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**Table of Contents**

Baby beef.....566  
Blue Andalusians.....569  
Boy, a very queer.....561  
Children's day.....570  
Clovers for Oklahoma hogs.....555  
Colorado grass.....554  
Corn for hogs be soaked? should.....557  
Country, a new.....564  
Country school, a word for the.....562  
Dynamite stumps, how to.....573  
Eggs, airing the.....569  
Executive committee's report (grange).....570  
Feeding experiments, Oklahoma.....557  
First principles.....556  
Good-roads convention, international.....564  
Grandmother and me (poem).....561  
Hen-house, conveniences of.....569  
Housekeepers, hints of.....563  
Italian poplars.....556  
Juvenile literature.....558  
Kafir-corn, value of varieties.....566  
Kansas at the World's Fair.....553  
Kansas—her chief source of income.....565  
Kansas live stock.....557  
Lyric of action (poem).....562  
Observations by the way.....553  
Over the border—a story of the Kansas pioneers.....560  
Pear-blight, crude oil or Bordeaux mixture for.....556  
Pork the year round, fresh.....572  
Poultry as insect-destroyers.....569  
Poultry notes.....569  
Road improvement.....564  
Road to Grumbletown (poem).....560  
Seed from late-planted Jerusalem corn and Kafir-corn.....554  
Shorthorns, color in.....557  
Skim-milk questions.....567  
Soil fertility? how shall we maintain the.....555  
Surface cultivation for corn.....554  
Time, divisions of.....563  
Veterinary department.....572  
White flour is best.....553

One of the sights to be seen at the World's Fair now open at St. Louis is the exhibit of road-building shown all over the grounds, but more especially in the eastern side in the section included within the model city. Here will be found scientifically-constructed roads built of all sorts of materials from different sections of the Union. From the hard trap-rock of New Jersey to

the common soil of Missouri, the materials used in these sample roads include the limestone of the country, gravel from the river-bed, shells from the seaside, and other materials such as cinders, waste materials from the coal-mines, refuse from potteries, slag from smelters, and other waste-products of manufactories. While the finished roads will be object lessons that will be well worth a journey to see, we regard it as particularly fortunate that the sections of these various kinds of roads were just in process of construction during the National and International Good-Roads' Congress which held its session in St. Louis during the week of May 16 to 21. Not only were the materials and the various methods of handling them objects of interest to the visitors, but the machinery with which they were hammered into shape taught their own lessons. President Francis, of the Exposition Company, stated in a public address that if his past experiences were to be repeated, with his present knowledge he should build the roads about the exposition grounds before a single building was erected. He showed where thousands of dollars could have been saved, in time alone, had the roads been well and properly built so that the materials for the construction of the buildings, as well as those for the exhibits could have been distributed rapidly and easily from the termini of railroads to their final destination. The keynote of the whole exposition is to show processes, and nowhere is it better shown than by the good-roads section of the model city in front of the Manufactures and Liberal Arts Buildings.

**OBSERVATIONS BY THE WAY.**

A trip to Wichita, last week, presented to the car-window observer a panorama of magnificent prospects. True, the wet weather had interfered with corn-planting, especially in Osage, Lyon, and Chase Counties. Further south and west the cultivators were busy in the cornfields and the stand was excellent. So far as the wheat-belt was penetrated, this crop presented a perfect appearance. The stand was excellent, the growth good, and the heads beginning to appear. Oats also presented a pleasing prospect. But the crop which showed the largest promise of maturing dollars was the alfalfa. Whether the weather is wet or dry, warm or cold; whether the season is late or early, the alfalfa never forgets to grow. It starts as soon as the soil thaws out in the spring and grows on until Jack Frost makes vegetation impossible in the late fall. Its presence means growthy animals, and full milk-pails and egg-baskets. Its growth enriches the soil, makes it less susceptible to the effects of excessively wet or excessively dry weather, and cures hardpan. If for no other reason, every alfalfa-farmer deserves to get rich because of the part he has in beautifying the landscape.

Of all the cities whose bank-clearings are noted by the financial agencies, Wichita is most representative of agricultural conditions. Her transactions are based almost exclusively on agricultural products and her prosper-

ity is a reflection of the agricultural prosperity of the magnificent region of which she is the center and commercial emporium. The bank-clearings of Wichita have, for a long time, crept steadily upwards, each week showing a large increase over the corresponding week of the preceding year. These clearings have passed the mark of one million dollars a week now, showing exchanges settled through the banks of Wichita in weekly amounts requiring seven figures to express them.

The agricultural prosperity reflected in the bank-clearings of Wichita is also shown in the brisk trade of the several prosperous cities of that vicinity. While no one of these cities records exchanges of sufficient magnitude to appear in the published weekly reports, the trade of these cities is experiencing the effects of good crops and good prices.

But, the most pleasing feature of a trip through the country is the thrifty appearance of the farms and the farm homes. Better and more permanent buildings and fences, better-kept orchards and grounds, and in general a higher state of cultivation than ever before, greet the observer.

**WHITE FLOUR IS BEST.**

The question of the relative values of the several parts of the wheat as human food has long been under discussion. For more than a generation there have been well-intentioned persons who would have the millers throw away their bolting-cloths as being an invention of the Evil One to deprive mankind of the most nutritious part of the wheat and give it to the cows. The honest chemist has been drawn upon, and has honored the drafts, for facts on which to base the assertion that in removing the bran from the whole-wheat product, the bolting-cloth was taking out a part rich in protein—the very substance needed to build muscles of steel-like strength and brains and nerves suited to present-day requirements. Even the placid cow which ate the bran was called upon to testify to its excellence as a food on account of the increased flow of milk she was able to produce when bran formed a liberal proportion of her ration.

Again, some persons whose alimentary canals have become inactive and liable to become clogged in some parts have been placed on a bran diet to their advantage.

Reformers are, in one respect, like the poor—they are always with us; and like the poor they are not always the broadest-minded people in the world. If one should undertake to observe all the prohibitions of all the dietary reformers he would surely die of starvation. Among the most persistent of the dietetic reformers are those who insist that "man must get back to first principles" and take his food more nearly as Nature has prepared it; that the wheat-grain contains all elements needed to build and sustain the human system, and that a great mistake is made when any part, especially the bran, is removed.

But now come the scientists—yea, even the chemists—and reveal a little additional truth to the undoing of the

dietary reformers' pet contention. Professor Henry Snyder, of the University of Minnesota, has just published a bulletin giving account of extensive "Wheat and Flour Investigations" in which he found that the three kinds of flour contained protein as follows:

Straight-grade.....	13.60 per cent
Entire wheat.....	13.72 per cent
Graham.....	14.21 per cent

In this showing Professor Snyder may be freely quoted by the reformers and especially by the advocates of Graham flour.

But the Professor made careful investigations of the percentages of protein digested in the human alimentary canal when these flours are eaten. He found that the protein in the straight grade is much more fully digested than in the others. His findings as to protein are as follows:

Grade of flour.....	Total.....	Digested.....
Straight-grade.....	13.60	12.01
Entire wheat.....	13.72	11.88
Graham.....	14.21	11.77

It is thus seen that while the Graham flour actually contained more of the valuable constituent, protein, the amount of this constituent available for human nutrition was considerably larger in the straight grade, while the entire-wheat flour was intermediate both in total and in available protein, but was considerably less nutritious than the straight grade.

In carbohydrates, the other principal nutritive constituent of flour, the straight grade is superior both in total and in available percentage.

Finally, the investigation showed the following as the amounts of energy available to the human system from one gram of each of these kinds of flour:

Straight-grade.....	3.510 calories
Entire wheat.....	3.481 calories
Graham.....	3.379 calories

Professor Snyder compares his results with those found by other eminent investigators who have taken the trouble to determine, not merely the amounts of nutrients present in the several kinds of flour, but also the amounts that are realized from them when used as human food, and finds substantial agreement with his own results.

Now let the old-fashioned person who enjoys the creamy-white bread his mother used to make partake of the same with peace of mind, knowing that it not only is pleasant to look upon, delightful to taste, but is also the most strengthening bread that he can eat, and that the dietary reformers, while intending only to punish humanity for its own good, have lacked full information on the important problem of nutritive values based on digestibility.

**KANSAS AT THE WORLD'S FAIR.**

To Kansas belongs the proud distinction of being the only State, either foreign or native, which had its exhibit complete and perfect on the opening day of the World's Fair. For the first time in history the importance of agriculture, which is the very foundation of a nation's prosperity, has been properly recognized. The Agricultural Building is the largest on the grounds. It is 525 feet wide and 1,800 feet long.

(Continued on page 564.)

## Agriculture

### Colorado Grass.

I enclose a clipping about "Colorado" grass, the first I have heard of it, and write to know what you know about it. It occurred to me that if it would stand this climate it would be a fine thing for the sand-hills and sand-draws of western Kansas. I have a ranch in the southwest corner of Pratt County, at Springdale, and I have a sandy draw with about fifty acres in it. I would like to get grass that would grow on it. I read your articles in the KANSAS FARMER with much interest, and hardly a week passes that I do not cut out an article and mail to one of my farm tenants here in Douglas County, or my foreman, F. B. Cunningham, at Springdale, Kans. R. C. JOHNSON.

### Douglas County.

I am not acquainted with the grass named in your letter, but from looking it up I find that the Colorado grass (*Panicum texanum*) grows luxuriantly in the river valleys of western Texas, as stated in the clipping from Farm and Fireside which you enclosed in your letter. From the fact that the grass starts very late in the season in its native soil, it is hardly probable that it will be found hardy to grow as far north as Pratt County, Kansas. It may be well worth trying, however, and you can possibly secure seed by writing to the director of the experiment station, College Station, Texas. From reading the description of this grass, however, it does not appear to me to be adapted for growing on land which you desire to keep continuously in pasture, since it is an annual and does not form sod. A perennial grass which forms sod and binds the soil would be preferable for such use.

It is rather difficult to advise what grasses to grow in the sandy draw which you have described. If the native grasses do not grow there, it is hardly probable that the domestic grasses can be made to start. However, if the ground is fertile enough to grow crops it should grow grasses also. At present I can recommend nothing better than a combination of *Bromus inermis* and Western rye-grass, sown at the rate of about ten pounds each per acre. It may not be advisable to sow too large an area in making a trial of these grasses. Suppose you prepare a few acres by disking during the summer and fall, and seed early next spring. I would also try seeding a little alfalfa on this land and it would be advisable to sow a small amount of alfalfa with the grasses. Land can not be kept permanently in grass and continue to produce profitable pasture and meadow without fertilization, unless legumes, such as alfalfa or clover, are sown with the grasses. The legumes take a large part of their nitrogen from the air, build up the fertility of the soil and really act as host plants or feeders to the other grasses.

