our defeats, with the humblings of the old nature, the cleansing of motive and affection, and the deepening of trust in God, than we owe to the prouder experiences which we call our successes.—Selected.

QUESTION BOX.

The Boers.—Are the Boers entirely of Dutch extraction? STACEY SMITH.
It is said that the Boers have as much French blood in their veins as Dutch, though they seem to possess the traits of the Dutch to the entire exclusion of the characteristics commonly ascribed to the French.
Roosevelt's cabinet.—I will impose upon you with three more questions, and I believe that you will agree with

me that the "question box" is a great convenience to me. I do not understand why more of the Kansas boys and girls do not utilize the question box. Your answer to my last question was read with interest, and this time my questions are:

How should the question box be addressed?

Who is the author of "A Son of the Soil"?

Please name President Roosevelt's cabinet officers, and give office held by each. J. R. LA MONT.

Letters for this department should be addressed to Miss Ruth Cowgill, care KANSAS FARMER. We are very glad indeed to be of service to you.

All unsigned articles on this page are written by the editor of Young Folks' department.

The members of Roosevelt's cabinet are: John Hay, of Indiana, Secretary of State since 1898; Elihu Root, of New York, Secretary of War since 1899; James Wilson, of Connecticut, Secretary of Agriculture since 1897; Ethan Allen Hitchcock, of Alabama, Secretary of Interior since 1899; Wm. H. Moody, of Massachusetts, Secretary of Navy since 1902; Leslie Mortier Shaw, of Iowa, Secretary of Treasury since 1902; Philander Chase Knox, of Pennsylvania, Attorney General since 1901; Henry C. Payne, of Massachusetts, Postmaster General since 1902. They each draw a salary of \$8,000.

An Illinois justice decides that a man's wife is entitled to the money paid for eggs laid by their hens.

A Recipe for Happy Living.

Written three centuries ago.
"Three ounces are necessary, first of patience;
Then of repose and peace; of conscience
A pound entire is needful
Of pastimes of all sorts, too,
Should be gathered as much as the hand can hold;
Of pleasant memory and of hope, three good drams
There must be at least. But they should be moistened by
With a liquor made from true pleasures which rejoice the heart.
Then of love's magic drops a few—
But use them sparingly, for they may bring a flame
Which naught but tears can drown.
Grind the whole and mix therewith of merriment an ounce
To even. Yet all this may not bring happiness.
Except in your orisons you lift your voice
To Him who holds the gift of health."

FOR THE LITTLE ONES

HIS NEW BROTHER.

Yes, I've got a little brother,
Never asked to have him, nuther,
But he's here.
They just went away and bought him,
And, last week the doctor brought him,
Weren't that queer?
When I heard the news from Molly,
Why I thought at first 'twas jolly,
Cause, you see,
I s'posed I could go and get him
And then mama, course, would let him
Play with me.
But when I had once looked at him,
"Why" I says, "Great snakes, is that him?
Just that mite!"
They said "Yes," and "Ain't he cunning?"
And I thought they must be funnin',—
He's a sight!
He's so small, it's just amazin',
And you'd think that he was blazin',
He's so red.
And his nose is like a berry,
And he's bald as Uncle Jerry
On his head.
Why, he isn't worth a brick,
All he does is cry and kick,
He can't stop;
Won't sit up, you can't arrange him—
I don't see why pa don't change him
At the shop.
Now we've got to dress and feed him,
And we really didn't need him
More'n a frog;
Why'd they buy a baby brother
When they know I'd good deal ruther
Have a dog?

Frogs at Church.

I think I shall tell the little ones a fairy story. A fairy story, you know, is a story that is not at all true, but we pretend that it is, just as a little boy pretends that his broom-stick is a real horse, or a little girl pretends that her doll is a live baby. So we will play that this story is true.
Down by the creek there lived a great many frogs. At night you can hear them singing and talking at a great rate. Sometimes it is the mother-frog crooning a low sleepy lullaby to her baby-frog; sometimes it is a handsome young frog serenading his lady-love; sometimes it is the father-frog crooking a merry work-song, as he goes out to find a living for his family, and once in awhile, you hear the doleful song of some old frog who has the blues.
Once a wise old owl heard them all singing at once, so he thought he would go near enough to see what was going on. When he at last reached the spot, he saw something that no one else has ever seen. It was the frogs at church! And who, do you suppose, was the preacher? It was a jack-in-the-pulpit, standing up stiff and solemn in his fine

green pulpit, while the frogs sat around on the toad-stools. The gnats were the choir, though you could hardly hear them sing for the frogs sang so loudly! A funny grand-daddy-long-legs was the chorister, moving one of his long antennæ up and down to mark the time of the music. You would never guess what furnished the light for the church—just bright little fire-flies!

The owl sat perched in the tree high above them, looking down at them with great interest out of his great wise-looking eyes. He could see everything around there much better than the frogs, and after awhile he thought he saw something moving slyly in the tall brush at the side of the frog's church. He wondered who it could be, so he called out loudly, "Who-oo? Who-oo? Who-oo?"

Then the old lady frogs began to feel uneasy. "Did you hear that strange sound?" whispered one old lady frog to another.

"Yes, indeed," answered the other, hoarsely, "it made me think of my dear children whom I left at home—I think I shall go at once to see about them." And she hopped hastily away.

"Who-oo? who-oo? who-oo?" asked the owl more loudly than ever.

It frightened the good frogs so much that they did not wait for the sermon at all, but all hopped excitedly away.

And it was well that they did, for a little black dog came rushing out after them, barking and yelping fiercely enough to scare a poor frog to death. But he found nothing there but the preacher standing straight and solemn in his place, and he growled and barked discontentedly to himself, for he would not harm a jack-in-the-pulpit. And as he stood there growling and snarling, the owl said once more:

"Who-oo are you-oo? Who-oo are you-oo?"

And the dog felt frightened—I think his conscience hurt him—and he turned and ran home as fast as he could go, and never came to frogs' church again.

But the owl often came and sat on the branch watching for dangers to the good frogs and saving them from many a danger. But they never knew what a good friend he was, but always hastened away when they heard his melancholy voice asking "who-oo? who-oo-oo?"

Lacking in sense! The man who uses a "moth trap" instead of a spray pump after all that has been said about it.

Miscellany.

Sweet Milk for Sorghum Poisoning.

Through the courtesy of Secretary Coburn we are enabled to present the following:

Hon. F. D. Coburn:—Having received your valuable "Kansas Wheat Growing," reminds me of a duty I owe to my fellow farmers, and stockmen, as I don't think it is fair to receive information without giving any, in position to do so. I have in mind a remedy for sorghum poison in cattle. Perhaps many acres of this forage will be planted this spring in our State, and it is a fact it is very dangerous if eaten green by cattle, so I will give my experience.

Wishing to sell a bunch of young cattle from grass in the fall, we in August turned them in a field of wild grass that had not been grazed all summer. The grass was extra good and there was plenty of it. The cattle were on it day and night, so never got hungry.

In September a neighbor came and bought forty 2-year-olds. After the bargain was closed he remarked, "To-day is Thursday. I will get those cattle on Monday. Whatever die before Monday die for you!" "All right," I answered, laughingly, not expecting to lose any within three days. The cattle had never been out of that field. It was fenced by four strands of tight wire. On Saturday we were haying and one of the boys plowed on a stubble field adjoining the pasture. Alongside the fence was a narrow strip of sorghum, about four rods wide, beside which the boy passed every round he made on the forty-acre field. Therefore he could not help seeing the cattle. About five o'clock in the afternoon he came galloping to where I was, shouting, "The cattle broke in the sorghum. I drove them out at once, but one steer is very sick!" I at once gave him one pound of Epsom salt as a drench, and trocharred the stomach to let out the gas, but he was dead soon. Then I told the boy to drive the cattle in another pasture a distance of one-quarter mile. Another one fell and was dead in a short time. (Had given him lard and soda, but did no good.) When I came to the house and reported the sad news to my companion on life's journey, she, a mother of a large family and an experienced nurse, said, "If this should happen again let us try sweet milk, because that is an antidote for many poisons." "Good," I answered, "but I'll try not to have occasion to use it." And for months did not allow any cattle on the side of the farm where that sorghum was.

Late in the fall, after it was cut and cured, the milk cows were pastured on wheat fields close by, and to save them too much walk I drove them to the corner of the pasture (where they laid down) away from that sorghum patch, where a little second-growth had started, and went home for my meal. Finding my family ready at the table I at once sat down. After not more than thirty minutes my sons went out; one started to where my pony was, jumped on and hurried to that dreadful sorghum patch. The cows had broken the wire, and fourteen were sick. I at once ordered all hands to milk, and, getting a bottle, poured in sweet milk. I used all the milk the cows gave, about two cans, but after they got two bottles apiece they got better, save one which got no milk on account of being so far away. She was dead before I got to her.

W. M. BERCKER.

Sylvan Grove, Kans., May 12, 1902.

Catch Snakes.

EDITOR KANSAS FARMER:—If the farmers want to get rid of the gophers that are destroying their alfalfa catch snakes. I don't mean the kind that Mrs. Nation is trying to "hatchet" away nor the new corn slicker "snakes," but just the every-day, old-fashioned snakes—blacksnakes or bull-snakes—any big snakes.

We can kill gophers by poisoning them with strychnine, using a very small crystal of the poison very carefully placed into pieces of sweet potato about the size of dice. A slit is cut and the potato squeezed together after the dose is inserted. Many fail with strychnine because they give too large a dose, thus making it an emetic, or they give a very small dose which only stimulates Mr. Gopher to renewed endeavor by keeping up his circulation. Prunes or raisins may be used in lieu of potatoes in the summer.

But to return to the subject of snakes. They are a sure refuge from snake troubles. Never kill the big snakes. Take a stick—say about four

feet long—longer if you are a little uneasy about shaking hands with his snakeship. About an inch from one end bore a hole in the stick and another about one and one-half inches from the first. Take a stout piece of cord or rawhide and put it through the first hole and tie a knot in the end. Then pass the other end through the other hole and pull it up to the other end of the stick into the hand. Open the loop you have at the holes, using a stick for the purpose after you have caught the first snake in it, but keep the free end of the cord in the hand. Angle the snake into the loop, then draw the cord up; take him to a gopher hole and he will go down and do your gopher-killing for you, and get fat at it. We have no gophers on our farm.

A few hours after writing the foregoing we found one solitary hill, the emigrant having just arrived from the neighbors. A few minutes later a hasty summons from a nearby house informed us that two big snakes were there. A snake-stick caught both, and we felt all the inward approval of a good deed done as we domiciled the snakes with our new emigrant. A. DORKING.
Manhattan, Riley County.

Growing Prevalence of Blackleg.

"Cause and Nature of Blackleg" is the sub-title of a newly issued eight-page pamphlet which should be of uncommon interest and value to stockmen in all districts where blackleg has made its appearance. Every cattle-owner understands fully the growing prevalence of this disease. He is well aware of its extreme malignancy. He knows that it is alarmingly infectious—that it spreads like wildfire. He understands, too, that the disease is incurable—at least that no remedy for it has thus far been discovered. Its origin from the rapidly multiplying blackleg germ—scientifically known as the "bacillus of symptomatic anthrax," the manner of infection; how it is conveyed from animal to animal, from herd to herd are details with which the generality of stock-raisers are perhaps not so familiar.

That the accepted opinion as to the deadly infection of blackleg is well warranted, may readily be inferred from the following paragraph, which is quoted here because it suggests in few words the grave dangers to be apprehended if something like concerted action is not taken by cattlemen to prevent the spread of the disease while prevention is yet possible:

"The spores of the blackleg germ are very hardy. It is quite likely that they may live for years in the soil, in the dust about sheds or farms, in the meshes of clothing, in such foods as hay, oats, or fodder, or indeed almost anywhere except in places where a continual high temperature is maintained. It is quite easy, therefore, to understand how the contagion could be carried by birds or insects, by the shipment of foods, or in the clothing of a herder, and deposited in far-distant localities. It is claimed that cattle have contracted the disease by being driven over infected lands many years after the disease had disappeared, and even after its existence had been forgotten. It is also claimed that streams of water have been known to carry and deposit their deadly freight over long distances from the originally infected fields, and that outbreaks of blackleg have resulted therefrom."

While, as has been said, there is no known cure for blackleg, the pamphlet makes clear the fact that in vaccination we have a reasonably certain preventive. How and when to vaccinate; comparative merits of the two methods in vogue—the injection into the animal of a blackleg vaccine powder which has been dissolved in water, and vaccination with blacklegoids—all this is explained in detail.

Messrs. Parke, Davis & Co., the authors of the pamphlet in question, speak authoritatively upon the subject with which it deals. We advise every cattleman in the blackleg-infected districts to send at once for a copy of the pamphlet "Cause and Nature of Blackleg," which we are informed they are pleased to send, postpaid, to any stockman. Requests may be addressed to Detroit, Mich., where their general offices and laboratories are located, or to any of their branch houses.

Too Many Calves Died.

EDITOR KANSAS FARMER:—I would like to inquire through the KANSAS FARMER what percentage of calves die with blackleg after they have been vaccinated. Last fall I had forty-seven calves vaccinated. In about two months after I lost two with blackleg and in another month I lost two more. The man who

did the vaccinating seemed very painstaking. He used single vaccine. He got it at Manhattan and injected it in the shoulder. If a loss of over 8 per cent is a fair sample I think the preventive should be spelled with a small p.
SCOTT REZEAN.

Cullison, Pratt County.

These losses are too large. The KANSAS FARMER will be pleased to have the experience of readers in the use of preventive vaccine from any of the several sources of supply. It has been claimed by the manufacturing trade that the care which can be given in the college laboratory is not such as to insure uniformity of product. With a view of ascertaining the best sources of supply the above requested information is desired.

A Stock Show at Topeka.