If such land as you describe lay farther south, in Oklahoma or Texas, the Bermuda grass (*Cynodon dactylon*) would be the grass adapted for such soil. This is a perennial and one of the greatest soil-binding grasses and an excellent pasture-grass. The grass is being grown successfully in Oklahoma and it is possibly worth while to try it as far north as Pratt County. At this station, however, it has not proven hardy. The usual method of propagating this grass is to plant the roots. It may, however, be raised from the seed. I believe you can secure roots of this plant from the Oklahoma Experiment Station, Stillwater, Okla. The seed of the grass named may be secured from almost any Western seedsmen, except perhaps that of the Western rye-grass. This grass is

as yet not grown very extensively in this State. You can secure seed from Northrup, King & Co., Minneapolis, Minn., and possibly from F. Barteldes & Co., Lawrence, Kans.

A. M. TENEYOK.

### Seed from Late-Planted Jerusalem Corn and Kafir-Corn.

I should like to inquire the probable results of planting Jerusalem corn or Kafir-corn, on wheat stubble, from July 4 to 10. I should like to raise it for the grain if it would mature.

Marshall County. H. C. AXTELL.

In the trial made at this station last season, it required 107 days to mature the seed of red Kafir-corn which was planted June 10, and 110 days to mature Jerusalem corn. Usually it requires a little more time to mature Kafir-corn than was recorded last season. The late-planted Kafir-corn, as a rule, will mature in a less number of days than that which is planted early in the season, provided the soil be in favorable condition for germinating the seed when it is planted, and the balance of the season remains favorable for growth. The first killing frost occurred October 16 at this station. Usually earlier frost which would injure immature Kafir-corn may be expected. Kafir-corn planted as late as July 4 could hardly be expected to mature a full crop of seed in the average season, although it might make a good crop of fodder. Allowing 107 days in which to reach maturity, it would not mature before October 20.

An objection to growing Kafir-corn after wheat, in the manner suggested, is that the soil is apt to be too dry to germinate the seed and produce a strong growth of the young plants, with the result that the stand will usually be thin with a dwarf growth of the crop. Again, Kafir-corn is said to be a hard crop on the land, since poor crops are often harvested from land which grew Kafir-corn the previous season. This effect will be intensified by growing the two crops, Kafir-corn after wheat, in the same season. We have not grown the crop in this way at this station, so have no actual data to report.

A. M. TENEYOK.

### Surface Cultivation for Corn.

I would like to have some information about surface cultivation of corn. Has the station ever experimented with the Halleck weeder or any other of the same shape, and what has been the result? What kind of implements do you use for surface cultivation?

R. W. MELANDER.

### McPherson County.

In 1893-7 an extensive series of experiments in corn-culture was undertaken at this station. The results of these experiments were published in Bulletins Nos. 45, 56, and 64, now out of print. In Bulletin No. 64, Professor Georgeson says in conclusion: "Our experience also seems to indicate that it is not best to pin one's faith strictly to the shallow culture. \* \* \* That a judicious mixture of deep and shallow culture gives better results than to continue either one through the entire season." A four-years' average showed that there was little difference in the results between deep and shallow cultivation of listed corn. For surface-planted corn, the method of plowing deep the first two times and shallow the last of the season, gave larger average yields than the other methods of cultivation. Surface-planting and shallow cultivation produced the best yield in 1902. In these experiments the shallow cultivation was about two inches deep, a spring-tooth cultivator being used for such cultivation. Also, the Tower's surface cultivator was used in some of the experiments. For deep cultivation, the ordinary four-shovel cultivator was used and the plan was to cultivate five or six inches deep. Between the methods of lister and level planting, the average yields of all the trials was in favor of the lister method.

We are at present undertaking some experiments in deep and shallow cultivation of corn but no results are ready to publish at present. For surface cul-

tivation we are using the gopher type of cultivator, which consists of two knives set at an angle on each side of the rows. When the ground is not too hard, this cultivator does good work. It is an excellent weed-killer, and as a surface cultivator I prefer it to the spring-tooth or other types. For deep cultivation, we are using the six-shovel cultivator. The shovels are medium in size and in our experiments we plan to cultivate about four inches deep for the deep cultivation, and about two for the surface cultivation. The disk cultivators are being used quite extensively, these cultivators are used for comparatively deep cultivation but it is my experience that the shovel cultivator, with three or four shovels on a side, will do better work as a rule and is to be preferred to the disk cultivator, at least for the cultivation of level-planted corn.

In many experiments conducted in other States, the results have often favored shallow cultivation of corn. Such studies as have been made of the root-growth of corn, show that the roots spread out near the surface of the ground and the conclusion is that deep cultivation destroys these roots. In taking out several samples of corn-roots at this station last season, it was found in every case that the main roots of the corn were about four inches from the surface of the ground midway between the rows. With the lister-planted corn this depth was constant nearly up to the hill, but with the level planted corn the roots rose near to the surface at a distance of five or six inches from the hill. From this study I conclude that deep cultivation of this corn, close to the hill the last time, would destroy the roots, but with the listed corn the deep cultivation, not exceeding four inches, would not injure the roots.

From the standpoint of injury to the roots, the early part of the season would be the time to cultivate deep, while the late cultivation should be shallower. However, there are reasons for cultivating rather deep the last time, especially when we follow the usual practice of laying the corn by. A deep mulch of soil makes a better cover and conserves more soil-moisture than will a thin mulch. Especially is this true in the latter part of the season when the weather is apt to be dry and hot. From the standpoint of conserving soil-moisture, a deep soil-mulch is not required early in the spring, since at this season of the year the weather is moist and cool and evaporation is not great. It is my experience, also, that shallow cultivation early in the season, cleans the ground of weeds better than deep cultivation. I have used the Halleck weeder and other similar makes and like this implement very much for the early cultivation of corn and other crops.

With level-planted corn, our usual method of culture at this station is to harrow the corn once or twice before it comes up and then after the corn is about two inches high, use the weeder two or three times, cultivating the corn for the first time with the cultivator when it is four to six inches high. The early cultivation with the harrow and the weeder kills large numbers of small weeds and keeps a surface mulch on the ground. The corn has sufficient height when cultivated with the cultivator to allow throwing a little dirt to the hills and the weeds are fully covered by the first cultivation. Our usual method is to use the surface cultivator (gopher or Acme type) for the first time and cultivate deeper with the six-shovel cultivator the second time, using either the surface or the six-shovel cultivator the third time, and the six-shovel cultivator for the last cultivation, in order to leave a good deep mulch of mellow soil when the corn is laid by. If heavy rains fall after the last cultivation, we do not hesitate to go through the corn with a single cultivator, in order to break the crust and reestablish the mulch.

With the listed corn a somewhat similar plan for cultivation is followed. The harrow is used several times in the early part of the season, both before and after the corn has come up. Usually, for the first cultivation, we

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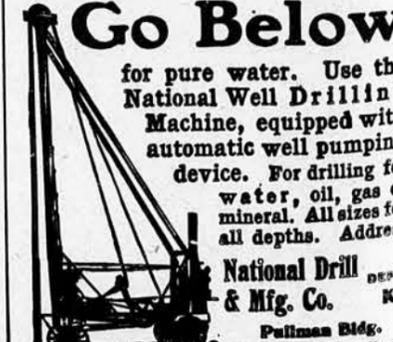
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prefer to use the sled or knife cultivator, cultivating close to the hills and killing the weeds on the edge of the furrow, but not throwing much dirt to the corn. For the second cultivation, a disk or shovel cultivator is preferred in order to loosen the ridges and throw a little dirt to the corn. The lister disk cultivators do better work, so far as I have used them, than the disk cultivator for the level-planted corn. In the later cultivation of the listed corn, we plan to do much the same work as already described for level-planted corn. I agree with Professor Georgeson, as quoted above, that in this State a judicious mixing of deep and shallow cultivation for corn gives the best results.

A. M. TENEYCK.

**Clovers for Oklahoma Hogs.**

Will you kindly advise me through the KANSAS FARMER the most likely varieties of clover I can get to grow here for hog-pasture? My land is dark, sandy upland, that grows good crops of wheat, Kafir-corn, etc. I am in the southern part of Woodward County, Oklahoma, forty miles south of the Kansas line. My valley land will grow alfalfa and will be devoted to that, but about seventy acres of upland I wish to divide into lots of fifteen or twenty acres and grow clovers, grains, forage, and root crops for hogs, letting the hogs gather their own feed. My idea is to have pigs come in April and put sows and pigs on grass, clover, etc., as soon as grass starts, and change from one crop to another during the summer, and feed grain only at last to top off. I wish to keep only the brood-sows over during the winter and raise only one litter of pigs each season. Will have about 130 acres to devote to crops for hogs, including the alfalfa. Some lots each year will grow wheat and Kafir-corn for grain to finish the feeding. How many hogs should such a farm carry? What clovers and crops should I sow on the upland to rotate crops?

Ten acres will remain in native grasses, in which will be located pens, houses for brood-sows, etc. Land will be in shape to sow crops on this fall. Is now in wheat, Kafir-corn, etc.

CLYDE Z. CURLEE.

Woodward County, Oklahoma.

The clovers generally grown are, common red, Mammoth and Alsike varieties. The last-named variety grows best in moist soil and bottom-lands. The other two varieties often succeed well on the upland where the climate is favorable for growing the crop. I do not think you will be able to grow clover successfully on your upland soil in Woodward County, Okla. Clover is not so well adapted as alfalfa for growing in a dry climate, and I should expect alfalfa to grow much better and prove a more profitable crop on the upland soil which you describe than clover, especially when you state that the alfalfa does well on the bottom-lands. Alfalfa may be as successfully used for hog-pasture as clover, and is more productive and permanent if care is taken in pasturing it. It should not be pastured too late in the fall or too closely, and hogs should be prevented from rooting. Alfalfa grown in combination with some other grasses will perhaps make a more permanent and profitable crop than alfalfa alone. I am scarcely able to advise as to what grasses to seed with alfalfa, possibly the Bermuda grass, the great pasture-grass of the South, will be successful with you. Some of the common grasses which might succeed, are, English blue-grass, orchard-grass, Bromus inermis, and Western rye-grass. I think before seeding any large amount of any of these grasses, it would be best for you to write to the experiment station at Stillwater and get the advice of Professor Burtis as to the best grasses for you to sow.

Of all annual crops rape makes the best pasture for hogs. Rape may be sown at any time during the summer up to the first of July. It is best to make successive sowings, at intervals of three or four weeks. The cow-pea is another excellent crop to grow for hog-pasture. These crops may be sown broadcast or a better method will be to plant in drill-rows, 2 to 2½ feet apart (with cow-peas the rows

may be 3 feet apart), and cultivate during the first part of the growth of the crop. Planted in rows in this way the hogs will destroy less of the crop, a larger product can be secured and the land is also benefited by the cultivation. For early spring pasture a combination of winter wheat and rye may be used. Early-sown barley makes a good pasture for hogs. As a succession of forage-crops for pasture I have recommended the following:

1. Winter wheat and rye.
2. Perennial grasses and alfalfa.
3. Barley, oats, and emmer, with vetches.
4. Cane, Kafir-corn, and corn.
5. Cow-peas or cow-peas and corn.
6. Rape or No. 4 or No. 5 given above.
7. Perennial grasses and alfalfa.
8. Winter wheat and rye.