The Kansas State Exposition people have decided on dates for their meeting this year, viz., September 8 to 13. On account of the limited number of buildings available it will be impossible to hold, at this time, a strictly agricultural fair and exposition, but as a starter it has been decided to have a race meeting in conjunction with a high-class fine stock show. The commercial club of Topeka through its entertainment committee has decided not to hold any street fair or other attraction this year, but to join with the exposition company and make this first meeting a success. Sufficient funds are reported to guarantee success. Cash prizes are announced as follows:

Hereford and Shorthorn cattle, \$300 to each breed; Angus, Galloway, and Jersey cattle, \$250 to each breed; Holstein and Red Polled cattle, \$200 to each breed. In the swine department they will give \$150 in prizes to Poland-Chinas and the same to Berkshires, and \$100 to each of Chester Whites and Duroc-Jerseys. In the horse department they will give the Percheron \$150, Shire and Clydesdale \$150, Standard-bred \$150, jacks and jennets \$100. Sheep and poultry will be included in the show. One hundred dollars has been set aside for each of these classes. There will also be special prizes, and diplomas will be given for sweepstakes in the various classes. Not forgetting the quality of the fat stock of this State and knowing that many are preparing to show this line at the various State fairs it is proposed to give not less than \$500 for the fat stock show. An endeavor will be made to have these amounts increased by the various record associations representing the different breeds of stock herein mentioned.

Injured Twigs.

EDITOR KANSAS FARMER:—Quite a number of my apple-trees are affected with some sort of disease or blight, but just what I do not know or what remedy, if any, I should apply. Some varieties are more affected than others, but I am not sure that any are entirely exempt. The Missouri Pippin and Cooper's Early White are the worst. I send under separate cover some small limbs cut from different varieties as specimens. The leaves on these limbs are small and of a yellow, sickly cast and will stay so all the season; on an adjoining limb perhaps will be good growth and full sized leaves. Trees are about 6 years old and are well cultivated. Soil is black. Tell us the trouble and remedy.
D. H. WELCH.
Macksville, Stafford County.

ANSWERED BY PROF. ALBERT DICKENS.

The twigs sent by Mr. D. H. Welch, of Macksville, are similar to a number of others which have been sent to us recently. We have been unable to detect any fungous disease. It seems probable that the low vitality of the shoots is due to unfavorable conditions of last summer and fall and the cold of the winter. Trees which made a vigorous growth late in the summer seem to have been injured more than trees which matured their wood early in the season. It is a safe plan to cut back all injured wood to a point well below the feeble-growing twigs and branches.

Some Analyses of Commercial Seed-corn.

In view of the probability that many farmers in the State would be obliged to purchase seed-corn this year, it seemed desirable to make analyses of some seed offered, and, if material differences were found, to publish recommendations. Accordingly, all the varieties offered by the leading seed firm of the State were purchased, and their nitrogen content determined. The results are published in the succeeding table. The seed was apparently of good

quality, and its low content of nitrogen simply shows the deficiency of this important element that corn ordinarily exhibits:

Brazilian Flour Corn.....	1.30
Iowa Gold Mine.....	1.47
Early Mastodon.....	1.53
Hickory King.....	1.54
Champion White Pearl.....	1.59
Improved Leaming.....	1.62
Forsythe's Favorite.....	1.63
Iowa Silver Mine.....	1.69
King of the Earliest.....	1.70
Kansas Sunflower.....	1.72
Golden Beauty.....	1.74
Pride of the North.....	1.81

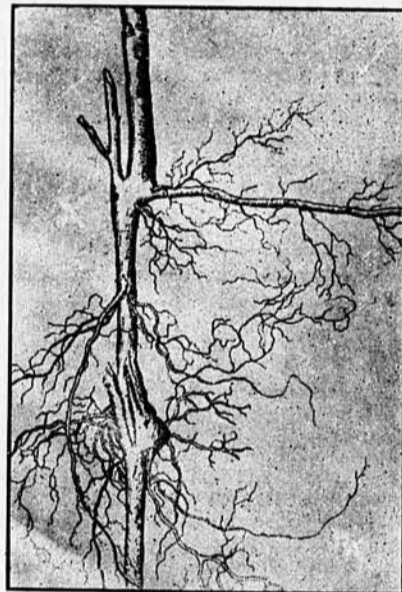
—J. T. Willard, in the Industrialist.

Sprouts from Wild Goose Plum.

EDITOR KANSAS FARMER:—Will you kindly inform a "greeny," or ask some of your able horticultural correspondents to do so, whether the roots from the Wild Goose plum (I believe that's the name) where they grow out of the ground some distance from the tree, if dug up with a reasonably good sized root attached and reset, will bear fruit at the proper time without grafting? The shoots are 1 year old now.
Ray, Pawnee County. L. H. THORP.

ANSWERED BY PROF. ALBERT DICKENS.

It will depend entirely upon the kind of root from which the sprout comes. If the Wild Goose has been grafted or budded upon a peach root, or upon some other kind of plum and the sprout comes from that the new tree will be of a different kind. It often happens, however, that the budded or grafted tree is set deeply in the nursery row or orchard and roots start from the Wild Goose wood. The race of plums



to which the Wild Goose belongs frequently behave in this way, some of them will, under very favorable conditions, root from cuttings. Unless the life history of the tree is known it will be very uncertain as to the variety of sprout. Similar characters of leaf and twig might not prove them to be the same but when these characters are quite different it is quite certain that the top and the root are not of the same variety.

The cut shown is of an apple graft which has rooted from the scion. A number of varieties frequently behave in this way.

Rural Life in Syria.

WILLIAM E. CURTIS, IN CHICAGO RECORD-HERALD.

"The irrigation systems along the valley through which the railway passes between Beirut and Damascus are ancient. They date back to the beginning of things, beyond the time when people began to keep records, before paper and books were invented, when few men knew their own language because there were no books to learn from and the art of writing was undeveloped. We do not know when irrigation was invented. Some historians attribute it to the Chinese, others to the Hindus, but if the human family originated in the valley of the Euphrates the first irrigating canals must have been dug here. At least the same streams are now used, and the same methods for directing and regulating the flow of the water that were in vogue at the time of Abraham. There has been little change in the implements and habits of the farmers. They plow with the same sort of a crooked stick to-day as they did in the time of Noah, thresh their grain by driving hooped cattle upon it, and winnow it by throwing it in the air to let the breeze blow out the chaff. It is extraordinary how the soil continues to bear. Its fertility is inexhaustible. These valleys have been planted with wheat and other grains for more than four thousand

years that we know of, and yet they continue to yield rich harvests as long as water can reach them.

The farmers do not live upon their land, but in contiguous villages. This custom dates back to the time when it was unsafe for them to do so, and when neighbors gathered together in little communities for better protection. Occasionally there is a case of robbery or kidnapping these days, and during the harvest season particularly the vineyards and the olive groves have to be watched. In some districts the government furnishes the watchmen; in others the land-owners organize for the purpose, and volunteer to assist each other. All these arrangements are reduced to a system and follow the customs of centuries. The high walls about every house and every farmyard indicate very plainly that live stock and other portable property are not always safe. But the farmers have more fear from the government officials than from any other source. They are oppressed beyond all conception. The original tax upon farms is one-tenth of all they produce, but the tax-gatherer sometimes seizes half of the harvest.

Caravans of donkeys and camels still compete with the railroad, and are continually moving along the old highway between Beirut and Damascus loaded with all kinds of freight, grain, cotton, silk, machinery, fuel, poplar-trees, dry-goods, merchandise of every sort, but petroleum seemed to be the popular cargo. We counted hundreds of camels and donkeys loaded with tin cans of Russian petroleum, made at Batoum, and every case, for some reason or another, was marked with English words. It is bringing the old and the new together when you load a camel with kerosene oil.

The Greeks formerly called this part of Syria Phoenicia, "the land of palms," because those trees were lovelier and more numerous here than anywhere else in the East. The palm has been accepted by all the Eastern nations as the highest type of grace and beauty. The columns of the temples erected in Egypt in the days of the Pharaohs, and afterward in Greece, in Palmyra, Babylon, Nineveh, and then in Rome, were modeled in imitation of the trunk of the palm, and the most beautiful of the daughters of Israel were named after the tree. The daughter of David and the daughter of Absalom were called "Tamar," which is a synonym for palm, and the name is still common among the women of Syria. You will find palm-branches used extensively in all the decorations of the Egyptians, and they were held as emblems of honor among the Hebrews, as the laurel among the Romans and Greeks.

"The Man Behind the Gun."

Certain things came to us out of the Spanish war. Came the stretching of the eagle's wings. Came fair islands in the Eastern and Western seas, "where every prospect pleases, and only man is vile." Came a host of interesting and perplexing problems—National, international, social, political, religious. Came Aguinardo the slippery, whom, having not, we sought with diligence, but whom, having, we know not what to do with—Aguinaldo, the "white elephant," which we have somehow drawn in this curious lottery. Came finally the phrase at the head of this paper, which promises to live because of its fitness to live.

It is the explanation of the war's result. We whipped Spain not because we were bigger, stronger in numbers and resources; not because we had more and better ships, guns, powder, but because we had better men. The determining quality was the factor of manhood. We were victors not by virtue of more men, but of more man.

Quality rather than quantity; the weighing rather than the counting of Israel; the emphasis of that which uses the means over the means themselves. It was not the ox-goad which routed the Philistines, but Shamgar, who handled it. It was not the sling, but the deft-handed slinger, who brought the braggart of Gath to the ground.

"That the sword of Alexander?" said one to whom it was shown. "Why, I see nothing remarkable about that."

"Ah, but you have not seen the arm that wielded it," was the illuminating response.

It is this thought that lies in Mr. Garfield's oft-quoted remark that he would rather attend a college on a log, with President Mark Hopkins on the other end of it, than any university in the land without him. The life is more than meat or means; the man is a more important fact and factor than methods or instruments. In the last

Everything but the Horse and Girl !!

HERE WE OFFER YOU SOME
SPECIAL BARGAINS IN BRADLEY BUGGIES

Particularly the Fellow That Has the Horse and Girl.

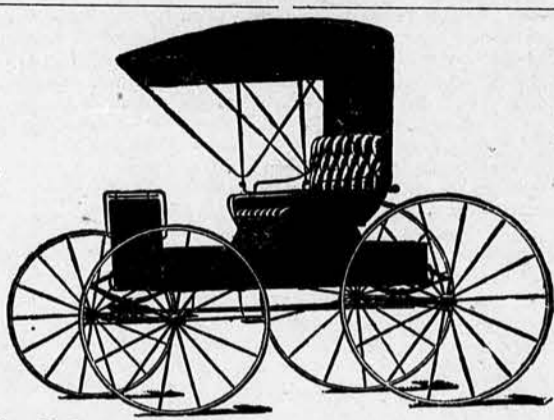
Horseless Offer No. 1.

One No. 5 or 6D SPECIAL END SPRING BUGGY fitted with steel corners, 4-bow leather quarter top, leather trimming, spring back, spring cushion, seat ends padded, side and toe carpet, nickel dash rail, etc., with shafts.

One set "ALBERT" Single Buggy Harness, one inch double traces, imitation rubber or nickel trimming.

One "HARD-WEAR" handsome and durable Whip.

One FANCY PATTERN Lap Duster.



No. 6D Buggy—Bailey Loop.
No. 5D Same as Above, Except Hung on Wood Cross Bar.

Horseless Offer No. 2.

One No. 11 or 12 BRADLEY END SPRING BUGGY fitted with D. B. leather quarter top, D. B. leather trimming, spring back, spring cushion, seat ends padded, side and toe carpet, nickel dash rail, etc., with shafts.

One set "ALIX" Single Buggy Harness, 1 1/2-inch single traces, (V-shaped breast collar), imitation rubber or nickel trimming.

One "HAND-MADE" stocked Java Whip.

One FANCY PATTERN Lap Duster.

ALL FOR? SEE BRADLEY AGENT IN YOUR TOWN.
\$\$\$? VALUE, QUALITY GUARANTEED.

You can't duplicate these outfits for the money anywhere. Call on our agent in your town at once or write us direct. Only good for a limited time

BRADLEY, ALDERSON & CO., Makers and Jobbers of Up-to-Date BUGGIES
KANSAS CITY, MISSOURI.

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analysis it is always the man behind the gun with whom we have to reckon.

Now, mutatis mutandis, the phrase lends itself readily enough to Christian uses; and especially for the purpose of this paper to the uses of the young people's movement in the churches. Strip off the blue of the khaki, take away the guns, and silence the bugles. Close the atlas on the map of Cuba and the Philippines. Our concern is not with these. Yet are we all soldiers, enlisted in a war whose issues shall be decided, so far as the human is concerned, by just that which this phrase suggests—life, not things; men, not means. Sometimes we almost forget it. Great is organization! And we are its prophets. Something to be done? Go to! Let us organize; let us adopt a constitution; let us appoint committees three or nine; let us insist that these committees do their work as defined in this constitution. Behold the object desired! In the gearing of wheels there is the promise of the grinding of corn. Sometimes we seem to forget that a gun is nothing but a gun until it gets a man to use it. Sometimes we seem to ignore that which we all know right well—the fact that conscience must be behind committee, and effective selfback of efficient society.

And it may be that this is one of the peculiar perils of this particular time. We are well over the initial stages of the young people's work. In the fresh burst of enthusiasm over a new plan a score of years ago everything went with a rush. The long pent-up waters suddenly released carried current enough to turn all wheels. Organization seemed practically the all-sufficient solvent, panacea, instrumentality. We had only to press the button, and the constitution did the rest. We had only to drop a committee in the slot and take out a result. But that is past. "The tumults and the shoutings die." The young people's society is no longer a new thing. It has to-day no strange formula to conjure with. Its purposes, plans, methods, have been thoroughly exploited, and are fully understood. What now? The thought which our phrase suggests. That which shall save and perpetuate the young people's work, conserve what has been gained, and increase future results in both quantity and quality, is the clear, strong emphasis of the life that lies back of organization—the emphasis of "the man behind the gun."

Nothing new in this, of course. Simply an "Amen!" to what has been said times beyond number. Yet its repetition may be suffered on account of the important principle involved. The individual life is the unit of measurement, not the society or the constitution. The man behind the gun, the conscience behind the committee, determine efficiency and success. Colonel Roosevelt, with broken saber and disabled carbine, would have reached the top of San Juan Hill; Captain Irresolute or General Faintheart would not have mounted its first rise though equipped with the armory's best. "Your sword too short? Make it longer by

taking a step forward," was the Spartan mother's admonition to her complaining son. That step was of more importance than another foot of steel. Your society is cold and formal? Your president is half-hearted and uninterested? Your committee is frivolous and inefficient? Your work is ineffective, therefore? Sad, surely; but not irreparable. You'll have to lengthen your sword by lengthening your stride. These things are the means and methods of your work. But something is more important than means and methods. Men and women. It is "the man behind the gun" that counts.—Dr. Wilson, in the Epworth Herald.

New Cereal.

High up on the slopes of the Andes Mountains in Bolivia, Ecuador, and Peru, grows a plant called "quinoa," which is nearly related to the common pigweed of our gardens. It is cultivated in that part of the world, finding most suitable conditions for its development from two miles to two and a half miles above the level of the sea.

The plant attains a height of about two feet, and is grown for the sake of its seeds, which are used as we utilize wheat—for making bread and porridge. About the size of small bird shot, they contain as much nutriment as wheat does, in proportion to bulk, and the natives depend upon this crop mainly for their food supply. To them, indeed, the "quinoa" is an all-important food plant.

Recently our Government has been seeking in every out-of-the-way corner of the world for little known plants of value, with a view to introducing them to cultivation in the United States, and, out of quite a number of such already found, the "quinoa" seems to be one of the most desirable. It is, in effect, a new cereal, and hopes are entertained that it may be grown to advantage over the northern part of the Great Plains region.

The northern plains of the Middle West have a climate not very unlike that of the high levels in the Andes, to which the "quinoa" is a native. There is a similar dryness, with long and severe winters and correspondingly short summers. But it has also been suggested that the plant might be grown satisfactorily over large areas in the interior of Alaska, where a suitable cereal, capable of resisting cold and producing a reliable crop, would be a Godsend.

Measuring the Speed of Underground Water by Electricity.

A recent and interesting development in the work of the Division of Hydrography of the United States Geological Survey is the study of the flow of water underground. In many localities the water which finds its way beneath the surface—as for example in the sands and gravels of dry river beds, or the seepage from irrigated lands in the West—is of considerable economic value, but little has hitherto been known regarding its speed and the manner of its flow. During the last season the Geological Survey has been

engaged in a series of preliminary studies under Prof. C. S. Slichter, of the University of Wisconsin, of the underflow in the sands of the Arkansas River. The method of investigation is entirely new; two test wells are driven and electrically connected. Into the upstream well is placed an electrolyte, or dissolvable substance, which affects the electric current. This electrolyte enters the underground water at the first well and gradually passes down stream to the second. In the electrical circuit between the two wells the needle of an instrument records its approach, and is strongly affected by its final arrival. By watching the increasing deflection of the needle it is possible to trace the movement of the water from the beginning of the experiment and to study the variations of its flow. In the experiments on the Arkansas River the rate of the underflow was found to be from three to fifteen feet per day.

Shipments of sheep will soon begin from the far West, and from all indications supplies from that source will be liberal all year. Flockmasters in Oregon and Washington have enjoyed a good season, and most of the sheep will be ready to come earlier than usual. Prices at Kansas City are now about \$1.50 higher than a year ago, and though the advent of rangers will lower values considerably, most dealers are of the opinion that a higher rate will obtain for the range sheep than a year ago. The high prices of cattle and hogs will naturally have a buoyant effect on the sheep market.

Hard when one must turn necessities into luxuries; soft when luxuries can be made necessities.

Gavitt's \$550 Prize Offer.

An interesting contest is at hand. Our readers will not fail to notice the display announcement on page 544 of the W. W. Gavitt Medical Company, Topeka, Kans., who offer \$550 in prizes for a list of words formed by using letters occurring in "Gavitt's System Regulator is Guaranteed."

The W. W. Gavitt Medical Company is a firm of manufacturing chemists of Topeka, and have built up a tremendous business during recent years. No firm in Topeka receives a larger daily mail than this house. Their business has grown to such an extent that they occupy three buildings, each of which is taxed to its fullest capacity. Every reader of the Kansas Farmer should feel a special interest in this Kansas institution and enter the contest at once.

Cloudcroft

is a splendid summer resort, high up in the Sacramento Mountains, in New Mexico, on the El Paso Short Line (Great Rock Island Route). If you are looking for rest and recreation, you can find them at Cloudcroft. The mountain breezes, fresh with the fragrance of the great pine forests, bring health and cool nights. Cloudcroft gives all the pleasures and benefits of a sojourn in the mountains. Its story is best told in a handsome booklet just published by the Great Rock Island Route and which can be had free on application to E. W. Thompson, A. G. P. A., Topeka, Kans.

Brain Markets.

Conducted by James Butler, Secretary of the Farmers' Co-operative Grain and Live Stock Association.

"The human race is divided into two classes,—those who go ahead and do something, and those who sit still and say, why wasn't it done the other way."—Oliver W. Holmes.

The Age of Cooperation.

The age of cooperation has come. In its present form it dates back to 1844, when the Rockdale Co-operative Association was formed. Before this time numerous efforts had been made and had failed, until cooperation was considered an impractical theory. But by and by the mind grasped the nature of the theory and now it is easy. When one who has been trained in the competitive world first begins to study cooperation he naturally thinks it is impractical. But by and by the light begins to dawn on his mind, and he becomes convinced that it is the only practical theory before the people today.

The Rockdalers originated and put into practice the plan of paying dividends on the amount of business furnished the association by a member. This proved to be a great boon to the cause as it stopped the accumulation of the funds in a few hands as had been the case when dividends were paid on capital. A few men would then get control of the bulk of the capital and draw the most of the profits.

The small investors would soon become discouraged and withdraw what funds they had in the business, and thus the institution would become private property, or would be owned by very few; and these few would draw profits from the many who patronized their institution, thus destroying the principles of cooperation. This principle of paying dividends on business furnished has been adopted by the Farmers' Co-operative Grain and Live Stock Association. They pay a fixed interest on the capital invested and the balance of the profits are paid in dividends on the amount of business furnished by each member.

This makes it just and equitable to all concerned. And is a guarantee that the benefits will accrue to the small investor as well as to the large. The farmers can, by following the cooperative system, place their own grain in the general market without the intervention of the middlemen who are now standing between the farmer and the consumer of the farmers' products.

The work of extending this organization belongs to the farmer, and no other class of persons will be found who will voluntarily do this work for him. It is an economic fact that the manufacturer who takes the raw material and converts it into the finished article can make more profit out of the business than the one who takes the raw material and converts it into the half finished article and sells it in that condition.

Now, in the same way, the farmer can make more out of his business, if he can convert his products into the finished state and sell them ready for consumption than if he sells them in the half finished state as is his grain when it is threshed and ready for the miller.

Economically considered the mills should belong to the farmer or the farms should belong to the miller. The principles of cooperation will finally make a consolidation of the two branches of the same industry. It takes both the miller and the farmer to make flour. Either is helpless without the other. Their interests are identical, and it is reasonable to say that they will be combined.

It is not practical for the farmer to undertake all of this work at once. The Farmers' Co-operative Grain and Live Stock Association was not intended to enter the milling business. It was intended to systematically turn the farmer's wheat to the millers, where all wheat finally brings up. The farmer has many things yet to learn about this first part of handling his product, but he is rapidly learning and it is only a matter of a few years until the cooperative method of handling grain will be universally adopted.

On the other hand will stand the vast transportation, mining, and manufacturing facilities of the world. Cooperation is already working among them and will eventually lead the laborers of the world to own and operate their industries without the intervention of the capitalists' money. The uniting of these two great divisions of industry will be the work of future generations.

The progressive people of this gen-

eration will devote their energies to the building up of voluntary cooperation among the people.

The cooperative move will succeed by the united efforts of its advocates.

Suggest something with the intention of helping along, uniting, encouraging and pushing forward the movement and you will be appreciated.

Secretary Butler is making a trip through the State this week looking after the interest of the association and the condition of the grain business in general.

On account of farmer's neglect of their own business interests it has been very easy in the past to form pools against farmers and extract their hard-earned dollars in an indirect way. Are they always going to neglect their own interests and stand disorganized in a business way?

The great difference between the cooperative plan and the capitalistic plan is that the cooperative plan is to organize persons with the sovereign power vested in the majority of individuals while the capitalistic plan is to organize capital with the sovereign power vested in the majority of the money.

There is no other association that is in position to help the farmers free themselves from the grasp of the grain combine as is the Farmers' Co-operative Grain and Live Stock Association. Ten dollars invested in this association will return many times that amount in increased prices for grain.

The central association is protecting and guarding the interests of the local, and if it was not for the watchful care of the central association, but very few locals would be in business now. The central association can be of vastly more benefit to the locals when locals cooperate with it, in securing these benefits.

One lesson that cooperators must learn is that petty jealousies must not be aired in public print. It does a vast amount of harm for the cause of cooperation to be continually finding fault with other cooperators. The same amount of energy used to build up would soon convert the world to cooperation.

Now is the time to interest your neighbors and get them to organize local associations and subscribe for stock in the Farmers' Co-operative Grain and Live Stock Association. This association is past the experimental period and its success is assured. Its growth, however, depends largely upon your efforts in helping it secure members.

In the matter of looking after the general welfare of its members and doing a general educational and organization work among the farmers the Co-operative Grain and Live Stock Association has no worthy competitor in Kansas. This help alone is worth many times what it costs. Even though the central association should never handle a bushel of their grain.

It is an encouraging fact that the Farmers' Co-operative Grain and Live Stock Association has been the means of saving many thousands of dollars to the Kansas farmers during the first year of its activity. The real test of all theories is to put them into actual, practical use. Many good theories are not practiced because of the environments in which they must be launched. The plan adopted at Salina by this company has proven itself admirably adapted to do the work for which it was intended. It has been successful and a successful, practical working plan should be changed, if at all, with a great deal of caution.

A number of our locals are competing with each other in selling their grain. This should not be. Competition has no place in a cooperative organization. Buyers will endeavor to have you compete, in order to get your grain cheaper. While this competing is going on the central association can't sell your grain to the best advantage because you, yourselves, will sell it for less than it is worth, thus competing with the central association and the other local associations. The first great object for which the central association was called into existence, namely, protection of its members in the general market and looking after their interests with the transportation companies has been accomplished, but

LIFE'S LOCK-STEP

The Mark It Puts on Men.

A movement has been started to abolish the prison lock-step, because it stamps a man forever as a jail-bird. The prison pallor passes away, but the lock-step lasts and puts a man in the criminal class.

There is a lock-step learned outside of prisons which puts its mark just as plainly on the man who practices it for years. Every business man and every clerk drops into this lock-step. There is no such thing as absolute independence in business. The successful man must "Keep up with the procession," or be trampled on. The clerk must keep step also with the obligations of his class. He must live up to the limit of modern office requirements. He must give ability, time and strength equivalent to that given by the best of his fel-



lows else he must drop out or be trodden down. This irksome daily routine sets its mark on those who practice it.

THEY ARE MARKED MEN.

The general mark of constant daily drudgery is weakness. Sometimes the cheeks are hollow, sometimes the eyes are dull or sunken, and sometimes, often indeed, there is a falling off in weight below the normal, indicating a loss of flesh. But whether these symptoms are prominent or not, there is a run-down, weak feeling, which makes it harder every day to face the day's duties. Sleep is not sound and it does not refresh. The appetite fails and nothing "tastes good." There is often a heavy, stupid feeling, and there may be nervousness and great irritability. This condition can not continue indefinitely. Sooner or later there must come a complete breakdown, unless something is done to restore the lost strength and bring the body up to a sound, healthy condition.

How can that be done? The very condition of weakness suggests its own remedy. What makes physical strength? Food digested and converted into nutrition. If there is a loss of strength it is due to one of two causes—either not enough food to eat, or disease of the digestive and nutritive tract which prevents the digestion of food and the assimilation of its nutritive elements. In this country everybody can get enough to eat. It isn't lack of food that causes this weakness, but lack of power to digest and assimilate the food when eaten.

It is evident then that what will cure the disease which prevents nutrition will restore the lost strength, by enabling the perfect digestion and assimilation of food.

Thousands of weak worn-out men and women have been restored to perfect health and strength by the use of Dr. Pierce's Golden Medical Discovery. It cures diseases of the stomach and other organs of digestion and nutrition, and builds up the body with solid flesh.

the second great object for which we are organized, namely, the preventing of competition between ourselves has not been fully accomplished and will not be until our members learn to affiliate more closely with the central organization.

We are continually receiving letters enquiring what we can pay for grain. Of course we can offer a price for the grain, but that is not the best way for our members to get the best results. It would be much better if they would

CATARRH OF THE STOMACH

is looked upon as one of the most difficult of diseases to cure, yet Dr. Pierce's Golden Medical Discovery cures it as readily as it cures dyspepsia, and the commoner forms of what is termed "stomach trouble."

"About ten years ago I began to be afflicted with catarrh of the stomach, also diarrhea," writes Mr. William Walters, of Antrim, Mo. In warm weather it grew worse, until it would throw me into a cramping chill. Was troubled so often that I sometimes thought my end had come. Tried many remedies, but they gave only temporary relief. In November, 1899, thought I would try Doctor Pierce's Golden Medical Discovery. I got six bottles. The sixth bottle cured me. I have enjoyed the best of health this summer, and the credit all belongs to your 'Golden Medical Discovery.'