Some of the above-named crops are better adapted for cattle-pasture than for hog-pasture, but you will be able to select those best adapted for your use.

In regard to your growing hogs largely on forage crops and as to root crops, artichokes are sometimes grown for hogs, but pasture-crops and root-crops do not go well together. With the pasture the hogs must be prevented from rooting, but with artichokes the hogs are obliged to root in order to get the tubers. It does not seem to me to be necessary to grow roots in this way since the pasture-crops will fill all the requirements. A few acres of sugar-beets or mangels might be grown to use for winter-feeding, but this will hardly be necessary where you have alfalfa.

A practical rotation of crops to be used for the purpose which you require, will be to follow grasses with cultivated crops, such as Kafir-corn, wheat, etc.; after grain-crops, legumes, such as cow-peas and soy-beans, should be planted. Rape should properly follow legumes since it requires fertile soil to make its best growth, and is a crop that exhausts the soil to a greater degree than many other crops. Where rape is pastured on the ground, however, this exhaustion of the soil will not be so noticeable as it is when the rape is used as a soiling-crop and removed from the land. After the growing of rape or other cultivated crops the land may again be seeded to grasses and alfalfa or to alfalfa alone. As a rule, cultivated crops should follow sowed crops and vice versa, in order to give the land a change and keep down weeds, diseases, etc.

In regard to growing hogs largely on forage-crops and finishing with grain, and also for answer as to the number of hogs which such a farm as yours should carry, I have referred your letter to Mr. G. C. Wheeler, of the animal husbandry department, whose answer is given below.

A. M. TENEYCK.

The question of your correspondent as to the number of hogs which his farm will carry is rather a difficult one to answer, in fact, only an estimate could possibly be given, owing to the large number of circumstances which bear upon the subject. I note that he has 60 acres of alfalfa on his bottom-land. He will probably not wish to use more than 30 acres, or possibly 40, for hog-pasture, as he will wish to have some hay for winter-feeding. I would advise him by all means to have alfalfa hay to feed his brood-sows during the winter; it will greatly reduce the grain necessary, and will also be much better for the sows than grain-feeding alone. A sow can well consume three or four pounds of alfalfa hay daily and nothing will put her in better condition for the spring farrowing than this method of feeding. Under ordinary conditions, would suggest than an acre of alfalfa would furnish pasture enough for from five to ten hogs, depending on the condition of the growth of the alfalfa. It is one of the best pasture-crops to use for hogs, if not the best. A small amount of alfalfa hay is also a good addition to the fattening ration.

According to the above estimate it would seem that this farm could probably turn off 200 head of hogs per year, fattened and sold as shoats in the fall. The chief problem to my

mind is the production of sufficient grain to fatten these hogs. I do not believe that this number of hogs could be grown and put in market condition on much less than 1,200 bushels of grain. According to experimental work at the Utah Station at Logan, it is not profitable to attempt to produce pork on pasture alone. The results of a number of experiments are given in their Bulletin No. 70, from which I quote the following:

"Pigs running on pasture with partial-grain rations, produced gains at the least cost per hundred pounds, the quantities of food required standing in the following relation: Full-grain ration, 100; three-fourths, 94; one-half, 82; and one-fourth, 66. But the total gains of those receiving full-grain rations were so much greater that, even with the smaller rate of profit, the total net gain, per pig, very much exceeded that of the partial ration.

"In the quantity of grain required for 100 pounds of gain the sets having a one-fourth grain ration excelled in every test, requiring the lowest amount and giving the highest per cent of profit.

"In rate of gain the sets receiving a full-grain ration were the best in all cases, making the largest total gain and giving decidedly the highest total profit.

"Alfalfa without other food, whether pastured by pigs or cut and fed to them in pens, furnished only enough nutriment for bare maintenance. When additional food was given the rates of gain were nearly proportional to the extra quantities they received.

"Alfalfa supplies a good supplementary food in connection with bran and grain, but it is too coarse and bulky to be fed alone to the pig whose digestive tract is especially adapted to concentrates."

If your correspondent could secure this bulletin a careful study of the results might be of great value to him. It is possible he might find it more profitable to grow a large number of hogs with a limited grain ration and sell what he was unable to finish with the grain produced on the farm, to feeders in the corn-belt, as there is quite a demand for good feeding-hogs in those sections of the country.

I would suggest that your correspondent start in with about twenty brood-sows and increase only as he sees the conditions warrant it. No one at this long range can tell him just how many hogs it would be possible for him to raise. For fattening he will find that a ration of one-fifth soy-beans to four-fifths Kafir-corn will make very economical gains. It is a most excellent fattening ration. G. C. WHEELER.

**How Shall We Maintain the Soil Fertility?**

WM. LJUNGDAHL, KANSAS STATE AGRICULTURAL COLLEGE.

Fifty years ago the problem which confronted the Kansas farmer was not one of, "Where shall I get the necessary elements essential for plant-growth?" On the contrary it was rather, "How shall I unlock the great stores of soil fertility already in the land?" The solution was simple, yet not to be accomplished in idleness. It required all the sturdy discipline of those invincibles of early Kansas history who remained through thick and thin, in order that they might participate in the making of a State.

Great has been the reward which attended the efforts of these energetic pioneers. Look for a moment at the fields upon fields of wheat and corn. But even as we thus review them, the fields are transformed into train-loads of grain moving eastward, ever eastward; and in those cars are thousands of tons of plant-food taken from Kansas soil, similar amounts of which have been exported annually for years.

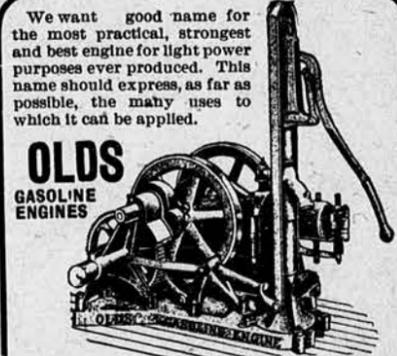
It can readily be seen that this process can not go on forever without some return being made to the soil. Already large tracts of the tillable land of our State have refused to yield profitable crops of either corn or wheat. Almost without exception such unproductive soils have responded nobly to alfalfa. This clearly indicates that these soils were deficient in nitrogen, yet it was only when they

(Continued on page 573.)

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## Horticulture

### Italian Poplars.

EDITOR KANSAS FARMER:—Do Italian poplar-trees produce seed? If not, why not? Did they originally come from Italy, and if so, have all the trees here been produced from cuttings? Do they produce seed in Italy?

M. A. W. JORDAN.

Pawnee County.

The Lombardy or Italian poplar has been known to produce seed in some localities in this State. Where no seed is produced it is probably due to the absence of one sex of the tree. Practically all the Italian poplars in this country are propagated from cuttings. Seed is produced by these trees in Italy.

### Crude Oil or Bordeaux Mixture for Pear-Blight.

EDITOR KANSAS FARMER:—At what time does pear-blight come on trees? On what part of the tree does it make its appearance, and what does it look like? How old are trees before it usually strikes them? Is there any remedy for pear-blight after it strikes them?

I have seen Bordeaux mixture recommended as a preventive; when should it be applied? I have also seen salt recommended; do you know anything about it? How should it be applied, and how much?

I saw an article in the KANSAS FARMER in which white paint was recommended for apple-trees. How thick should it be?

Answer.—Pear-blight time is from May 1 to September 15. A wet spell of weather, causing a rapid growth of new wood and followed by a hot, sultry day, and in a day or two the leaves will turn black; the bark on the stem also turns black and the wood becomes reddish in color and has a sour, sickening smell. The twig dies back to the main limb and a spot on it will work down in the sap, and if not cut off, will kill it, as it works clean to the heart of the limb and so back to the tree. I have tried salt and it killed all I tried. Also, I have tried coal-oil. Taken in its first stages crude oil will kill the germs or bacteria, and new wood will grow over the wound. But the heart-wood will rot and eventually break off. I use a stick and swab to apply it with. I have never yet killed a tree or limb with crude oil and I use it in summer on a hot day. Bordeaux mixture used before the buds start and after the bloom falls will in a measure stop it; but it must be kept up every year to make a success of it. To the party who will find a sure preventive there is a reward of \$10,000 offered.

As to painting trees to keep rabbits off, I have used white lead, also barn paint (red). It lasts about three years and then the bark breaks off and leaves the tree bright and clean. I never lost a tree by using paint on it. Apply in August or September on cool days (the hot sun might hurt it). I have had jack-rabbits cut through the paint.

S. S. DICKINSON.

Larned, Kans.

### First Principles.

EDITOR KANSAS FARMER:—Of late we have read several articles which refer directly or indirectly to the first principles of all horticulture, also calling attention to the fact that as a people we were getting nearer to the first principles in diet as designed by our Creator.

One article of interest, was the visit of Judge Green, of Missouri, to Luther Burbank, of California, published in the Western Fruit Grower of January last; also an article by B. F. Smith in the KANSAS FARMER of January 28, 1904.

This is not written with the intention of criticizing these gentlemen, but it is designed to offer a better solution to the mystery of breeding better fruits, vegetables and grain, than some statements in their articles would lead us to believe in, as the only possible way.

When the Creator made man He expressed His intention as regards his mission in Gen. 1:26, as follows: "And let him have dominion over the fish of the sea and over the fowl of the air and over the cattle and over all the earth, and over every creeping thing that creepeth upon the earth."

In verse 28, God says to them: "Be fruitful and multiply and replenish the earth and subdue it and have dominion over the fish of the sea, and the fowl of the air and over every living thing that moveth upon the earth."

In verse 29, he further instructs them: "Behold I have given you every green herb bearing seed, which is upon the face of the whole earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for meat."

This shows that the earth was covered with these necessary things before the garden of Eden was planted. And in the garden, which was to be a sort of nursery for our first parents, the record says (Gen. 2:9): "And out of the ground made the Lord to grow every tree that is pleasant to the sight and good for food." The tree of life was also there and the tree of the knowledge of good and evil.

As to what man's occupation was to have been, we learn in Gen. 2:15: "And the Lord God took the man and put him into the garden to dress and keep it." Thus briefly we have the whole thing outlined. For man to have dominion over everything as indicated, must have put him in possession of a knowledge of creative processes, of which the possession of that dominion demanded, and the exercise of that information, in the line of keeping the garden, would have resulted in producing an endless variation of the original stock, such as we never dreamed of and this knowledge was to have been a legacy to the race.