"Your medicines have done so much for me that I cannot thank you enough for advice and kindness shown me," writes Mrs. Warren E. Parker, of Orange St., Nantucket, Mass. "Three years ago I was taken sick with what the doctor called nervousness and indigestion. He gave me medicine for the trouble, but I could not eat even a little toast or oatmeal without suffering severely. I felt hungry but hardly dared eat anything. In a few months I began to have distressing pains right in the pit of my stomach. After the distress passed away it would leave my stomach so sore that I was obliged to lie in bed several days. I called the doctor again and he said I had catarrh of stomach; gave me medicine but it did not do any good. I lost twenty-eight pounds in three months. One of my friends loaned me Dr. Pierce's Common Sense Medical Adviser to read, and when I read that many people had been cured by his medicines I made up my mind to write to him, although I was so bad I didn't think there was any help for me. I wrote and stated my case and received a prompt reply, advising me to take his 'Golden Medical Discovery' and also his 'Pellets,' if constipated. I commenced taking his medicines immediately, and soon began to feel better. I have taken six bottles of 'Golden Medical Discovery,' two of 'Favorite Prescription' and six vials of Dr. Pierce's Pellets. I have gained ten pounds. Am able to do all my work, and have not had a distressing spell for five months. Can eat anything. I cannot express thanks enough for the good the medicines have done me. If anyone who is suffering, no matter what the cause may be, would only write to you for advice, I know you could help them."

FREE CONSULTATION BY LETTER.

The value set by Mrs. Parker upon the advice freely given by Dr. Pierce does but correspond to her sense of the benefits she received.

Dr. Pierce invites all sick people, especially those suffering from disease in chronic form, to consult him by letter, free, and so obtain the opinion of a specialist on their ailments without cost or fee. All correspondence is strictly private and sacredly confidential. Address Dr. R. V. Pierce, Buffalo, N. Y.

Accept no substitute for Dr. Pierce's Golden Medical Discovery. There is no other medicine "just as good" for disease of the stomach and its allied organs of digestion and nutrition.

NOT A CENT TO PAY

for Dr. Pierce's Common Sense Medical Adviser except the cost of mailing. This great work, containing more than a thousand large pages and over 700 illustrations, is sent free in paper covers for 21 one-cent stamps to pay expense of mailing only. For the handsomer and more durable cloth-bound volume, send 31 stamps. Address Dr. R. V. Pierce, Buffalo, N. Y.

offer their grain at a stated price for immediate acceptance, or what would be better, give us twenty-four hours in which to find a market. We prefer our members to set their own price for their grain, and if we can sell it for more than that price they will get the advantage of the advanced price, and if we can not get the stated price we will immediately notify them of the fact and no harm is done. List your grain with us at your own price and will do you good. That is what we are here for.

Grange Department.

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

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

NATIONAL GRANGE.

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

KANSAS STATE GRANGE.

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

A Call for Prompt Action.

There are now pending before the Senate and House Committees of Interstate and Foreign Commerce two important bills, No. 3521, entitled an act "To enlarge the jurisdiction and powers of the Interstate Commerce Commission;" No. 3575, entitled an act "To amend an act to regulate commerce approved February fourth, eighteen hundred and eighty-seven, and all acts amendatory thereof." Hearings are being held by both Senate and House committees on these important measures. The legislative committee of the National Grange was accorded a hearing both by the Senate and House committees. Both committees were interested in hearing the views of the Order of Patrons of Husbandry, and the farmers generally, on these important matters. The chairmen of both committees recognized and expressed the opinion that farmers were far more interested in the pending legislation than any other class of citizens. The scope of the proposed legislation is to prevent discrimination in freight rates between individuals, corporations, localities, and commodities; and to secure fair and equitable rates by all common carriers engaged in interstate commerce. The Nelson bill, No. 3575, provides where complaint is made that the Interstate Commerce Commission shall determine, after full investigation, whether the defendant or defendants are in violation of any of the provisions of the act in respect to any rate, relation of rate, whether between individuals, localities, or commodities, classification, or other practice, and to determine the rate that should be observed for the future in order to correct the wrong found to exist, and it shall order the defendant to observe the same. In case of ordering a change in the relations of rates, if it shall become necessary in order to establish or maintain a just relation thereof, it shall be its duty to prescribe the rate or rates to be observed by either or all the parties concerned therein, and when a rate involved in any case is a joint rate it shall further determine the proportions in which the rate shall be shared by the several carriers, if they fail to agree among themselves in respect thereto.

The Nelson bill, No. 3575, is intended and expressly provides to give to the Interstate Commerce Commission all the powers it was generally supposed to have had in the original act creating and establishing the Interstate Commerce Commission and protect the rights of the citizens against discriminations and unjust and unreasonable charges on the part of common carriers.

The rapid consolidation of the railway systems and placing all the roads in the hands of a few men make legislation at this time more and more important, as well as the further fact of the increased cost of transportation at a time when the actual cost of transportation should be decreasing on account of better road-beds and larger cars. The Interstate Commerce Commission, a short time ago, took testimony at Chicago as to the cost of transportation of wheat from Chicago to New York. This testimony showed that the average car-load of grain moved by the Lake Shore Railroad was about 60,000 pounds per car. The traffic manager of that road testified that the standard train consisted of fifty cars and that one engine could haul this train from Chicago to Buffalo. He testified further that the entire expense of moving that would not exceed \$50 per train mile. The present rate from Chicago to New York is 16 cents per hundred pounds, that is, the railroad would receive for that service \$5,250, and as the testimony showed the expense was but \$500, leaving \$4,750 profit and for the use of the cars and road. One year ago this same service was performed by these same roads at 11 cents per one hundred pounds, while the published rate was 13 1/2 cents per one hundred pounds, but by an agreement among the roads themselves they agreed to maintain a rate of 11 cents. Under the present arrangements ship-

pers of grain are compelled to pay 5 cents per one hundred pounds higher than one year ago.

Practically the railroads control the elevators in Chicago and Buffalo; they control practically all the vessels on the Great Lakes which are adapted to the transportation of flour and package freight; and three men practically dictate every line excepting one over which grain can reach the Atlantic seaboard from Chicago. In view of this condition what the farmers of the country want, and all fair business men and manufacturers should want, is the passage of a law giving the power and authority to the Interstate Commerce Commission to examine and determine the reasonableness of all freight charges and compel the transportation companies to obey the law, and also absolutely prohibit all discrimination, as this alone will give to all business men an equal opportunity to compete for business.

The classification of freight has worked a great hardship and injustice to many commodities and localities. Take the case of hay. Changing it from sixth to fifth class advanced the average freight on hay \$40 per ton, and thereby reduced the value of the 50,000,000 tons of hay about \$20,000,000. This enormous change was effected without any change in rates, simply by changing the classification.

There are over thirty million of our people engaged in agriculture. The selling value of their products is absolutely at the dictation of five systems of railways, and unless these great powers are controlled by law absolutely no protection is accorded to this most important industry that lies at the base of the prosperity of all other industries and our country. Your legislative committee was accorded a courteous hearing. Their arguments were conceded to be sound and just, and their demands fair and reasonable, but they were reminded that we are confronted by a large aggregation of capital, about \$10,500,000,000, the holders of which are contending that no restrictive legislation should be enacted. Your committee reminded them that members of Congress owe their allegiance to their constituents, and that such legislation as will restrain monopolies and guard the rights and interests of the humblest citizen of the Republic is necessary, that all may share in the grand prosperity of our country.

Your committee would like to have each individual member of the order write his Senators and Representatives, and to the President, asking that a law be enacted at the present session of Congress that will embrace at least two features—restraining railroads and

other common carriers from making any discrimination, and requiring their charges to be just and reasonable.

The best interests of the farming population and of this Republic demand the passage and enforcement of this just and equitable law.

AARON JONES,
E. B. NORRIS,
N. J. BACHELDER,
Legislative Committee National Grange.

A Good Education.

Education, in the common acceptance of the word, is mental development. Education does not consist in the knowledge acquired more than in the ability to think systematically and logically, and thereby apply one's mental faculties to the work in hand to the best advantage. The training of the mind enables it to be of greater value to the possessor as well as to the public in general. The support of public schools by taxation of the property of all individuals, whether having children or not, is evidence that public education is a public function for public welfare rather than for the welfare primarily of the child educated.

What constitutes a good education must be determined from individual instances, and not under any general statement. A good education for one person might be a very poor education for another. From the earliest study of the alphabet to the end of the common district school, the education of all, whatever their business or profession in life later may be, is along similar lines and practically the same. This constitutes all the school education many people receive, but it is not sufficient to enable one to make the best use of his faculties in any business or profession for his own or the public welfare. To be sure, it is all that many successful men and women in the past have had, and should by no means be neglected because greater school advantages can not be obtained. It is the foundation only for mental training and development in other institutions, or in various experiences and opportunities of life.

A good education consists in the ability to control and direct the mind and apply its full power to the subject under consideration in a practical way. One of the most potent agencies for mental training and for enabling one to grasp practical questions in a practical way is the experience gained in a well-conducted grange. The very qualities here developed through the agency of thought and speech, and the practice in parliamentary law contribute to the very best education for the farmer, as similar experiences in the various clubs and societies educate men and women in their respective spheres. A good education consists in knowing the simplest things of everyday life rather than knowing a great many things of no practical use. This is becoming an intensely practical age, in which practical things count for more than the simple theoretical.

A good education is constantly adding to itself while life lasts. Whether a person's school days end with the district school, the academy, the college, the study of a profession, or the study obtained from a foreign tour, the real education of life has but commenced. We are, consequently, learning in the shop, upon the farm, in the counting-room, or in the study. As farmers, we should know more this year than last about causes of failure of crops and means of preventing them; causes of loss in feeding farm animals and the means of changing such loss to profit; causes of bad roads, high taxes, and extravagance in public affairs, and the remedy. Study of these matters will contribute to our education, and enable us to render greater service to our town, State and Nation. They will promote a good education, which consists in knowledge of these things and many others not even mentioned.—National Grange Quarterly Bulletin.

Kansas Granges Organized and Reorganized.

In response to request, Brother Black sends the following report of grange work since last November:

Since the last meeting of the State Grange, the following granges have been organized and reorganized:

Dragoon Grange No. 331, Osage County, reorganized by W. G. Obryhim, November 29, 1901, with twenty-three members; G. W. Plackett, Burlingame, master; Grant Watson, Burlingame, secretary.

Carbondale Grange No. 754, reorganized by W. G. Obryhim, January 14, 1902, with thirty-one members; W. J. Dritchick, Carbondale, master; Henry Ulrich, Carbondale, secretary.

Stanton Grange No. 384, Linn County, reorganized by Ole Hibner, January

MISS BONNIE DELANO

A Chicago Society Lady, in a Letter to Mrs. Pinkham says:

"DEAR MRS. PINKHAM:—Of all the grateful daughters to whom you have given health and life, none are more glad than I.
"My home and my life was happy



MISS BONNIE DELANO.

until illness came upon me three years ago. I first noticed it by being irregular and having very painful and scanty menstruation; gradually my general health failed; I could not enjoy my meals; I became languid and nervous, with griping pains frequently in the groins.

"I advised with our family physician who prescribed without any improvement. One day he said,—'Try Lydia Pinkham's Remedies.' I did, thank God; the next month I was better, and it gradually built me up until in four months I was cured. This is nearly a year ago and I have not had a pain or ache since."—BONNIE DELANO, 3248 Indiana Ave., Chicago, Ill.—\$5000 forfeit if above testimonial is not genuine.

Trustworthy proof is abundant that Lydia E. Pinkham's Vegetable Compound saves thousands of young women from dangers resulting from organic irregularity, suppression or retention of the menses, ovarian or womb troubles. Refuse substitutes.

16, 1902, with sixteen members; H. P. Clay, Mantey, master; Mark Clay, Mantey, secretary.

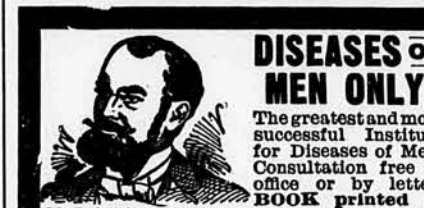
Valley Grange No. 448, Osage County, reorganized by W. G. Obryhim, January 21, 1902, with twenty members; R. S. Montgomery, Carbondale, master; W. E. Daniels, Scranton, secretary.

Garnett Grange No. 1435, Anderson County, organized by S. S. Irwin, with twenty-five members; D. D. Judy, Garnett, master; A. J. Vaughn, Garnett, secretary.

Walnut Grange No. 60, Franklin County, reorganized by Ole Hibner, with sixteen members; A. O. Cady, Wellsville, master; C. C. Darsey, Wellsville, secretary.

Ash Valley No. 1436, Pawnee County, organized April 9, with twenty-nine members; A. B. Lavett, Larned, master; Miss Myrtle Lovett, Larned, secretary.

Advance Grange No. 1096, Shawnee County, reorganized by Lect. A. P. Reardon, April 22, 1902, with thirty-one members; A. E. Dickenson, Meriden, master; G. W. Priest, Meriden, lecturer; W. E. Dickinson, Meriden, secretary.



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Mrs. H. A. Alsbrook, of Austin, Lonoke Co., Ark., writes: "After five months of great suffering with female weakness I write this for the benefit of other sufferers from the same affliction. I doctored with our family physician without any good result, so my husband urged me to try Dr. Pierce's medicines—which I did, with wonderful results. I am completely cured. I took four bottles of Dr. Pierce's Favorite Prescription, four of his 'Golden Medical Discovery' and two vials of his 'Pleasant Pellets.'"

The Common Sense Medical Adviser, 1008 large pages in paper covers, is sent free on receipt of 21 one-cent stamps to pay expense of mailing only. Address Dr. Pierce, Buffalo, N. Y.

The Poultry Yard.

Feeding Experiments.

The Maine Experiment Station reports that on July 25 twenty Plymouth Rock cockerels that were 95 days old, and even in size and thrift, were put in five small coops and fed twice daily for twenty-eight days on porridge made from a mixture of 100 pounds of corn-meal, 100 pounds of wheat middlings, and 40 pounds of animal-meal mixed up with cold water. They were fed all they would eat twice each day.

The total weight of the twenty chickens was 68.9 pounds, or 3 pounds, 7 ounces each, when they were put up to be fed.

After twenty-eight days' feeding the total weight was 95.8 pounds and the chickens weighed about 4 pounds 13 ounces each.

The actual gain per chicken was 1.34 pounds, which means 1 1/2 pounds—say 1 pound 5 1/2 ounces in twenty-eight days.

It required 8.92 pounds (nearly 9 pounds) of the mixture to make a pound of gain.

On the same day that the first birds were cooped, sixty-eight of their mates, of the same age and quality, were put in a chicken house 9 by 11 feet in size, with an attached yard fifteen by twenty feet. There were no green plants in this yard. These birds were fed in the same way, and on the same material as their mates in the small coops.

These sixty-eight chickens weighed 199.3 pounds when put up to feed, or say 2 pounds 15 ounces each.

After twenty-eight days these chickens had gained 97.5 pounds in all, or 1.43 pounds each. The 1.43 pounds represent as near as we can figure a pound and seven ounces.

In this instance only 513 pounds of meal were used, or 5.26 pounds (say 5 1/4 pounds) of meal were required to make or produce a pound of gain.

Another test was made of 95-day cockerels in small coops. The corn-meal and wheat middlings were the same as before, but only 33 pounds of meat-meal were used. The food was mixed with skim-milk instead of water.

The twenty chickens in this case weighed 67.6 pounds to begin with, weighed 101.3 pounds after twenty-eight days, an increase each of 1.68 pounds, or say 1 1/2 pounds per chicken.

They used 231 pounds of dry meal and 465 pounds of skim-milk in this experiment and required 6.85 pounds of dry mixture to make a pound of gain.

Another test was of sixty-eight chickens, 95 days old. They were fed the same as the twenty just mentioned—the food being mixed with skim-milk, but they were in a small house and yard instead of being in coops.

In this case the chickens weighed 202.9 pounds total going in, and 319.4 pounds after the test. They gained 1.713 pounds each chicken, which is very close to 1 3/4 pounds per head in the twenty-eight days.

The dry mixture used to make a pound of gain in this instance was 4.03 pounds, which comes down to a business basis.

Several other chicken-feeding tests were made, but this time we will mention only one more.

In this instance the chickens were 160 days old. This test lasted but

twenty-one days. The feed was the same as the test just mentioned. The 160-day-old chickens weighed nearly 3 pounds each in the beginning and gained .78 of a pound each equal to 1.04 pounds in a four-weeks' test.

In this case it required 9.74 or say 9 3/4 pounds of dry mixture to put on a pound of gain.

In the conclusions drawn from a number of experiments we discover that:

Cooping is not necessary in order to secure the greatest gains in chicken-fattening and they made greater gains when given a little liberty than when kept in close confinement.

Skim-milk fed as part of the ration is a valuable improvement over water alone.

The tables show plainly that with poultry the periods of cheap and rapid gains in weight come early in life.

Where one-fifth of the food used was meat-meal a pound of gain in the live birds was made by about one-fifth less weight of food than where no meat-meal was used.

At the experiment station the cost of a pound of gain in chicken-feeding under various conditions ranged from 5 to 15 cents. A farmer can figure himself what the rations fed in the experiments mentioned would cost him at home.

Some other interesting facts yet remain unexplored in that bulletin which is a remarkably valuable document in regard to the poultry industry.

The bulletin referred to is numbered 79 from the Agricultural Experiment Station, Orona, Maine.

Management of Hens.

C. B. BARRETT.

When it is not practicable to run the incubator eggs may be placed under two or three hens at the same time in order to have a good sized bunch to follow the chosen mother. A small compartment in the poultry-house may serve as a hatching-room, or coops may be built outside to accommodate one sitting hen each. I prefer to separate the hens whenever I can do so without causing too much work, as I think they sit and hatch better. Provide each hen with food and water to last several days at a time, and the labor of caring for them is greatly reduced.

A little attention at hatching time is sometimes necessary, as the shells of hatched chicks often slip over a piped egg and the chick can not free itself. These shells should be removed from time to time.

I have found this method an improvement over incubator hatching in some ways. One is never puzzled over the moisture problem and the hen takes care of the temperature. She airs her own eggs while you are at work at something else, and as for refueling, that is done at her pleasure, and if corn and water and grit are kept within reach the hen will do the rest.

I prepare a large roomy coop for the brood after hatching and confine them for a week. By that time the chicks are strong enough to take care of themselves when mingling with the rest of the flock. On nice sunny days they may be turned out for awhile to get the benefit of the warmth, as sunshine acts as a tonic to the little fellows. The first feed is light bread moistened with fresh milk, later some green food chopped fine, and a little fresh meat or cut bone. With such a diet chicks can not help but grow if they are kept free from lice. One hen should care for thirty or forty chicks at this time of the year.

To Cure Egg-eating.

A poultry man of experience says: There is nothing more provoking and more unprofitable than a flock of hens which have acquired the habit of eating their eggs. This is a habit more easily prevented than cured. Give the hens plenty of exercise with a variety of food. Gather the eggs frequently, provide sufficient resting places and keep one or more porcelain eggs upon the floor of the house. Dark nests are advisable, and a meat diet is excellent.

To cure the habit provide dark nests and add meat to the food. Remove the end from several eggs and pour out the contents. Make a mixture of flour, ground mustard, and red pepper, adding a little water to hold the material together. Fill the shells and place upon the floor of the hen-house. The hens will make a wild scramble for these prepared eggs, will gobble down some of their contents, and will soon be gasping with open beaks. Follow up this treatment until the hens refuse to touch an egg. It seems, and perhaps is somewhat severe but no permanent ill effects will follow. The hens will soon learn that eggs are not so palatable as they regarded them, and will desist

An Engineer's Peril.

His Hair-breadth Escape in a Time of Peril.

"In the first place," said Mr. Thomas F. Coleman, an engineer, living at No. 417 Post street, Salt Lake City, Utah, "before I tell you of my narrow escape, I will say that my position is a hard one. Not only are the hours long—sometimes I am obliged to work twenty-four to thirty-six hours at a stretch without any rest—but there is a continual strain of responsibility attached. "Now this strain and lack of rest had begun to tell upon me. I began to have sick headaches. I grew nervous and every little thing bothered me. Then I became irritable and could find no comfort in anything. Very often a dizziness would come over me, I would feel so faint that I could hardly hold my head up and with it all came loss of appetite and restless, wakeful nights. I was so worn out that I was wholly unfit for my work.

"But I'm in good shape now," went on Mr. Coleman. "I suffered as I described to you for about three years and during that time took prescriptions by the score from some able physicians, but nothing gave me more than temporary relief. All this time I was unfit for work and, as I became more and more run down in health, I grew more and more discouraged. Then I saw Dr. Williams' Pink Pills for Pale People advertised in a newspaper and in August, 1900, I began taking them. I got relief after a few doses, and five boxes cured me."

Nervous strain and hard work are the causes of much sickness. The system becomes run down, the nerves racked and the blood becomes poor. The power of Dr. Williams' Pink Pills for Pale People in the vast number of diseases due to derangements of the nervous system or to impure blood has been demonstrated in thousands of instances as remarkable as that of Mr. Coleman.

It is a well-established fact that Dr. Williams' Pink Pills for Pale People are an unfailing specific for locomotor ataxia, partial paralysis, St. Vitus' dance, sciatica, neuralgia, rheumatism, nervous headache, after-effects of the grip, palpitation of the heart, pale and sallow complexions, and all forms of weakness either in male or female. At all druggists or direct from Dr. Williams' Medicine Co., Schenectady, N. Y., fifty cents per box; six boxes for two dollars and a half.

from the bad habit. Positive cures have followed this method.—Tri-State Farmer.

How to Burn Sulphur.

Sulphur is an excellent disinfectant when burned in the poultry-house; but as sulphur melts and smothers the flame it is difficult to burn it satisfactorily. One way to do so is to dissolve one-half pint of pine-tar and one-half pint of turpentine in one-half gallon of kerosene in an open vessel. Soak in this solution large corn-cobs until they are well saturated. Then take them from the solution and dust on them all of the powdered sulphur that will stick to them. Use nails or pieces of wire, and insert the pointed end into the large ends of the cob and then stick them on the floor. Remove all the combustible matter from the poultry-house, permitting the fumes to enter every crack and crevice, all over the surface, and the lice will be destroyed. This should be done once a month in warm weather.—Garden and Farm.

Will some one please name even a small locality in this great country where the potato-beetle does not need fighting? If we find that place, should we run upon some greater evil?

Warm spring days produce a feeling of drowsiness if the body is loaded with the impurities of winter diet. Cleanse the blood, liver and bowels with Prickly Ash Bitters. It creates energy and cheerfulness.

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Will rid your Poultry, Hogs, Cattle and Horses of Lice and Mites. It is the best and cheapest, costing prepared, ready for use, only **4 Cents per Gallon.**

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S. C. B. LEGHORN EGGS—Thirty for \$1. New blood and good stock, f. o. b. here. F. P. Flower, Wakefield, Kans.

EGGS FOR HATCHING—From pure-bred, large-boned B. P. Rocks \$1 per 15; \$5 per 100. Chas. Almsworth, Stillwell, Kans.

WORLD'S GREATEST LAYING STRAIN—Black Minorcas—beautiful in shape, color, and comb, grand winter layers. Eggs \$1.50 per 15. Address George Kern, 817 Osage Street, Leavenworth, Kans.

CORNISH INDIAN GAMES—Prize-winning; cock scoring 94. White Rocks, Black Langshan eggs \$1 per 15. Mrs. J. C. Strong, Moran, Kans.

ROSE COMB WHITE LEGHORNS—White guineas. Leghorn eggs, \$4 per 100; guinea eggs, \$1 per 16. Mrs. Winnie Chambers, Onaga, Kans.

EGGS—\$1 per 15. Select Barred Plymouth Rocks. Fine fellows. Duroc-Jersey and Poland-China pigs—all sizes. D. Trott, Abilene, Kans.

WHITE WYANDOTTES—Exclusively. Eggs for hatching, \$1 per 15. Mrs. E. F. Ney, Bonner Springs, Kans.

NO MORE PUPS FOR SALE until after May 1, but can furnish B. P. Rock eggs from large, vigorous, and finely-marked birds; 15 years' experience with this breed. Send me your order; you will be pleased with results. \$1.50 per 15.

W. B. WILLIAMS, Stella, Neb.

White Wyandottes Exclusively.
The big white kind that wins prizes and lays eggs. Eggs in season—\$2 for 15.
C. H. WILSEY, - - - Dexter, Kansas.

PURE-BRED POULTRY.

Eggs for setting, 10 cents each. Barred Plymouth Rock, Rosecomb White Leghorn, Single Comb Brown Leghorn, Black Langshan, White Holland turkeys, Imperial Pekin ducks. J. C. CURRAN, Curran, Kans.

Gem Poultry Farm.

C. W. PECKHAM, Prop'r, HAVEN, KANS.
Four Yards—15 Acres. Exclusively taken by the largest and best flock of Buff Plymouth Rocks in Kansas. Eggs sold from two best yards only, at \$2 for 15.
Prize-winning M. Bronze Turkey Eggs, \$2 for 11.

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Barred Plymouth Rocks, White Plymouth Rocks, Buff Rocks, Buff Brahma, Partridge Cochins, Light Brahma, Black Langshans, Silver Wyandottes, White Wyandottes, Silver Spangled Hamburgs, Brown Leghorns, and Belgian Hares. First-class Standard Stock of Superior Quality. Stock For Sale. Eggs in Season. Write Your Wants. Circular Free.

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California Red Wood Stock Tanks.

Let us make you prices on Red Wood Stock Tanks, Milk Tanks, and Refrigerators; freight paid to your station. While you are at it why not buy a good tank and especially so when the price is so reasonable. Write us describing the kind and size you want, give dimensions and we will make an interesting price. Address the SURE HATCH INCUBATOR CO., Clay Center, Neb

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disable, but this is where

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In the Dairy.

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

The Kansas Klondike—Alfalfa Hay for Wintering Cattle.

A. L. COTTRELL, STUDENT OF KANSAS STATE AGRICULTURAL COLLEGE, IN LIVE STOCK JOURNAL.

A professor from Montana Agricultural College inquired concerning our alfalfa and its feeding qualities. Investigation indicated such splendid results that in the midst of his enthusiasm he remarked that "Kansas certainly has a Klondike of her own." This remark is thoroughly substantiated by the following data:

Eight head of the college pure-bred cattle have subsisted entirely on alfalfa hay this winter, commencing September 2, 1901, and continuing to the present date. They were kept in a large roomy lot with a southern slope, with open sheds for shelter. The water was kept palatable in the cold weather with a tank-heater. Salt was kept before them at all times. The following table gives the results since September 2, 1901:

Name of cow.	Breed.	Age, Year, Month.	Weight, Sept. 2, '01, lbs.	Weight, April 4, '02, lbs.	Total gain, 213 days, lbs.	Daily gain, lbs.
Mary	Shorthorn	2 7	1,000	1,330	330	1.54
Agatha	Hereford	1 10	840	1,111	271	1.27
College	Holstein	2 6	980	1,268	288	1.35
Garben	Holstein	2 6	950	1,238	288	1.35
College	Red Poll	1 5	450	701	251	1.18
Machthilde	Galloway	1 10	651	810	159	1.06
Buttercup	Galloway	1 10	829	1,039	210	1.40

From the above table we see an excellent gain obtained from feeding alfalfa exclusively—thirty-five pounds per day.

At the beginning of the feeding period the hay was of coarser texture, and the rack and feed bunks used were not of the best kind, therefore a great deal of hay was wasted through tramping and shoving it out of the racks. During the later months of feeding a new system of racks was used, thus preventing waste. During these later months it took only twenty-three pounds of

hay per day for each animal from which we obtained our largest gains.

EFFECT OF ALFALFA ON THE HEALTH OF THE CATTLE.

There was a gradual improvement in the looks of the cattle in every respect from the day of beginning to the present writing. At first, not being acquainted with the cattle becoming too loose, customed to alfalfa, we had trouble which we remedied by mixing a small portion of straw with the alfalfa. At present the cattle are in excellent shape, plump, fat, contented, and lazy, and enjoying life to the fullest extent, and every one comments on their fine appearance.

EFFECTS ON THE DIFFERENT BREEDS AND INDIVIDUALS.

We find, from the above table, that the Shorthorn heifer leads in largest gain, 330 pounds. There was no difference in the gains of the Holsteins, 288 pounds; although this is remarkable. We find in the two Galloway heifers a great difference, 210 pounds and 159 pounds, a difference of 51 pounds; although these two heifers are practically the same age and from the same herd.