The whole vegetable creation was under the absolute dominion of Adam and was created so that it would develop with his care, or retrograde with his neglect.

When by disobedience Adam fell, he not only lost Eden but boundless dominion over everything upon the earth. With his changed condition after the fall, he could not prevent weeds growing, nor fine fruits from degenerating. He also changed his diet, and the history of the world shows that it has little desire to return to it.

But with man's neglect, vegetation did not lose at once its original vigor, for Rawlinson, in his history of the "Seven Great Monarchies," relates the almost fabulous yields of grain, fruit, etc., in old Babylonia. But since then there seems to have been a studied plan of devastation, to keep the earth from producing the original food designed for man. In wars of conquest, whole provinces were stripped of every desirable tree and vine, and in many instances fertile fields were covered with stones, as the Scriptures mention. So man's vandalism has made the process of getting back to first principles an arduous undertaking.

With this brief outline I will now state why I think some of the positions taken in the articles referred to are erroneous and that we are working at the wrong end of the matter. The position that I shall take is that there is no fruit or flower or vegetable but has in its seed the ability to develop back toward the perfection from which it started, if man only makes the conditions possible. Friend B. F. Smith says in his article: "Now from the original seed given to man in the beginning, has been evolved all the fruits we so much enjoy to-day." I am inclined to think that Friend Smith gives this theory a tacit acceptance without investigating the record. Man's original dominion was over the animal, as well as the vegetable kingdom, and just look at the animals. Gen. 1:30 says: "And to every beast of the earth, and to every fowl of the air, and to every creeping thing that creepeth upon the earth, wherein is the breath of life I have given every green herb for meat." When man lost his dominion, everything over which he ruled, either evolved upward or gravitated downward by his neglect. There were no carnivorous animals be-

fore the fall, and they, as well as man, departed from first principles as man's restraining dominion was lost forever. Therefore, if one great branch of created creatures degenerated to the level we see them, the argument is good that the remainder must have done so, for the lesson of the animals can not be disputed.

The knowledge of created processes was not blotted out of man's mind entirely. I am satisfied that all men have it in a rudimentary degree, for Jacob understood it, and had no trouble breeding cattle and sheep any color he wished. Our florists understand it quite largely, as our beautiful gardens demonstrate.

Luther Burbank has unraveled some of its mysteries, but I imagine he will repudiate Judge Green's enthusiastic claims that he "Can, and does, beat God's best a thousand per cent in a given line." Neither will he assume the title of "creator" ascribed to him. His greatest productions are the results of nature trying to get back to first principles, and when man makes the conditions possible, nature fairly "stoops over" in her efforts to assist us. Every observing fruit-grower knows this to be a fact. Just look at the fine seedlings that spring up on every fruit-farm.

See our strawberry catalogues and observe that a large portion of the new varieties were simply "found growing." Man made the conditions possible but no man understands the process. He can not understand the possibilities there are in a little seed. And with what reverence should we think of the Creator, who by His word put into the little seed the power to renew itself and yield readily to the influences thrown around it by man, thus enabling it to redeem the curse as far as possible.

Luther Burbank is not a creator of anything; no man is, or ever was. And I can think of no better argument for man's fallen condition, than that an individual would pay Mr. Burbank \$10 per hour for instruction along that line and then herald it to the world: "He beats God a thousand per cent." It is right for Mr. Burbank to charge for his time, and doubtless the information he imparts is worth it, but I doubt if there is any of his methods so intricate that they can not be understood by any boy or girl of ordinary intelligence and a slight knowledge of botany, which proves that the first "dominion" has left its impress on the race.

But to get back to originating fruits. How much easier it is, and how small the obstacles appear, when we understand that all we have to do is to make certain conditions necessary, and nature responds by giving something nearer perfection and reproducing toward the original in so many instances. Mr. Burbank has a large portion of "know how," and we are pleased to see his efforts rewarded.

If the theory of evolution were true, there are few who would blame Adam for getting his fill of something good for once, even if he had to leave the garden forever, for what was there in it but a few rudimentary seeds? But there is one fatal error in the evolution theory. If man evolved from the lower animals, then he is not morally responsible for anything, for there was no moral responsibility on the tadpole or monkey, and evolution marks no spot where man became responsible. If their theory is true there is no such thing as sin, no Jehovah, no Christ, no plan of salvation, no restoring man's former dominion by Jesus as recorded in Micah 4:8, and that it will be enjoyed forever, Isaiah 65:17-25. Then we shall know what the first dominion meant, and man and animals will again begin to carry out the original plan, and the diet for man and animals will never be forsaken.

EDWIN M. WHEELER.

Montgomery County.

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# The Stock Interest

## THOROUGH-BRED STOCK SALES.

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

July 19, 1904—L. M. Monsee & Sons, Smithton, Mo., twenty-fifth semi-annual sale of Jacks, Jennets and horses.

August 2, 1904—Harry Sneed, Smithton, Mo., Durro-Jerseys.

October 13, 1904—C. O. Hoag, Mound City, Kans., Poland-Chinas.

October 23, 1904—Leon Calhoun, Potter, Kans., Poland-Chinas.

November 1, 1904—W. B. VanHorn & Son, Poland-Chinas, at Overbrook, Kans.

December 6 and 7, 1904—Chas. W. Armour, Kansas City, and Jas. A. Funkhauser, Plattsburg, Mo., Herefords at Kansas City.

February 1, 2, 3, 4, 1905—Percherons, Shorthorns, Poland-Chinas, Wichita, Kans.; J. C. Robison, Towanda, Kans., Manager.

February 16 and 17, 1905—Chas. M. Johnston, Manager, Caldwell, Kans., Combination sale of registered stock.

February 22 and 23, 1905—Shorthorns and Poland-Chinas, N. F. Shaw, Manager, Plainville, Kans.

### Kansas Live Stock.

H. W. M'AFEE, BEFORE THE NATIONAL LIVE STOCK ASSOCIATION, AT PORTLAND, ORE., JANUARY 11, 1904.

Kansas is not only the geographical center of the United States, but she is the central State of that region which is destined to be the wealthiest and most prosperous of agricultural America by reason of the rapid development of its live-stock industry. With a record of \$500,000,000 worth of wheat, more than \$800,000,000 worth of corn, and nearly a billion dollars worth of live-stock products in the last twenty years, Kansas closed the year 1903 with a total of \$224,000,000 worth of agricultural products and \$164,000,000 worth of live stock to her credit. Kansas was settled largely by immigrants from corn-raising States who brought with them their methods of agriculture and habits of thought from their older homes, only to learn that the conditions surrounding them in their new locations were entirely different and demanded the solution of new problems and new solutions for old ones. Instead of raising corn to feed to cattle and hogs, as had been done in the older States from which they came, it was found that the climatic conditions were so different as to require a new agriculture, with new crops and new adaptations of old ones, before success could be achieved. Hence it is that while Kansas is prominent as a grain-growing State, her wealth has been largely received from the more profitable live-stock industry in the last few years. There is probably no territory on earth, of like dimensions, where live stock of all kinds grows and attains to greater perfection, or where climatic and other conditions are more favorable to their profitable rearing, and where all natural advantages are more conducive to their general health than in the invigorating air and genial sunshine with which Kansas is blessed. Here the grains and fodders are grown in wonderful profusion and the luxuriant pastures, pure waters, mild winters and nearness to market make a combination of conditions which give Kansas a preeminence as a live-stock country. Statistics show that almost from the beginning of her civilized history there has been a gratifying increase, not only in the animal population, but in the quality of the domestic animals which her farmers and stockmen have raised. This is true to such an extent that although Kansas must be considered as in the front rank of grain-raising States, she has at all times a profitable and ready market for her grains and grasses in the live stock which converts it into condensed and more marketable form, and upon which her prosperity will rest for all time. In order to appreciate the present magnitude of the live-stock industry of the State it is only necessary to quote the official data compiled by the State Board of Agriculture for the year 1903. This shows that Kansas had 845,404 horses, worth \$63,405,300; 101,089 mules and asses, worth \$8,895,832; 802,738 milch-cows, worth \$21,693,926; 2,745,586 other cattle, worth \$54,911,720; 167,044 sheep, worth \$501,132; 1,770,585 swine, worth \$14,164,680. From these figures it will be seen that Kansas takes a high rank as a producer of both cattle and swine, while comparison with the figures of former years shows that she is rapidly regaining her old preeminence as a

sheep-raising State. In addition to the facts above quoted, the records of the Kansas City Stock Yards, which are the second in size in the world, show that Kansas supplies their market with 55 per cent of all the cattle received there and with 51 per cent of all the hogs received, while her contribution to that market includes nearly 300,000 head of sheep and 40,000 head of horses and mules.

Kansas has already won a National reputation for its fine stock. The record shows many among the fastest horses, the championship in drafters, the heaviest fleeces ever shorn, and many of the prize-winners among the cattle and swine claim their origin or their present homes in Kansas. During the year 1903 there were sold in the Kansas City Fine Stock Pavilion a total of 1,211 head of cattle belonging to the four great beef breeds. Of these Kansas took one-fourth, which included 199 Herefords, 115 Shorthorns, 41 Galloways, and 35 Angus, out of a total of sixteen sales. In these sales the Herefords averaged \$150.84; the Shorthorns \$165.98; the Angus \$103.35; and the Galloways \$110.72. The output of feeding animals is not a matter of record.

Kansas now has the largest Hereford-breeding establishment in the United States; the largest Berkshire-breeding establishment in the world; and the largest home-grown herd of Angus cattle in the United States; and the largest and most influential live-stock breeders' association in the Union. The records of the Hereford Association alone show that since 1888, when there were but 206 head of registered animals of that breed owned in the State, Kansas has grown till she now has about 2,500 of this breed that are kept for breeding purposes alone; and the other breeds show a like increase.

Although under a temporary depression, Kansas breeders are by no means discouraged. Their faith is firm that Kansas is the best live-stock raising State in the Union and that the business of raising good cattle and good horses is as safe and as profitable as is the business of the banker, and that just as long as men eat beefsteak and porkchops, just so long will there be a demand for the best of live-stock products that can be produced in Kansas or any other State.

Our whole faith, as represented by the Kansas Live-Stock Breeders' Association, may be summed up in two sentences: "Kansas has some poor land but not an acre that is poor enough to raise scrubs on," and "Don't haul your grain to market, drive it."

### Color in Shorthorns.—No. IX.

EDITOR KANSAS FARMER:—I will now report on class of junior yearling heifers at the great International show in December.

First prize, Welcome of Meadow Lawn 9th (red, a little white). Her dam and maternal grandam are both red and white. Her sire is red. Her paternal grandsire is a red, by a roan sire bred by Duthie, of Scotland. Her paternal grandam is an English cow (color unknown), by a red and white sire.