We may say in conclusion that the Montana professor was right when he said our Klondike was our alfalfa, and if you want to keep in the race you will wake up and go to raising alfalfa.

How to Have Clean Milk Utensils.

H. V. NEEDHAM, BEFORE THE TONGANOXIE FARMERS' INSTITUTE.

I do not consider milk utensils clean unless three things have been done. First, they should be rinsed with water, either cold, or better, slightly warm;

second, thoroughly washed with water and sal soda, Pearline, Gold Dust, or something of that sort, and a good brush; third, scalded with pure water, boiling hot so used that every square inch of the inside of the can or bucket has been touched. I stand my can at an angle of about 40° and slowly turn the can with one hand while pouring the water from the teakettle with the other hand. Then the can is laid down on its side and rolled around, then elevated with the bottom up at an angle and rolled around so that the hot water

flows over every place in the breast and neck while the water empties out. I might add that the cans should be well aired and sunned. Some operators judge a man's cans by the outside appearance. I do not. A conscientious man, if hurried, will neglect the outside of his can, but he will not neglect the inside. I have known men who always have the outside clean and shiny, while the milk inside is sour or tainted.

In all but severe freezing weather the cans, when filled with milk, should be set in tubs or tanks of cold water out of doors and away from manure, then occasionally stirred thoroughly. One of our little strating stirrers is a first rate tool for this. Milk handled in this way will never make the butter-maker look cross, and will add to our reputation and dollars to our pockets.

Right Care of Milk.

As a convincing illustration of several things relative to the right care of milk we are reminded of the experiment of the noted dairyman, H. G. Gurler, De Kalb, Ill., made in 1900. As is well known, Mr. Gurler makes a specialty of producing very pure milk, for which he receives 12 cents per quart in Chicago. His herd numbers 190 cows. To determine just what the effect of thorough cleanliness and good sanitation was on the keeping quality of milk, he sent bottles of this milk to the Paris Exposition. This milk was not pasteurized, but was handled as a man who is intelligent on the milk question would handle it. It was seventeen days on the road and was sweet when it reached the exposition, and did not sour until three days after. It required a chemical analysis to convince the French officials that the milk had not been treated with preservatives.

Importance of the Sire.

S. A. BEDFORD.

A very striking instance of the prepotency of the sire is shown in the form and milking record of the two grade cows "Violet" and "Pansy." These were both from the same grade cow, "Daisy." Violet's sire was a beefy Shorthorn bull, and Pansy's a large Ayreshire bull. Both take after their respective sires in appearance. From the accompanying table it will be seen that the Ayreshire grade not only gave the largest quantity of milk per day, but her milking period was much longer.

Name of cow.	Breed.	Milking period.	Pounds milk.	No. days.	Milk per day, lbs. oz.
Violet	Shorthorn grade	Aug. 10, 1899 to Feb. 17, 1900	1,076	191	5 10
Pansy	Ayrshire grade	Sept. 29, 1897 to Oct. 7, 1898	5,241	373	14 ..
Violet	Shorthorn grade	Aug. 15, 1900 to Jan. 17, 1901	1,085	155	7 ..
Pansy	Ayrshire grade	April 29, 1899 to April 22, 1900	8,252	358	23 ..

Skimming-Station Management Examination.

The following questions were asked the dairy students at the meeting of the Kansas Dairy Association last March. At the close of the students' examination Mr. F. L. Huxtable, Superintendent of the Wichita system of the Continental Creamery Company, answered the questions for the benefit of both the students and the visitors. The questions and answers are as follows:

Question 1.—To what extent may a spindle be used before it is unfit for use?

Answer.—If worn in the bushing run until it does imperfect work or jars from being worn too much. If worn in the pulley pin hole, it will run so long as it holds the pin.

Question 2.—What are the three most important points in operating a separator for perfect work?

Answer.—Speed, feed, and temperature.

Question 3.—How would you know if the eccentric had slipped on your engine?

Answer.—By opening the steam chest lid and seeing that the eccentric is set so as to lead the crank one-fourth of a circle?

Question 4.—What remedy would you suggest for an engine that is using too much steam?

Answer.—Examine the steam chest lid and see that the eccentric is right and that the valve is set right so as to fit both ends of the cylinder equally.

Question 5.—With a vertical boiler how would you find a leaky flue?

Answer.—Would plug the overflow and the injector and run the boiler full of cold water from the water tank that is usually overhead.

Question 6.—What would be the result of a continued leaky hand plate?

Answer.—It will, in a little while, eat the boiler plate away and require the patching of the same.

Question 7.—What effect will filling

SAVE \$10.-PER COW

EVERY YEAR OF USE.

DE LAVAL CREAM SEPARATORS

Prices \$50.- to \$800.-

"Alpha" and "Baby" styles. Send for Catalogue.

THE DE LAVAL SEPARATOR CO.,
RANDOLPH & CANAL STS. | 74 CORTLANDT STREET,
CHICAGO. NEW YORK.

with alkali water have on the reading of Babcock test?

Answer.—Make black test or burnt sediment in fat and show less fat than it actually should be.

Question 8.—Describe your method of making a herd-test for your patron.

Answer.—By arranging with the patrons and have the milkers milk the same cows as usual and we would weigh the amount of milk right at the barn-yard as is given by each cow. Then pour that individual cow's milk from one pail to another and take a sample at once. Repeat the same the next morning so as to have at least the two consecutive milkings and repeat this again frequently as possible during the season and ascertain the exact amount of fat that each cow produces per day.

Question 9.—What would you do to increase your patronage where the sentiment of the community was against you? How would you proceed to change this sentiment?

Answer.—By thoroughly being a man and using the Babcock tester to a success without fear and favor, letting the chips fall where they will, and expose any attempt by anybody to dictate or affect the test.

Question 10.—How far can you successfully haul milk and cream? And if cream is partially churned when delivered, state your remedy.

Answer.—This can not be answered in miles, but in hours, and we can haul milk as far as it can be delivered in the forenoon. We have hauled it twenty-two miles successfully. The churning of cream can best be avoided by using a thermometer to be careful not to accept warm cream, and if the cream is good and cool when placed on the wagon and covered with a wet blanket and then with a dry one, it can be hauled the same as milk.

Stock Breeders' Annual for 1902.

To the stock breeder of the West there are few publications of more di-

VICTORY!

We wish to announce to our patrons and to the farmer-dairyman of Kansas that the Grout bill, providing for the manufacture of oleomargarine on its own merits, and forbidding its sale in imitation of butter has been passed by both houses of congress and has been signed by the president. This is not only a great victory for the dairymen of the country but is a victory for PURE BLOOD, which in these times of adulteration and fraud, means much to the people generally. If the beef steer is King in the West, the

DAIRY COW IS QUEEN.

And now with the encroachment of an imitation product removed, she will soon take her rightful place in the markets of the country. There is no longer any risk in cow investment. The market price is absolutely sure, and at a figure that insures rich returns to every man who milks. Good cows are high but will go higher. No branch of farming will pay so well in the future as dairying. Kansas ought to be at the head of every state in the Union in a few years. And she will. She has the climate, the food and the market.

WE WANT MILK AND CREAM.

We will take all you can bring. We are paying 2 1-2 cents below New York's highest creamery butter quotations for butter-fat in cream—skimmed and in cans—at railroad stations. If you have no skimming station we will sell you a DeLaval hand separator, the best in the market, on easy terms, and you can ship to us direct. We are fighting the battles of our patrons and want them to get the highest possible price for their milk and cream. Our operators get the New York Produce Review every week, which shows the New York market, on which our price is based. See them or write us. The time for business is here. Don't let this opportunity slip by you.

THE CONTINENTAL CREAMERY CO.,
TOPEKA, KANSAS.

The Easiest to Operate, the Closest Skimmer, Simplest and most Durable, is the
KNEELAND OMEGA Cream Separator.
We want you to know how good it is before you buy any other kind. Send for our free book, "Good Butter and How to Make It."
The Kneeland Creamery Co., 20 Concord Street, Lansing, Mich.

WEEKLY WEATHER CROP BULLETIN.

Weekly weather crop bulletin for the Kansas Weather Service, for the week ending May 20, 1902, prepared by T. B. Jennings, Station Director.

GENERAL CONDITIONS.

Warmer weather has prevailed this week with better rains. The rainfall was heavy in the central northern counties; from Geary to the northern part of Jackson; and in the south central counties; it was generally light in the eastern counties south of the Kaw, and in some of the western and southwestern counties.

RESULTS.

EASTERN DIVISION.

Wheat is generally headed in the central counties, though in Chase and Leavenworth it is short; it is in bloom in the south, and is improving in the northern counties. Corn is clean, good stand, growing rapidly, and being cultivated. Oats are growing well, and in Labette are beginning to head. Grass is growing finely. Potatoes are improving; they are in bloom in Crawford, beginning to bloom in Morris and Riley, and will soon be ready for market in Woodson. Strawberries are beginning to bloom in Anderson and Johnson, and are on the market in Allen. Cherries are turning in Allen. Apples have set well in Anderson, but will be a poor crop in Chas and Cherokee. Canker-worms have damaged some fruit and shade trees in Bourbon, Doniphan, Coffey, Jefferson, Marshall, and Shawnee. Alfalfa is fine; it is beginning to bloom in Morris, is ready to cut in Anderson, and is being cut in Elk.

Allen County.—Rain needed; strawberries in market; cherries turning; rye filling, and wheat heading; clover in bloom.

Anderson.—Crops in fine condition; corn, rapid growth; wheat headed; alfalfa ready to cut; red clover coming into bloom; gardens plenty; strawberries ripening; apples set well.

Bourbon.—Weather dry; corn being well cultivated and doing finely; oats, flax, grass, and potatoes doing well but need rain; canker-worms damaging fruits.

Brown.—What corn is up a fine stand; oats doing well; wheat fair; pastures short; will be light hay crop.

early potatoes fine, beginning to bloom; some peaches on high land. Shawnee.—Wheat, oats, and grass making fine growth; corn a good stand; apples and cherries promising; plenty of grass and stock water, and cattle doing well. Woodson.—Favorable week for all growing crops; potatoes looking well and will soon be ready to market.

MIDDLE DIVISION.

Wheat has improved, but it is heading short; soft wheat is in bloom in Sumner. Corn is doing well, except that the heavy rains have washed out some in Jewell and Pratt; it is coming up in Cloud, and is being cultivated in the central and southern counties. Grass has improved in most of the counties and is fine in some, but is still poor in Lincoln and Republic. Alfalfa is doing well in some parts of the division, not so well in other parts; the first crop has been cut in Barber and is ready to cut in Barton. Strawberries are plentiful in Barber; they are beginning to ripen in Barton, but are scarce. Apples are good in Barton, but worms are injuring the trees in Jewell. Grapes have set well in Barber.

Barber.—Conditions improved by rains; wheat prospects fair; corn, cane, and Kafir doing well; alfalfa cut; vegetables and strawberries plentiful; grapes in bloom and promising; fruit prospects, except peaches, very good.

Barton.—Rain not sufficient, mere needed; wheat heading short; alfalfa about ready for cutting; early corn being cultivated, some being replanted; good prospects for apples.

Clay.—Wheat improved in quality and height; rye much improved; oats fine; some rye being cut for feed; grass in good condition.

Cloud.—Good growing weather; some wheat reviving; oats looking well; some corn up; pastures getting good.

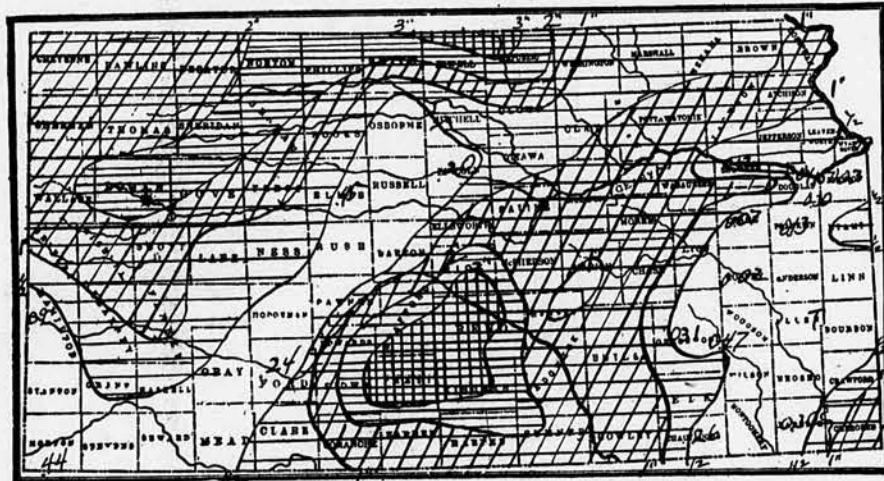
Cowley.—Timely rain put crops and pastures in good condition; wheat rapidly recovering from drouth; vegetables fine; potato prospect good.

Ellsworth.—Early corn up, a good stand; potatoes doing well; wheat a failure; grass good; too dry in northwestern part of county to list corn.

Harper.—Wheat improved by rains, but is thin and short; oats and corn doing well; pastures good.

Harvey.—Fine growth; wheat recovering rapidly; corn and oats growing well; gar-

Rainfall for Week Ending May 17, 1902.



SCALE IN INCHES.

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

Chase.—Good growing week; corn cultivating commenced; alfalfa commencing to bloom; wheat heading short; flax in good condition; cane and Kafir coming up; potatoes and gardens doing well; pastures fine; apple crops will be light.

Chautauqua.—Fine conditions; wheat in bloom, and good yield assured; corn well worked in; pastures fine; stock fattening. Cherokee.—Crops doing well; apples promise very light, peaches half a crop.

Coffey.—Crops growing, with very favorable prospects; corn being cultivated.

Crawford.—Rapid growth; wheat in full bloom and promising; corn doing nicely; potato vines large and in bloom; grass good.

Doniphan.—Wheat improving; some corn being cultivated, stand even; canker-worms injuring orchards.

Douglas.—Crops in good condition.

Elk.—Good week; alfalfa being cut; pastures good.

Franklin.—Good growing week, and all crops doing nicely; rain needed in places. Geary.—Week favorable for growth; some fields damaged by washing; oats making fine growth; late-sown wheat looking promising.

Greenwood.—Corn a good stand, cultivated once, and looks well; grass fine, and cattle thriving.

Jefferson.—Corn generally a good stand; vegetation making rapid growth; apples promise good crop; some orchards damaged by canker-worms; ground in fine condition.

Johnson.—General conditions fine, but rain needed in some localities; corn a good stand, and being cultivated a second time; strawberries turning.

Labette.—Corn being cultivated third time and growing rapidly; oats beginning to head, with good prospects.

Leavenworth.—Wheat heading short, but in good condition; corn up; oats still doing well; alfalfa in fine condition; potatoes and gardens doing nicely; pastures good, and stock doing well.

Marshall.—Corn up, ready to cultivate; wheat and oats much improved; potatoes and gardens in good condition; canker-worms doing much damage to fruit-trees.

Miami.—All crops doing nicely; wheat heading, with fine prospects.

Morris.—Good week; corn being cultivated and making rapid growth; wheat heading; potatoes coming into bloom; alfalfa beginning to blossom; pastures making good growth and cattle doing nicely; gardens fine.

Osage.—Crops doing well; corn doing nicely, but needs rain; wheat in good condition.

Riley.—Fine growing week; wheat improved; corn growing; pastures good;

den truck doing nicely; worms in ornamental trees.

Jewell.—All crops improved by rains; much corn washed out; canker-worm damaging apple- and forest-trees.

Kingman.—Wheat, oats, and rye growing rapidly; corn doing well; ground in good condition.

Lincoln.—Too dry for farm work; alfalfa a poor crop; meadows and pastures poor, and stock not doing well; wells falling.

McPherson.—Good growing week; corn growing and being worked; oats look well; wheat a thin stand, a fair crop.

Phillips.—Wheat better than anticipated; corn coming up nicely, good stand; good growing week.

Pratt.—Good rains; wheat heading, and promises a fair crop; crops doing well, but some corn washed under; some fields of Kafir to be re-listed.

Reno.—Fine growth; wheat headed and looks fair; oats look well; corn growing nicely and cultivation begun; strawberries ripening, but scarce.

Republic.—Wheat prospects improved, but still poor; grass from seed making poor growth; ground in nice condition.

Saline.—Rain started growth; wheat improved; corn a poor stand, and much being replanted; alfalfa light; pastures looking better.

Sedgwick.—Wheat and oats much improved by rain; straw short, but berry full; corn coming on nicely; grass a good height; potatoes doing well; fruit promising, many peaches winter-killed.

Smith.—Too dry to list corn into wheat land.

Stafford.—Crops doing well; early garden truck on market.

Sumner.—Wheat heading short, soft wheat in bloom; corn, oats, and cane growing rapidly; pastures good; ground thoroughly soaked.

Washington.—Wheat prospects poor; some corn to be replanted; grass and alfalfa doing well; stock improving; rain needed.

WESTERN DIVISION.

Wheat has improved in the northern counties; in Ford it is jointing short; in Clark the irrigated is heading. Corn is coming up in all parts, and generally shows a good stand. Alfalfa is fine; the first crop is being cut in Clark, and is nearly ready to cut in many of the other counties. Grass is generally in very good condition, and cattle are thriving on it. Barley and oats are doing well. Forage crops are being planted, and are coming up well.

Clark.—Weather favorable; cutting of alfalfa commenced; irrigated wheat and barley heading.

Decatur.—Rapid improvement in all

The Way That Loses ..Money..

The Old Way. The Hard Way. The Long Way. The Poor Way.

Table with 5 columns: Dairyman, Milk Hauler, Skimming Station, Creamery, Consumer.

The Way That Pays.

The New Way. The Short Way. The Easy Way.

Table with 3 columns: Dairyman, Creamery, Consumer.

The road from the Dairyman to the Consumer on the skimming station route is a long, rough, and tedious road. The man that takes it has an expensive trip. For every Ten Dollars realized, there is Six and a half expended. The road from the Dairyman to the Consumer on the new route, the Hand Separator Route, is a short, smooth, and delightful road. The trip is cheap. For every Ten Dollars realized, there is less than One expended. Do you want to reach the consumer by the new route? If so, write to the

BLUE VALLEY CREAMERY CO., ST. JOSEPH, MISSOURI.

Pioneers of the Best Creamery System On Earth.

crops; corn promising a full stand; forage crops being planted; first crop of alfalfa nearly ready to cut.

Finney.—Good rains caused rapid growth of crops and grass; much forage being planted.

Ford.—Wheat jointing and very short; oats, barley, and corn look fine; alfalfa doing well; cattle doing nicely.

Graham.—Wheat greatly improved; alfalfa growing nicely, ready to cut; crops doing well; stock thriving on pasture.

Grant.—Grass refreshed by local showers; cattle doing finely; too dry for planting.

Hamilton.—Crops and ranges growing, but suffering where local showers did not touch.

Lane.—Conditions improved by rains; alfalfa beginning to blossom; grass better and stock improving; wild grapes in bloom.

Morton.—Fine growing weather.

Ness.—Hot wet week; corn looking well, but small grains badly damaged and getting weedy; general crop conditions improved; alfalfa and grass fine; gardens improving, and potatoes doing well; poor prospects for fruit.

Norton.—Fine stand of corn, some being worked; large area of cane and Kafir; alfalfa doing well, and pastures good; a good half crop of wheat may be secured, under favorable conditions.

Scott.—Rain general; oats and barley doing well; wheat badly damaged.

Sheridan.—Wheat improved; earliest heading; corn coming up, a good stand; alfalfa and pastures fine; hail damaged crops in spots.

Thomas.—Crops benefited by rains; some pieces of wheat promising; range grass abundant; alfalfa nearly ready to cut; early corn coming up nicely; gardens doing well; heavy rain damaged some Kafir and cane.

Trego.—Wheat improved and all crops revived; grass and hay crops in good condition.

Wallace.—Wheat, barley, rye, range grass, alfalfa, and gardens making fine growth; corn and forage crops up nicely.

THE MARKETS.

Kansas City Live Stock Market.

Kansas City, May 19, 1902.

Prices of fat cattle during the week just past were the highest of the year. In different parts of the country, and particularly in the manufacturing centers of the East, laborers have boycotted the beef products of the packing firms, but the demand from other sources continued good and this, in conjunction with a noticeable curtailment in receipts at the big markets held prices up to a high standard. Receipts of cattle at this market last week were 20,000 head, which was 4,000 more than the previous week and almost on a par with a year ago. This was the first week in a long time in which receipts were right in line with those of the corresponding days of 1901. Prices stiffened up early in the week and by Wednesday steers had reached the high level of \$7.15. J. M. Clevenger, of Polo, Mo., marketed the bunch at that price, which he declared was the highest he had received since the Civil War. There was a good demand all the while for choice handy-weight yearling steers and heifers. The best lots ranged from \$6.75 to \$7. Trashy light weights and grass beeves and heifer stock were dull and in many cases lost shippers money. A drop in prices of stock cows and stockers and feeders was had, amounting to 25 to 35c. Veal calves lost the snap they exhibited the previous week and sold off 25 to 50c.

Continued restrictions in supplies featured the hog market during the week. Arrivals at this point were right at 42,000 head, less than half of the supply in the corresponding days of 1901. Other markets are beginning to feel the effect of the hog shortage and packing figures show big decreases from a year ago. The best price of the week was reached on Wednesday when swine sold up to \$7.42 1/2, the highest figure of the year. Nothing topmy arrived the latter part of the week. Values closed at the high point, or a good 10c higher than

the close of the previous week. Packers continue to scramble for the heavy hogs and are not disdainful of the medium weight stock, but they bear down on light and trashy kinds with a vengeance.

Sheep receipts were 15,100 head, a moderate supply. Texans formed the bulk of the offerings. The fore part of the week grass sheep sold off 25c, but later a part of the loss was regained. Native lambs and muttons sold better than for many a week. Kansas fed Western lambs brought \$6.80 on Friday, about the best price paid here for such sheep this season. Spring lambs climbed out of the \$7 rut and sold as high as \$7.15. The outlook for lamb prices is bright, but shippers would do well not to figure on any strong advance.

Horse and mule receipts were light. A better feeling was apparent in the mule market, owing to a stronger demand from outside sources. Horses however, developed a weakness that showed a decline of from \$5 to \$10. The great demand that has been had from the East all spring seems to have had the edge taken off it of late and bidding is slower and lifeless when compared with April or March. Shippers and farmers would do well to remember that plain horses are hard to sell at this season of the year. H. A. POWELL.

Last Week's Grain Market Review.

Topeka, Kans., May 19, 1902.

The situation in grain circles remains almost unchanged. The effect of the Government report on wheat, although construed to be bullish, did not advance prices. This was partly accounted for because of the rains early this month, which it is claimed repaired most of the damage done by a severe drouth. Foreign crop advices are of the most flattering kind and consequently it is asserted foreigners do not care to bid extravagant prices for our wheat.

But notwithstanding this claim, over five million bushels of wheat were exported last week and since July 1 of last year our total exports of wheat have been 225,265,000 bushels as against 183,600,000 bushels for the same period a year ago. In other words we exported over forty million bushels more than we did for the same time a year ago, and with an approximate sixty million bushels fed to animals, it is not likely that our wheat surplus at this time is as large as it was a year ago. Surely the visible supply does not indicate it. The supply is over ten million bushels less than a year ago, with prices only slightly higher.

Corn, on account of the favorable weather, has suffered a considerable decline, and it will be difficult to keep up the present values if the favorable growing conditions continue.

Markets everywhere did not show any sign of animation and prices were only steady for cash grain at the close of the markets to-day.

Chicago.—No. 2 red wheat, 80 1/2 to 82c; No. 2 hard winter wheat, 76 1/2 to 77 1/2c; No. 2 corn, 61 to 62c; No. 2 oats, 43c.

Kansas City.—No. 2 red wheat, 77 1/2c; No. 2 hard wheat, 74 1/2c; No. 2 corn, 63c; No. 2 oats, 43 1/2c.

Topeka.—No. 2 hard wheat, 75c; No. 2 corn, 65c. F. W. FRASIUS.

Elgin Butter Market.

Elgin, Ill., May 20, 1902. The quotations committee announce butter 22c.

Several agricultural societies in Germany, cooperating with the Prussian ministry of agriculture, has offered a prize of \$7,500 for a process of drying potatoes so they can be successfully stored for years at a saving in cost of storage and transported in greatly reduced bulk. The cost of the drying process must not exceed 5 cents per hundredweight of potatoes.

To make cows pay, use Sharples Cream Separators. Book "Business Dairying" and Catalogue sent free. West Chester, Pa.

Special Want Column.

"Wanted," "For Sale," "For Exchange," and small or special advertisements for short time will be inserted in this column, without display for 10 cents per line of seven words or less, per week.

CATTLE.

RED POLL BULLS FOR SALE—From 7 to 11 months old. D. F. Van Buskirk, Blue Mound, Kans.

FOT SALE OR TRADE—I have a young herd of registered Shorthorn cattle. I will sell or trade on a small farm in eastern Kansas, eastern Nebraska, or eastern Oklahoma.

D. P. NORTON, Dunlap, Kansas, has a few young bulls, by British Lion, fit for service the coming season.

TEN REGISTERED HEREFORD BULLS FOR SALE—\$75 to \$125; 3 unregistered thoroughbred bulls, \$50 to \$60; 60 grade cows, \$35 to \$50; with calves.

FOR SALE—Two registered Angus bulls, 14 to 16 months old; good ones. R. L. Milton, Stafford, Kans.

FOR SALE—My entire herd of high-grade Hereford cows and heifers; also one registered Hereford bull 13 months old.

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

FOR SALE—Six good Shorthorns bulls, four of them straight Cruickshanks; prices reasonable; now is your chance to get a good individual.

TWO full-blood Polled Angus bulls, without pedigree, can be bought very cheap at Conrad Kruger's ranch.

FOR SALE—Three pure Cruickshank-Shorthorn bulls. Call on or address H. W. McAfee, Topeka, Kans.

SHORTHORN CATTLE SALE—I will offer at public sale, 1 1/2 miles south of Marysville, at 2 o'clock p. m., on Tuesday, October 15, 17 registered Shorthorns, 19 high grade Shorthorns, and 3 thoroughbred Jerseys.

HORSES AND MULES.

FOR SALE—One Clyde stallion, 3 years old May 14, weight 1,610 an extra good horse, fine style and action; will sell him right if sold soon.

FOR SALE—Black Percheron stallion Monthaber 13162 (24057), 12 years old, weight 1,800 pounds; an extra breeder; price \$400.

PROSPECT FARM—CLYDESDALE STALLIONS, SHORTHORN CATTLE and POLAND CHINA HOGS. Write for prices of finest animals in Kansas.

SHEEP.

FOR SALE—100 head of well-bred Shropshire ewes. Reason lack of pasture. Correspondence solicited.

WANTED—To get pasture for 400 grade Shropshire sheep, or put them out on shares, or sell them. Would give time on part.

FARMS AND RANCHES.

FARM FOR SALE OR EXCHANGE—I have a large farm in eastern Kansas. I would like to exchange for a smaller one, or land that would do for a sheep ranch.

FOR SALE—Good improved farm, at a great sacrifice, in an ideal climate; 160 acres, only \$3,200. Will stand close investigation.

160 Acres, 7-room house, timber, bottom land, well located. Buckeye Agency, Agrícola, Kans.

FOR corn, alfalfa, and wheat land, ranches and farms, write to Charvoz & Co., Emporia, Kans.

SOME BARGAINS in farms and ranches. Correspondence solicited. J. M. Patten and Co., Dighton, Kans.

POULTRY.

BLACK MINORCAS, biggest layers of biggest eggs. Eggs for hatching, \$1.50 per 15. Also at same price eggs from choice matings of Houdans, Buff Laced Polish, White Crested Black Polish, Buff, Brown and White Leghorns, and American Dominiques.