Second, Viscountess of Fairview 3d (red). Her sire and dam are red. Her paternal grandam is a roan, got by the great show bull, Gay Monarch 92411 (roan), bred by W. S. Marr, of Scotland. Her paternal grandsire is the great roan, St. Valentine 121014.

Third, Princess Maud 4th (red). Her dam is a roan. Her sire is a red bull (bred by Duthie, of Scotland) whose sire and maternal grandam are roans.

Fourth, Glosterina (red). Her sire is the red Conqueror 149048 (bred by W. S. Marr, of Scotland), whose sire is a roan. Her dam is red. Her maternal grandam is a roan. Her paternal grandsire was the noted roan, Indian Chief 98651 (bred by A. Cruickshank) that headed the great herd of Arthur Johnson, of Ontario.

Fifth, Blue Grass Beauty (color unknown because not recorded in any published herd-book). Her sire is a roan. Her paternal grandam is white.

Sixth, Welcome of Meadow Lawn 8th (red and white). Her sire is also the

sire of the first prize heifer of this class. Her dam, grandam, and great-grandam are all red and white.

Seventh, Ruby of Fairview (red). Her sire and dam are red. Her maternal grandam and great-grandam are both roans of Cruickshank breeding.

Eighth, Maid of Honor (red). Her sire is a red (bred by Duthie, of Scotland) whose sire and maternal grandsire are roans.

We have here a class of eight, of which six are practically red, one red and white, and one whose color is unknown, but so far as we can judge from their breeding, none of their breeders are breeding for color; and it seems a mere chance that so large a proportion are red.

Morris County. D. P. NORTON.

### Should Corn for Hogs Be Soaked?

Can you give me some information as to whether it is best to soak corn for pigs running on alfalfa-pasture, or feed it dry? M. E. SEIBERT.

Marion County.

If the corn which your correspondent is feeding is very dry and hard, it might be advisable to soak it. This can be told only by observing whether the hogs are able to chew the corn easily and satisfactorily. Unless corn is very hard indeed, hogs seem to enjoy cracking the kernels and chewing it up, and we generally consider that the more chewing that is done the more complete the digestion.

G. C. WHEELER,  
Kansas Experiment Station.

### Oklahoma Feeding Experiments.

Following are a few of the results obtained in the steer-feeding experiments carried on at the Oklahoma Agricultural Experiment Station during the past winter, 1903-4. It has been the custom of this station to issue a brief report at the close of each year's work, as it takes some time to get the complete results compiled for a bulletin.

The following rations were fed to lots of five steers each. The feeding period extended from November 11 to March 30, covering 140 days:

Lot 1: Fed cottonseed, alfalfa hay, and wheat-straw; gained 240 pounds per steer or an average daily gain of 1.71 pounds. Feed consumed per steer, 710 pounds of cottonseed, 2,306 pounds of alfalfa, and 94 pounds of wheat-straw.

Only three steers are calculated in this lot, as two had to be removed before the experiment was completed, one with lumpy jaw and one with an injury in his stomach.

Lot 2: Fed four parts cottonseed and eleven parts Kafir-meal, alfalfa hay, and wheat-straw; gained 328 pounds per steer, or an average daily gain of 2.34 pounds. Feed consumed per steer, 528 pounds of cottonseed, 1,602 pounds of Kafir-meal, 1,915 pounds alfalfa hay, and 229 pounds wheat-straw.

Lot 3: Fed cottonseed-meal, shelled corn, prairie hay, and wheat-straw; gained 272 pounds per steer, or an average daily gain of 1.94 pounds. Feed consumed per steer, 516 pounds of cottonseed-meal, 1,757 pounds of shelled corn, 854 pounds of prairie hay, and 622 pounds of wheat-straw. For the first seventy days the grain consisted of three parts of cottonseed-meal and twelve parts of shelled corn, for the last seventy days, four and a half parts cottonseed-meal and thirteen and a half parts shelled corn.

Lot 4: Fed cottonseed-meal and wheat-straw; gained 160 pounds per steer, or an average daily gain of 1.14 pounds. Feed consumed per steer, 1,615 pounds of cottonseed-meal and 1,274 pounds of wheat-straw. Of the straw fed this lot, four pounds per day per steer were chaffed and mixed with the meal when fed.

Lot 5: Fed cornmeal and alfalfa hay; gained 319 pounds per steer, or an average daily gain of 2.27 pounds. Feed consumed per steer, 2,120 pounds of cornmeal and 2,048 pounds of alfalfa hay.

The steers were sold April 4 on the Kansas City markets in lots as they were fed. The following table gives the selling weights and prices, the

## Horse Owners! Use

CONSULTS

# Caustic Balsam

A Safe, Speedy, and Positive Cure  
The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUSTIC OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland, O.



**Hog Health Insurance**

To insure the household against disease, use DIPOLENE, the disinfectant that does double duty—kills disease germs and purifies. For softening water, mopping floors, sinks, drains, toilets; it renders everything wholesome, sanitary, healthful. Dipolene is handy in a hundred ways in every-day household work. Saves time—labor. A woman's friend, a foe to filth.

on the farm is a money-saver. A preventive and cure for diseases of sheep, cattle, hogs, etc. The famous one-minute sheep-dip every farmer and stockman should know about. None so effective, so economical. Booklet, "Dipping for Dollars" tells the whole story. Free on request.

Marshall Oil Co.  
Box 14  
Marshalltown, Ia.



## KARSOLENE DIP

The most efficient remedy known for Scab, Mange, Ticks, Lice, Hog Cholera, Galls, Sores or Wounds, or any of the many disorders to which hogs and other live stock are subject. A carbolic dip, with liquid sulphur added. A perfect disinfectant. Results guaranteed or money refunded. **FREE SAMPLE** for the asking. Refunded, enough to make 5 gallons of Dip. Write for catalogue, prices and full directions. Address: STOCKMAN'S MERCANTILE COMPANY, Dept. 16, KANSAS CITY, MO.

### Improved Hog, Sheep and Cattle Dipping Tank



Made of Galv. Steel  
No. 20  
10 feet long, 20 inches wide at top, 12 inches at bottom, 4 feet deep.....\$9.00  
8 feet long, 20 inches wide at top, 12 inches at bottom, 3 feet deep..... 7.00  
Bath tubs, delivered, each..... 6.50  
Columbian Steel Tank Co., Station A, Kansas City, Mo  
Manufacturers of all kinds of Steel Tanks.

## Fistula and Poll Evil



Do yourself what horse doctors charge big prices for trying to do. Cure Fistula or Poll Evil in 15 to 30 days.

**Fleming's**  
**Fistula and Poll Evil Cure**  
is a wonder—guaranteed to cure any case—money back if it fails. No cutting—no scar. Leaves the horse sound and smooth. Free Book tells all about it—a good book for any horse owner to have. Write for it.

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

## Shoo Fly Horn Paint

is the only remedy that will prevent fly blows from infecting wounds, cuts or sores on animals; heals quickly, and makes

Dehorning, Castrating and Spaying safe any month. Used on 100,000 head of cattle and sheep, and no failures. Good for horses with sore backs; once used you will never be without it. Endorsed by prominent stockmen. 1 qt. sufficient for 100 cattle. Sold at leading stockyards and druggists at \$1.25 per pint, \$3.50 per quart, \$3.50 per 1/2 gallon; \$5 per gallon. If your druggist does not keep it send order to the manufacturer.

H. B. READ, Ogallala, Neb.  
Write him for descriptive circular and testimonials.

shrinkage in shipping and the per cent that the lots dressed out:

Lot	Average K. C. wt.	Price per cwt.	Shrinkage per cwt.	Per Cent dressed out
Lot 1, 1230	\$4.10	30	57.6	
Lot 2, 1344	\$4.35	39	58.7	
Lot 3, 1294	\$4.20	53	57.1	
Lot 4, 1182	\$4.10	33	57.1	
Lot 5, 1352	\$4.25	35	59.2	

Each lot of steers was followed by three hogs during the experiment. Early in the experiment they were compelled to live largely on the droppings of the steers. With the exception of Lot 3 that followed the steers getting the shelled corn, the pigs made very small gains during that time. Lot 3 made fair gains. Towards the latter part of the experiment, each lot was fed a liberal feed of cornmeal in order to put them in condition to ship with the steers. These pigs were healthy and in fair marketable condition and sold in a bunch at \$5.20 per hundred-weight at Kansas City. The following are the weights of the lots at the beginning of the experiment, the gains per lot, and the extra grain fed:

Lot	Weights per lot	Gain per lot	Corn meal per lot
Lot 1 (3 hogs)	595	332	1487
Lot 2 (3 hogs)	594	431	1315
Lot 3 (3 hogs)	587	531	907
Lot 4 (3 hogs)	592	398	1501
Lot 5 (3 hogs)	577	428	1296

There was quite a difference in the condition of the different lots before the heavy grain-feeding commenced. The steers were common native grades of more or less mixed breeding but Shorthorn blood was most in evidence. They averaged about 1,000 pounds at the beginning of the experiment and were 3-year-olds at the close. As might have been expected, an examination of the carcasses in the cooler showed more or less difference in the finish between some of the lots, but further no ill effects due to any of the rations could be seen.

Below is given a rough statement of the financial outcome of the feeding:

Lot	Profit or loss per steer	Profit per pig (5 steers, 3 pigs)	Total
Lot 1	\$ .45	\$ 3.17	\$ 11.32
Lot 2	\$ 2.30	\$ 5.07	\$ 29.19
Lot 3	\$ 1.63	\$ 7.58	\$ 14.60
Lot 4	\$ 4.34	\$ 4.08	\$ 9.44
Lot 5	\$ .52	\$ 4.85	\$ 17.16

The labor is not taken into account as the manure is considered as balancing that. The first cost of the steers was computed at \$2.75 per hundred-weight and the first cost of the pigs at \$4 per hundred-weight. The feeds were figured as follows per hundred-weight: Shelled corn 66 cents; cornmeal, 71 cents; cottonseed, 70 cents; cottonseed-meal, \$1.22; Kafir-corn, 57 cents; Kafir-meal, 62 cents; alfalfa hay, 40 cents; prairie hay, 30 cents; wheat-straw, 15 cents. The freight on the steers was 23 cents per hundred-weight; on the hogs 30 cents. In addition to the freight, the expense of yardage, feed, and commission was \$1.01 per steer and 25 cents per hog.

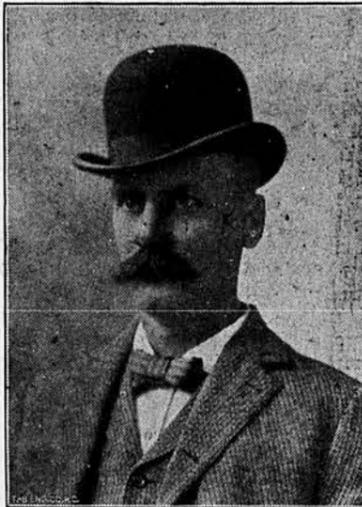
**The F. M. Miles' Dispersion Sale.**

On Wednesday, May 11, at the farm of the late F. M. Miles, near Valley Center, Kans., was held a dispersion sale of his entire herd of Poland-China swine. This was one of the good sales of the year. There were present about one hundred breeders and the sale was spirited. In fact, we regard this as one of the most remarkable sales of the season. It is to be remembered that it was a dispersion sale in which animals of all ages and sizes were sold. It is also to be remembered that under the order of the court the sale was made in a short time without giving ample opportunity for the proper preparation of the hogs. The stock offered was of prize-winning families and was good enough to go in any herd, but when a dispersion sale is announced buyers seem to feel that they have the advantage and can get what is offered at a low rate. Our friend, Mr. A. P. Wright, owner of the Park Place Farm, Valley Center, is one of the best breeders and judges of Poland-Chinas in Kansas. He was a sweepstakes winner at both the Kansas State Fair at Hutchinson and the Southern Kansas Fair at Wichita in 1903. He bought five of the tops of this sale and says that the sale was good and spirited from start to finish. The great herd-boar, Faultless Junior 31238, who was an outstanding winner at both Hutchinson and Wichita in class and as sweepstakes, was used in the Miles herd for a time and is now owned by John D. Marshall, of Walton, Kans., than whom there are few better breeders. His boars and gilts in the miles sale were exceptionally good. The sale in detail was as follows:

Morning Glory 65162, A. P. Wright, Valley Center	37.00
I Am Wanted, sow by What's Wanted Junior, A. P. Wright	47.00
What's Wanted Again, Z. S. Spore, Sedgwick	42.00
Best I Am (65700), C. M. Hopkins, Valley Center	15.00
Tiptop Girl, E. L. Spore, Sedgwick	28.00
Queen Wilkes, A. P. Wright	37.50
Gilt by Wilkes I Know, A. P. Wright	18.00
Gilt by Wilkes I Know, A. P. Wright	20.00
Gilt by Wilkes I Know, E. L. Spore	18.00
Boar by Faultless, N. C. Ridenour, Sedgwick	16.00
Boar by Faultless, F. H. Schimlenig, Belle Plaine	24.00

Boar by Faultless, G. P. Granfield, Wichita..... 20.00  
 Gilt by Faultless, E. Kern, Sedgwick 19.00  
 Boar by U. S. Perfection, C. M. Hopkins..... 11.00  
 Gilt by U. S. Perfection, C. M. Hopkins..... 20.00  
 Gilt by U. S. Perfection, C. M. Hopkins..... 18.00  
 Boar by Knap's Choice, J. Miles, Peabody..... 19.00  
 Boar by Knap's Choice, Wm. Sidler, Valley Center..... 15.00  
 Gilt by Knap's Choice, E. Kern..... 17.00  
 Gilt by Faultless, C. McGrew, Benton 16.00  
 Gilt by Faultless, C. M. Hopkins..... 17.00  
 Gilt by Faultless, J. Miles..... 15.00  
 Fingers Off Again, L. L. Cross, Valley Center..... 36.00  
 Best Cross, Z. S. Spore..... 44.00  
 Perfection Lady, M. P. Phillips, Valley Center..... 29.00  
 Gilt by Knap's Choice, C. M. Hopkins..... 16.00

Owing to the circumstances of this sale, the lateness of the season, and the fact that it was a dispersion sale, we think that the administrator has reason to feel satisfied with the results obtained. The twenty-six head disposed of brought \$614.50, average \$23.63.



COLONEL R. L. HARRIMAN.

Colonel R. L. Harriman, of Bunceton, Mo., whose portrait we publish herewith, has just returned from a business trip to Wichita, where he sold harness horses on May 10, at prices ranging from \$75 to \$250. At Fort Worth, Texas, on May 13, he sold Shorthorns at from \$50 to \$270. Colonel Harriman is proving a great success in the auction business. There is probably no man in the business who has worked harder to master every angle of his profession and at the same time to elevate the standard of live-stock breeding and selling in our good country. Certainly, no man has demonstrated more ability, of a high order as a salesman of fine stock of all kinds, and no man has grown more rapidly into popular favor among the best class of breeders throughout the whole country. Colonel Harriman has devoted his life to the breeding, handling, and selling of thoroughbred live stock. When he began selling at auction eight years ago he went into it with the determination to outsell all competitors. The records of sale throughout the country the past few seasons show how well he has succeeded. His books show that during the past year he has traveled over twenty thousand miles on the railroads and has made over one hundred sales of pure-bred stock in fifteen different States and Territories. Quite a number of the very best sales of the year are down to his credit and not a single failure. It has been said that "nothing succeeds like success." This seems to be Colonel Harriman's motto. He does not know the word fail. He is a desperate worker and no matter what are the conditions which surround a sale, he seems to be able always, with his wonderful energy, tact, and good judgment, to pull out a victory. He wants more Kansas business and will take pleasure in giving his best efforts and his lowest prices to Kansas sales.

**Gossip About Stock.**

Over in Dickinson County, near Hope, there is a bunch of mighty good Duroc-Jersey swine. Mr. L. L. Vrooman has been having a good strong demand for his Durocs so that he has but few left. If we remember right he has eight boars for sale that were sired by his herd-boar, Victor Chief, and then he has a few gilts and sows sired by the herd-boar, Victor Chief, and by the herd-boar, Edgar 12437. Mention the Kansas Farmer and write to him for prices.

On May 10, the harness horse-breeders of southern Kansas held at meeting at the Carey Hotel, Wichita, Kans., and organized an association, the object of which is to promote the interests of the harness horse industry in southern Kansas and northern Oklahoma, and to hold sales from time to time as they may consider advisable. Wichita has already developed into a great horse market and we are glad to see the harness horse men take hold of this matter in this vigorous way.

One of the best-known breeding farms in central Kansas is the Evergreen Stock Farm, near Elmdale, Kans., where Geo. Drummond breeds Aberdeen-Angus cattle and Berkshire swine. He is making some remarkably low prices on his Angus bulls, and if our information is correct he is selling the highest quality of registered Angus bulls for prices that one can not afford to miss. They would be very cheap to use on a grade herd, and extraordinarily cheap to use in a pure-bred herd where they belong. It will pay to write him a line and find out just what he now has and see what prices he is now offering them for. His advertising card is on page 575.

F. M. Gifford, Milford, Kans., who has been breeding Shorthorns for thirty years

**FARMERS! ATTENTION!**  
 NO LINIMENT WAS EVER MADE THAT EQUALS  
**SLOAN'S LINIMENT**  
 FOR HORSES AND OTHER STOCK AND ALL FAMILY USES  
 It Kills Pain and Kills Germs

and who is perhaps the oldest breeder of Shorthorn cattle in Kansas, has been out traveling over Missouri and Kansas, for two weeks looking for a herd-bull. He finally decided on Hero 2d 188919 and bought him from the Glenwood Herd belonging to C. S. Nevius, Chiles, Kans. So far as we know this is Mr. Gifford's first visit to the Glenwood Herd and he was quite complimentary in his remarks upon the size and quality of the breeding cows. He also praised the young bull, Prince Pavonia, and one of the senior heifer calves very highly. Hero 2 has a good home to go to and we are glad to know that he has a good owner.

Colonel R. L. Harriman, of Bunceton, Mo., and about twenty railroad men and capitalists from the East, were recent visitors at the Whitewater Falls Stock Farm of J. W. & J. C. Robison, Towanda, Kans. They were entertained royally by Manager J. C. Robison, who treated them to a big fish fry. Colonel Harriman reports that they were all surprised and delighted at the number and quality of the horses and Shorthorns found on this great farm, and adds that he never saw more good stock on any farm in his life. What with knee-high alfalfa, corn, oats, wheat, and grass in the finest condition, and the entertainment such as J. C. Robison could furnish them, it is no wonder that Colonel Harriman and his party were delighted with their visit. Colonel Harriman ought to live in Kansas. He is too good a man for Missouri.

The Tonkawa News, of Tonkawa, Okla., states that the \$5,000 Percheron stallion, Nebo, which McLaughlin Bros., of Kansas City, sold to a company of Kay County farmers and breeders, is dead. On the death of the horse McLaughlin Bros. immediately wired that they were ready to replace him for the \$1,000 as they had agreed to do, and Mr. J. M. Dunaway, president of the company, went to Kansas City and was given his choice of a lot of thirty Percheron stallions. Nebo was insured for \$1,000 and McLaughlin Bros. took the policy and turned the new horse over to Mr. Dunaway, thus fulfilling their contract and supplying the horse company with a new horse as good as the one that died and without costing them a dollar. McLaughlin Bros. have just received their second importation for this year, which brings the total up to nearly 100. This importation was landed at Columbus, Ohio, on Tuesday afternoon, May 17, and every horse in such fine condition that one carload was immediately re-shipped to their stables in St. Paul. McLaughlin Bros. report a very fine business this year and their methods have won them friends.

Every stock-breeder, as well as every farmer, should be interested in the good-roads movement for his own personal advantage as well as for the development of the country. Every businessman, as well as every other citizen, has an equal interest with the farmer and stockman in this movement. Some antagonism has been developed against it because of the belief, on the part of the uninformed, that it is a movement which will result in the increase of taxes. That this is not true, and that the efforts of the National Association are solely for the purpose of securing the good roads which are necessary to our continued prosperity, will be shown by the Lattimer-Brownlow bill now pending before Congress, which was introduced for the purpose of securing National aid for road-building, an act of the bill recommended by the National Good-Roads Association for adoption by the States for the purpose of making the Congressional measures effective, both of which will be reproduced in these columns soon. We hope every one of our readers will study these measures and criticize them and then see to it that his community is properly represented by delegates who will attend the State Convention, to be held in Topeka, August 2.

Some time since the writer was in Bunceton, Mo., attending a sale, and had the pleasure of seeing some very fine Berkshire swine bred by Harris & McMahan, Lamine, Mo. These breeders have been showing in Missouri State Fair and elsewhere, where they have won prizes and reputation. We are glad to learn that Mr. G. D. Wilkins, owner of the East Reno Berkshire herd, Inman, Kans., has secured one of these prize-winning boars which he has named Baron Beauty Junior 72642. This is a very fine hog, weighing over 500 pounds in breeding condition, and his litters have uniformly been large and

**Dunaway Stack Anchor**  
 Prevents the Top of the Stack Blowing Off. . . .

Screws in like a corkscrew. Cheap; economical; money and time saver. Saves its cost many times over every year. Does away with the old way of holding the tops of hay and grain stacks on by using rocks or other heavy weights.

Price per Dz. \$1.50  
 If your dealer hasn't it, order direct from us.