SEEDS AND PLANTS.

SOY BEANS FOR SALE—Early yellow variety; will grow; \$2.25 per bushel; sacks free.

FOR SALE—Choice early orange cane-seed. Write for price and samples.

CANE-SEED—KAFIR-CORN—Choice white Kafir, choice cane-seed. All home-grown, thoroughly tested and warranted to grow.

MAMOTH YELLOW SOY-BEANS—Fine seed, best variety to grow; price, \$2.25 per bushel.

FOR SALE—Improved Early Orange sorghum-seed, \$1.25 per bushel.

100,000 SWEET POTATO PLANTS—At \$1.75 per thousand by A. G. Landis, Lawrence Kans. discount to dealers.

CANE AND KAFIR-CORN SEED—Choice re-cleaned; quantities to suit.

SEED CORN FOR SALE—Choice white. Grown in Kaw Valley. Crops of 1900 and 1901 tipped, shelled, and sacked \$1.25 per bushel.

SEED SWEET POTATOES FOR SALE—All leading kinds; also plants in their season.

WANTED—If you wish to buy or sell corn, oats, hay, cane seed, Kafir-corn, corn chop, or anything in the feed line, correspond with us.

SWINE.

CHESTER WHITE BOAR—For sale, 20-months boar by Eclipse. Sure breeder and guaranteed to be all right.

FANCY POLAND-CHINA Boars; of fall furrow ready for use, sired by full brother of Missouri Sweepstake Winner; Priced to sell.

MISCELLANEOUS.

GAS-RELEASING BIT—Write to Wilbern Bush, 711 North Market Street, Wichita, Kans., and ask for his circulars showing his great invention for preventing bloating in dairy cattle and other stock.

DR. CLARK'S Instant Relief and Absolute Catarrh Cure. One month's treatment 50 cents.

FOR SALE—20 Iron rain-water tanks at \$1.50.

\$25 REWARD—Lost, since January, yellow Shepherd dog, darker on back, white breast, white face, front feet white, bushy tail with tip of white.

EARLY YELLOW SOY-BEANS—Good quality. Seed beans for sale.

AM WANTING to buy Osage hedge posts by the carload. Parties who can furnish same correspond with D. K. Unsicker, Wright, Iowa.

WANTED—Pasture for cattle, or will lease a good pasture.

COLLIE PUPPIES for sale, 3 1/2 months old, unexcelled in breeding, and individual qualities.

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WOOL WANTED—Will pay highest market price for wool. Sacks for sale.

THE BEST CUP OF COFFEE and plenty of good things to eat. Farmers' trade a specialty.

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UNITED STATES AND FOREIGN PATENTS F. M. COMSTOCK & CO., Office, 529 Kansas Avenue, Topeka, Kans

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

The Stray List.

Week Ending May 8.

MARE—Taken up by E. L. Miller, in Grant tp., (P. O. Otto), April 6, 1902, one bay mare, 3 years old; valued at \$25. Also one brown mare, 1 year old, indistinguishable brand; valued at \$15. Also one black horse, 1 year old; valued at \$15.

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wish to buy, sell, or exchange farms or other real estate, business, or personal property of any kind anywhere in the United States? If so, send full description, location, and price and we will tell you how to find a buyer, a seller, or a trader. No commissions to pay. No charge for listing your property.

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Bulls, Cows, and Heifers, and Poland-China Boars.

One Jack and one Saddle Stallion for sale in reach all. Write your wants.

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Bought at Recd'ers' Sale. Sheets either flat, corrugated or "V" crimped. No tools except a hatchet or hammer is needed to lay the roofing. We furnish free with each order enough paint to \$1.75 cover and nails to lay. Price per square, \$1.75. A square means 100 square ft. Write for Free Catalogue No. 61 on General Merchandise. Chicago House Wrecking Co., West 26th and Iron Sts., Chicago, Ill.

Silberman advertisement featuring an illustration of a man in a suit and hat, and text: "Make arrangements now for consigning that clip of yours to the trade marts, so you can avail yourself of the high prices quickly when they come."

Low Round Trip Rates VIA UNION PACIFIC FROM MISSOURI RIVER. \$15.00 To Denver, Colorado. \$19.00 To Denver, Colorado. \$25.00 To Salt Lake City and Ogden, Utah. \$25.00 To Glenwood Springs, Col. \$30.00 To Salt Lake City and Ogden, Utah. \$31.00 To Glenwood Springs, Col. \$32.00 To Salt Lake City and Ogden, Utah. \$45.00 To San Francisco or Los Angeles, Cal. \$45.00 To Portland, Ore., Tacoma and Seattle, Wash.

TWO RACKS OF TEXAS A NEW FAST TRAIN. Between St. Louis and Kansas City and OKLAHOMA CITY, WICHITA, DENISON, SHERMAN, DALLAS, FORT WORTH. And principal points in Texas and the Southwest. This train is new throughout and is made up of the finest equipment, provided with electric lights and all other modern traveling conveniences.

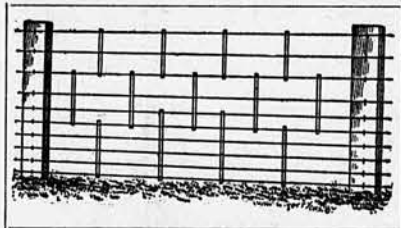
Equal to One Inch of Rain. 230 Write for Prices and Circulars TOPEKA FOUNDRY, Topeka, Kans. Have needed them this spring, already. (Patent applied for.) Can be used East or West. Can be used at any time. Can be used on anything planted in rows. Will pack anything planted in rows as well as prepare a good seed-bed. It is no experiment. One rolling is equal to one inch of rain.



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of a bull, just put a PAGE FENCE between you and him, then you'll be perfectly safe.
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Save Money
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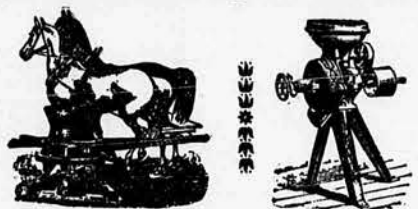
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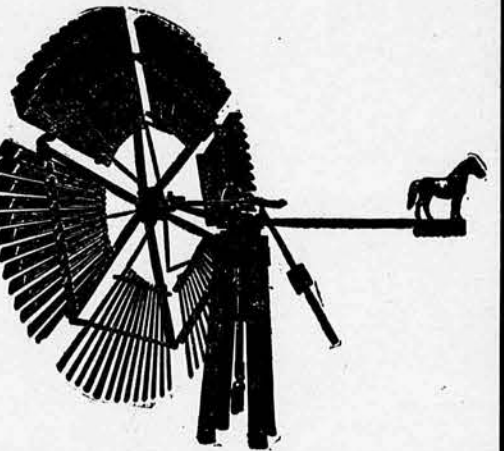


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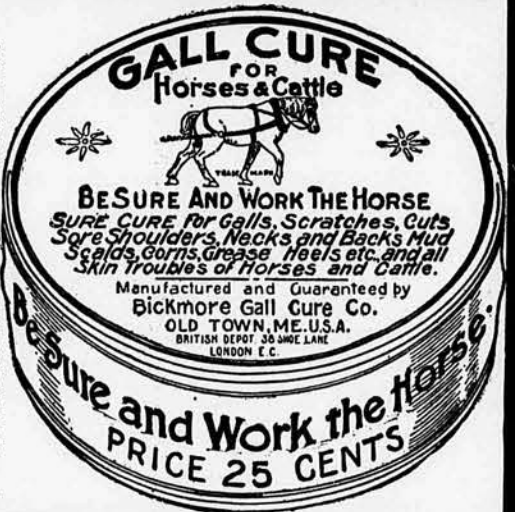


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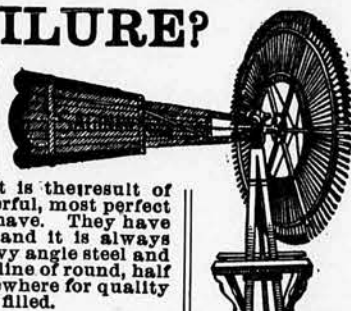
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It is known and used all over the world. Unequaled for Collar and Saddle Galls, Harness Chafe, Bruises, Cuts, Mud Scalds, Scratches, Grease Heel, Hock Burn, etc. "Be sure and work the horse" while treating him. No need to lose his service. When buying, call for "Bickmore's" and see that you get the gray horse on the box. None genuine without it. If not exactly as recommended and you are dissatisfied after a thorough trial, go to the dealer and get your money back. Write to day. This offer will appear but twice.
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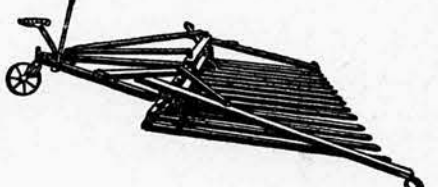
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For Alfalfa and other heavy crops. If your dealer does not handle it, write to
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distributing 1000 catalogs for us in your town. Agents can make money fast on our wonderful 1902 offers.
1902 Models, \$9 to \$15
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500 Second-hand Wheels
all makes and models, good as new, \$3 to \$8. Great Factory Clearing Sale at half factory cost.
We **SHIP ON APPROVAL** and **10 DAYS TRIAL** to anyone in U.S. or Canada, without a cent in advance.
Write at once for net prices and special offer to agents. Tires, equipment and sundries, all kinds, half regular prices.
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THE TRIANGULAR NON-DILUTION Cream Separator
Automatically produces 20% more cream than old process. No ice, chemicals, crocks, pans, complicated machinery or power. One operation strains, aerates and ventilates milk. Three thin sheets of milk flow slowly down cold sides of Milk Vessel suspended in Water Reservoir and separation begins at once. Perfect milk for table. Saves labor and time. Makes money on each cow. Simple, convenient, inexpensive and almost indestructible. Has every merit of the higher priced separators and many desirable original features. Write for descriptive circulars and special offers to agents and farmers.
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By actual tests milk has kept 36 hours longer than under other conditions.
Indorsed by practical dairymen and creameries. Write for price and testimonials
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If so, look over this list and see what the SANTA FE has to offer. It may be what you are looking for. If not, there are other excursions to be announced later.

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- Account Travelers' Protective Association. Tickets on sale May 27 to June 8 inclusive, limited 60 days from date of sale.

- San Francisco and Return.....\$45.00.
- Account Annual Conclave Knights of Pythias. Tickets on sale August 2 to 8 inclusive. Final limit September 30. Choice of direct route returning.
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- Account Annual Meeting Benevolent and Protective Order of Elks. Tickets on sale August 7-8-9-10. Good returning as late as September 30.
- Annual Reunion G. A. R., Washington, D. C., in August. Rates and conditions to be announced later.
- Wichita, Kansas, and Return.....\$4.62.

- Democratic State Convention. Tickets on sale May 21 and 22. Final limit May 24.
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and after giving it a few days she began to improve and finally fully recovered. She is now past five years of age and the very picture of health."

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I will sell registered sows or gilts open or bred, 6 months old boars and weaned pigs of the most fashionable breeding, at reasonable rates. Pairs, trios, and small herds not akin. Missouri's Black Chief, Perfection, and Black U. S. blood. Can also sell a few choice Berkshire boars of the very best breeding; 4 Shorthorn bull calves for sale.

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A few choice bred Poland-China Boars for sale, some choice open gilts and bred sows. B. P. Rock eggs from pens \$2 for 15, free range flock \$1 for 15, \$5 per 100, from high scoring, line bred stock. Satisfaction guaranteed.

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Ridgeview Farm Herd of LARGE ENGLISH BERKSHIRES

Pigs of fall farrow for sale. No more bred gilts. White Wyandotte eggs, \$1.50 per 15. MANWARING BROS., Lawrence, Kans

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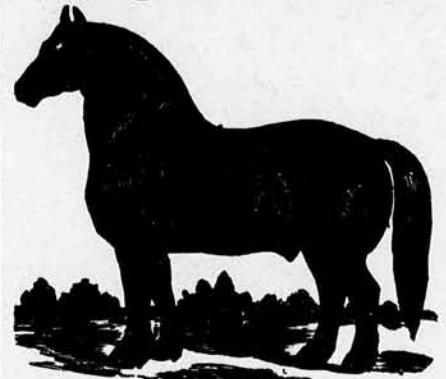
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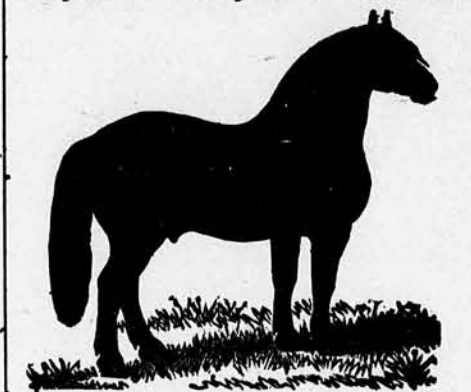
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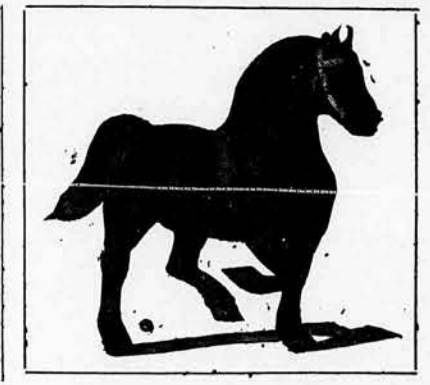
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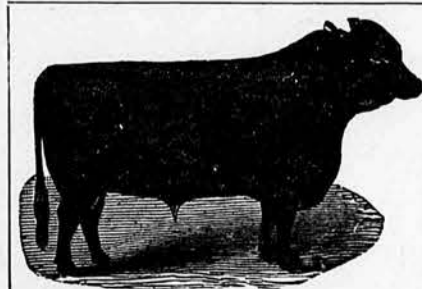
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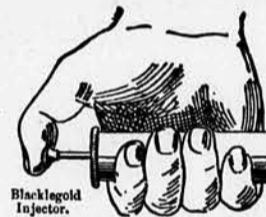
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