**C. B. POKE MFG. CO**  
 Manufacturers of Cowboy and Acme Animal Pokes and the Dunaway Stack Anchor.  
 1013 E. 18th St., KANSAS CITY, MO

**NICKEL RATE.**  
 The New York, Chicago & St. Louis R.R.

NO EXCESS FARE ON ANY TRAIN

Three Express Trains East Every Day in the Year. Pullman Drawing Room Sleeping Cars on all Trains. Trans-Continental Tourist Cars leave Chicago Tri-Weekly on Tuesdays and Sundays at 2:30 p. m. and Wednesdays at 10:35 a. m.

CHICAGO TO BOSTON WITHOUT CHANGE.

Modern Dining Cars serving meals on Individual Club Plan, ranging in price from 35 cents to \$1.00, also service a la Carte. Coffee and Sandwiches, at popular prices, served to passengers in their seats by waiters. Direct line to Fort Wayne, Findlay, Cleveland, Erie, Buffalo, Rochester, Syracuse, Binghamton, Scranton.

NEW YORK CITY, BOSTON AND ALL POINTS EAST.  
 Rates Always The Lowest.

Colored Porters in uniform in attendance on all Coach Passengers. If you contemplate a trip East call on any convenient Ticket Agent, or address,  
 JOHN Y. CALAHAN, Gen. Agt.,  
 113 Adams St., Chicago, Ill

**The Stray List**  
 Week Ending May 12.  
 Marion County—J. H. Thrasher, Clerk. HEIFER—Taken up by Abraham Carnelson, in Center tp., (P. O. Marion), April 18, 1904, one red yearling heifer, bush of tail white, slit in each ear; valued at \$10.  
 Week Ending May 19.  
 Lincoln County—N. J. Davidson, Clerk. SOW—Taken up by Peter Zier, in Indiana tp., May 3, 1904, one red sow; weight about 350 or 400 lbs.; valued at \$12.  
 Neosho County—W. L. Baldwin, Clerk. CATTLE—Taken up by W. W. House, in Lincoln tp., April 11, 1904, one 5-year-old red and white spotted cow; also one 2-year-old red, dehorned steer with wire ring in left ear; valued at \$25.  
 When writing advertisers please mention this paper.

of the quick-growing kind. Mr. Willems also has a number of other highly bred herd-boars, among them Black Robin Hood 2d 73523, Elma King 66056, Rutgar Judge 2d 61106, and Highclere Improved 66211. Elma King is from the imported sow, Elma Lady, for which Will Rhodes paid the highest price ever paid for a Berkshire in the Kansas City sale ring. Rutgar Judge is from the famous strains bred by Chas. E. Sutton, Russell, Kans. Mr. Willems has a nice lot of fine youngsters for sale, sired by these famous boars. Write him and get prices before the choice ones are gone.

One of the puzzling questions which comes before the breeder of pure-bred stock when he decides to hold a public sale is that of the selection of an auctioneer. He wants a man who will secure every dollar in value for the stock he sells and, other things being equal, a Kansas breeder naturally prefers a Kansas auctioneer. Some time since we had the pleasure of listening to Col. J. W. Sheets, of Fredonia, while he made a sale of pure-bred cattle. We were at once struck with the remarkable ability and energy of the man and on inquiry we learned that he had been selling in the ring for the past twenty-five years. Of course, with such an experience, it is no wonder that he is a good salesman. The last time we saw him sell was under circumstances that well might discourage any man. He was obliged to sell in a downpour of rain and to a very small crowd of wet and uncomfortable buyers. The difficulties, however, seemed but to spur him to renewed effort, and we have marked him for a man who will be heard from as a success in the pure-bred sale ring. His advertising card is on page 572 and our readers are requested to remember that he is willing and ready to go to any part of the earth to make a sale and that he guarantees satisfaction. Write him for date and mention the Kansas Farmer.

**Publisher's Paragraphs.**

You can't expect a soap that is made to remove dirt from your clothes to be a good shaving soap, but some men will use it and run the risk of serious skin trouble. The reason for this is that they have never felt the smooth, delightful effects of a shave with the creamy, thick lather made by Williams' Shaving Soap. See the advertisement elsewhere, take advantage of their sample offer and you'll never use any other.

Department of Animal Industry, Kansas State Agricultural College, Manhattan, Kans., August 25, 1903.

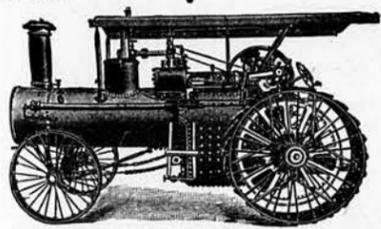
B. H. DeHuy Ph. G., Denver, Col.  
Dear Sir:—I take great pleasure in recommending your Balmoline for all Wire Cuts, Scratches, Sore Shoulders and Necks, and all Flesh Wounds because I have given it a thorough trial for several years; the last two being here at the State Agricultural College, where I have had charge of the horse division.  
Yours very truly,  
LYMAN J. COFFMAN.

There is scarcely a day but one reads of robberies and outrages committed by tramps. They are no longer the shiftless loafers they once were, but have become marauders who go about to pillage and to murder, if they are refused their demands. It is growing more and more necessary for every farmer to provide himself, and his wife too, with a thoroughly trustworthy revolver, and to keep it ready for emergencies. As a household weapon the famous H & R Revolvers, made by the Harrington & Richardson Arms Co., of Worcester, Mass., can be confidently recommended because of their simple, yet effective construction; their accuracy and above all their safety for those who handle them. They are made with automatic ejecting devices for discharging the shells. In a variety of styles that are fully described in their handsome catalogue, which will be sent to any one who mentions Kansas Farmer.

The traction engine is the heart of a thrashing outfit. It must represent the highest type of portable power and the greatest possible economy coupled with effectiveness. Such an engine is the one made by the M. Rumely Company, LaPorte, Ind. This company has been manufacturing machinery for nearly half a century and in that time has never neglected an opportunity to add improvements. Their engines and separators have achieved a wide fame on account of their many points of superiority.

The engine here illustrated has rearing, the power being applied where it will do the greatest service at the least cost. These engines are made in both the double and single cylinder type. The cross heads and slides are protected from dust and every part has been reduced to the simplest construction possible, while retaining perfect operation and the highest efficiency.

The wheels are wide tired and built of steel, giving them great strength and light weight. These engines are adapted to the use of wood, coal, or straw for fuel and are in successful use in every part of the country.



No engine on the market has more good points than the Rumely. It was designed and is built for the service it will need to give in the hands of the thrashermen of this country. It works on any road that can be traveled over by a traction engine and goes freely over places that many engines of this type would fail to cross. Backed by skill and experience, the Rumely traction engine has stood every test it has been subjected to and has given perfect satisfaction under all circumstances. Those who are interested should write to the company for their catalogue which is fully illustrated and minutely describes every point. This book is sent free to every reader of this paper who asks for it. Address as above.

**Best Results for Horse or Family.**  
Hartford City, Ind., December 18, 1903.  
Dr. B. J. Kendall Co., Enosburg Falls, Vt. Gentlemen:—I am thankful for your promptness in sending me the "Treatise on the Horse and His Diseases." I have used your Spavin Cure for a good many years on horses and mules, also on myself and family with best results in all cases. Very truly yours,  
TIMOTHY REIDY.

**Dipping for Hogs and Cattle.**  
For many of the disorders to which hogs, cattle, sheep, and horses are subject the best and most effective remedy is dipping in a medicated solution. While there are many such preparations on the market, there is none, according to farmers, that equals the Karsolene Dip prepared and sold by the Stockman's Mercantile Co., of Kansas City. This is a carbolic dip, as are all other dips practically, but its efficiency is largely gained by the addition to it of liquid sulfur. It is the discovery of one of the most skillful chemists in the country, and for the treatment of Scab, Mange, Ticks, Lice, Hog-Cholera, Galls, Sores, etc., has proved itself to be an absolute and certain specific. Its owners guarantee it for results, and to any farmer or stockman who desires to try it will send, free of charge, and for the mere asking, enough to make five gallons

**Using "Conditioners."**  
Every business farmer knows the value and proper use of a good Stock Conditioner. Even animals that seem to be all right at this season of the year may be out of condition. One of the best preparations on the market is Rex Conditioner. It is just what its name signifies. You can depend on its doing the work. Many animals that are out of condition are suffering from worms. Rex Conditioner will expel all worms, will give the animal's system a thorough cleaning out, toning it up and giving it new vitality. Rex Conditioner is as carefully compounded as a doctor's prescription. Only the purest and best ingredients are used and the proportions are carefully weighed out and thoroughly mixed and combined. Rex Conditioner contains no antimony or other dangerous elements. It is, however, the most powerful conditioner on the market and is the cheapest in the end because you only need to use a little at a time, as it is so highly concentrated. It is good for all stock; horses, cattle, hogs, sheep, calves, and poultry. For full particulars address the makers, Rex Stock Food Co., Dept. 9, Omaha, Neb., and ask about the "Free Introductory Offer" they are advertising elsewhere in this issue.

**Reid Hand-Separators.—Practical for the Man With Few or Many Cows.**

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The manufacturers of the Reid Separators have led the world in the matter of creamery and dairy supplies for more than a quarter of a century. They are thoroughly reliable and challenge a comparison of their machines with any other.  
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The regular subscription price of the KANSAS FARMER is one dollar a year. That it is worth the money is attested by the fact that thousands have for many years been paying the price and found it profitable. But the publishers have determined to make it possible to secure the paper at half price. While the subscription price will remain at one dollar a year, every old subscriber is authorized to send his own renewal for one year and one new subscription for one year 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.

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Notwithstanding the fact that we have the prize-winners of America, we will sell as low as others that have inferior quality. We keep on hand a large number at our branch at Sedalia, Mo., and can suit any Western buyer there. We give a gilt edge guarantee on every horse that we sell and make terms to suit the buyer.

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## The Young Folks

CONDUCTED BY RUTH COWGILL.

### THE ROAD TO GRUMBLETOWN.

'Tis quite a straight and easy road  
That leads to Grumbletown.  
And those who wish can always find  
A chance to journey down.

'Tis customary for the trip  
To choose a rainy day—  
When weather's fine one's not so apt  
To care to go that way.

Just keep down Fretful Lane until  
You come to Sulky Stile,  
Where travelers often like to rest  
In silence for a while.

And then cross over Pouting Bridge,  
Where Don't Care Brook flows down,  
And just a little way beyond  
You come to Grumbletown.

From what I learn, this Grumbletown  
Is not a pleasant place;  
One never hears a cheerful word,  
Or sees a smiling face.  
The children there are badly spoiled  
And sure to fret and tease,  
And all the grown-up people, too,  
Seem cross and hard to please.

The weather rarely is just right  
In this peculiar spot;  
'Tis either raining all the time,  
Or else too cold or hot.

The books are stupid as can be;  
The games are dull and old;  
There's nothing new and nothing nice  
In Grumbletown, I'm told.

And so I've taken pains, my dears,  
The easiest road to show,  
That you may all be very sure  
You never, never go!

—Ellen Manly, in St. Nicholas.

### Over the Border—A Story of the Kansas Pioneers.

IX.

(Copyright 1904, by Ruth Cowgill.)

#### CHAPTER XII.—TAR AND FEATHERS.

Nathan had gone to Leavenworth four days before to attend to some business in regard to some dispute which had arisen over the filing of his claim-papers. He had gotten this well attended to and early in the morning of the third day had started back.

He had eaten breakfast at a public house, where he, according to his usual sociable custom, had entered into the general conversation around the table which turned, as was customary, upon the difficulties between the settlers and their neighbors in Missouri. Nathan had already become known both to the Free-state party and their foes for his plainly spoken opinions on the slavery question. For he was unfortunate, in those times of bitter personal feeling between the North and the South, for his inability to conceal his views. He spoke his mind freely and bluntly, wherever he chanced to be, with a certain childlike simplicity, unthinking of consequences. It was not strange, therefore, that Nathan was soon involved in an animated argument with his neighbor at table, who chanced to be a Missourian, over for the day.

The stranger had become very angry at Nathan's blunt remarks, delivered in no uncertain tones, and the other diners had become interested, and suggested, in undertones to each other, with dark looks, "The ol' cuss better keep his mouth shut, or they'd show him what's what!"

But Nathan had gone on calmly, unconscious of the storm which was gathering over his head. At last the man had made some violent remark, to which Nathan had responded mildly, as he pushed his chair back from the table and walked out of the room. He remembered that as he shut the door some one called out some remark prefaced with an insulting epithet, but he had paid no heed to it, and had gone calmly on about his business, and started homeward, the affair quite gone out of his mind.

After he had driven out a little distance and was proceeding leisurely on his way, he heard shouts behind him, and the sound of trampling feet. Looking back, he saw a crowd of ruffians, such as he had seen two or three times before. He knew it was for no good they were following him, but he would not run; and besides, there was no refuge for him if he should try to escape, for he was alone on the wide, unpeopled prairie. So he proceeded at

the same slow rate, until they overtook him.

"Hi, yi!" they shouted at him, shaking their fists under his nose, brandishing clubs and ostentatiously displaying their fire-arms; one sportive youth knocked his hat off; another pelted him with potatoes from his own wagon, while some of the others quarreled over the few choice apples which he was taking home to the children.

"You take back them — words you said over yonder, er we'll teach you better manners," shouted a man whom Nathan recognized at once as his neighbor at the table that morning.

"Not one of them," he said, firmly. Then began a fearful outcry, but just then a newcomer, on a beautiful black horse, rode up.

"Hello, fellows, what's up?" the newcomer called.

"This old codger will be pretty quick," answered a would-be wit, with labored facetiousness.

The newcomer joined in the laugh which followed the rejoinder, and rode up nearer.

Suddenly he turned deadly pale.

"My God! Fenton, how came you here?" he asked hoarsely.

Nathan had not looked at the newcomer before, sitting quietly in his seat with his eyes in front of him. He was surprised, now, to look up at the words, and see Howard Burk.

"Rather, how came thee here?" he said, with reproof in his tones. "This is no fit company for such as thee."

Burk had recovered himself somewhat, and flushed angrily at the old man's words. The crowd, which had been listening in some amazement to the conversation, set up a howl of anger.

"Hang the — Quaker!" "Stop his fool mouth with a rope!" " — the white-livered ol' nigger-thief!" One fellow hit Nathan on the mouth with the butt of his revolver, cutting the flesh brutally. Still Nathan sat, unafraid.

"Mr. Fenton," said Howard, in a low tone, respectfully, "I will advise you as a friend to be quiet, and get out of this as quickly as possible."

"Does he say he'll take back what he said about niggers, and us votin', an' all that?" shouted some one on the outskirts of the crowd.

"Say yes," said Burk, eagerly.

"Not one word will I take back, and I'll say it again, if it please thee," said Nathan, loudly.

Howard was angry, but he loved this man's daughter with all the passion of his soul. He must do what he could.

"Gentlemen!" he cried, breaking in upon Nathan's voice, and trying to drown it with his own. He assumed an air of good comradeship, and made himself one of them as much as was possible when their desires were diametrically opposed. "Gentlemen! This old fellow's not worth our trouble. Let the — old fool go, and save your hemp for somebody that needs it worse. Come, let's go back to town—I'll treat."

But the ruffians were not to be deceived. "Damn ye! ye can't fool us that way!" "He's tryin' to let the old feller off." "Mebby you're turnin' abolish' yourself." The suspicious looks cast at him by his friends warned him to guard his own interests. " —," he said, "You know as well as I do that I'm no abolitionist. This thing means a damned lot more to me than to any of you. I've got more niggers down on my plantation in old South Carolina than you ever saw together — — you."

The bluster and especially the oaths seemed to reassure the Missourians, who once more turned their attention to Nathan.

"Now, — you; are you goin' to eat them words of yourn?" asked Nathan's first adversary.

Nathan merely looked at the fellow, which so enraged him that he began climbing into the wagon, shouting to his fellows to "Come on—we'll hemp the — nigger-stealer." They were only second to him in fury, and swarmed over the wagon, dragging the quiet, unresisting old man out. A rope

was quickly produced and thrown over his head in a long, running noose. He was dragged, kicked and beaten, amid the most horrid imprecations, to a large tree which grew near by, stately and serene, as if never meant to look on such deeds of horror as this day was now bringing forth. Nathan's face showed white through the blood and grime, and his white hair was disheveled. Yet through all the ignominy and reviling the dignity of his soul shone calm and serene.

"Here, fellows," suddenly Burk's voice sounded hoarsely, "I can't stand for this kind of thing, you know—"

"Tain't the first time ye've stood for 'em," shouted one vile fellow, impudently, but the others paused and turned a little toward him, for he was one of them and his voice was earnest.

"You shall not kill that old man. I will not permit it." Burk's voice was the voice of one superior to them, deriving authority to command from that very fact. Some of them had never seen him before, but to most of them he was well known, and to doubt his loyalty to their cause was to doubt the cause itself.

The ruffians hesitated between their desire for blood and their awe of Burk's authority. They began to parley and quarrel, and finally agreed on a compromise. One of them walked over to where Burk sat upon his horse haughtily alone, and said, "I say, boss, you go along, and leave this yere little business to us. We'll promise not to kill the — fool, but we'll give him a little lesson in manners—ye understand." And the fellow leered familiarly into Burk's face.

Burk hesitated, then, concluding that this was the most he could accomplish, nodded curtly and rode away.

"We'll take good care of him, cap'n," one called out, assuringly.

He was deeply agitated, and urged his horse unmercifully. His destination we have already learned, Nathan could only guess it.

#### CHAPTER XIII.—THE RETURN HOME.

Of the remainder of this brutal frolic of the border ruffians, Nathan never would speak. Dolman, returning from Kansas City late that evening, had heard a call faintly in the rising storm. He had followed where he thought it led, and after some wandering, found a man, who looked not at all like a man, but like some frightful dream, covered thickly with tar and bristling with feathers, roped tightly, face outward and arms strained backward to a tree. Dolman loosed him quickly, and he fell forward, unable to stand in his exhaustion. He put him upon his own horse, and held him there, walking by his side, till they came to a lonely farmhouse whose people Dolman knew to be good friends of the Free-state cause, and who assisted him cordially in removing by scouring and scraping, the terrible clothing which the border ruffians had given the poor man. His surprise and sympathy were great when he saw enough of the face to recognize his friend, Nathan Fenton. And, as we have seen, as soon as the coating had been somewhat removed, he borrowed some old clothes of the farmer, and his wagon, also, and took Nathan home, through the storm and rain.

As Sarah heard the story, she sobbed aloud. "Oh my dear, dear father! What will become of thee?" "He might have saved him this—he might have saved him," she said to her own heart.

Dolman did not know how to comfort her. He saw that she was completely unstrung. Of one thing he was assured, it must not be permitted that these simple, unprotected, non-resisting people should dwell longer in this lonely spot. He had not repeated to Sarah one thing that Nathan had told him, the threat of the ruffians that if ever they heard of his opening his mouth again on this subject they would burn his home and kill them all. And he knew very well that it was not an idle threat.

He went to the box which was Sarah's pantry and taking out a glass and a spoon, mixed a draught from a bottle which he produced mysteriously from some pocket.



Many a man would better go without lunch at all than eat the hurried lunch which forms the noon-day meal of many a business man. Hasty eating, foods hard to digest, and no time allowed for digestion are the cause of many a case of stomach "trouble."

Disease of the stomach seriously threatens the health of the whole body and should be promptly cured. Dr. Pierce's Golden Medical Discovery cures diseases of the stomach and other organs of digestion and nutrition. It enables the perfect assimilation of food and the proper nutrition of the body on which physical strength depends.

"Nine or ten years ago my health became very poor, and in 1892 was so far gone that good doctors pronounced my case the worst they had ever treated," writes Mr. Harvey Phipps, of Florence, Ala. "I had acute stomach trouble, liver complaint, catarrh and was nervous to such an extent I could not sleep. I finally got three bottles of Dr. Pierce's Golden Medical Discovery and some 'Pellets.' Took them according to directions on the bottles, and in a few days noticed a decided improvement. I commenced to get more rest at night and could eat with pleasure, where formerly food was like chips to me. When I had used three bottles of the 'Discovery' I was a new man; could eat mince pie for supper, go to bed at seven P. M. and sleep until seven A. M. I am now working at my trade (carpentry), every day in all kinds of weather, and think if I had not taken your medicines I would now be under the sod."

Dr. Pierce's Pleasant Pellets cleanse the clogged system from accumulated impurities.

"Here, little maid," he said, "Take this for me." She obediently drank the potion, unquestioningly.

"Now," said the newly installed doctor and nurse, "Now, go lie down—let me see—the bed is occupied—wait a moment." He hastened upstairs and brought down the pallet which was Nathan's usual bed.

"There," he said, depositing it on the floor in the parlor, "There, now go to sleep."

Sarah dropped upon the pad without a word, and was asleep in a few moments.

Dolman looked about the little kitchen. A stream of water ran across the ground, fast making the room muddy and disagreeable, and a steady drip came through the roof in several places, notably above the neatly spread table. He saw that nothing could be done to remedy these misfortunes, however.

He looked at his watch and saw that it was nearly seven o'clock.

"Time for some breakfast," he said, looking about meditatively. "Wonder where they keep things," he murmured, and was in the act of looking inquiringly behind some suggestive though rough-looking doors, where in fact, he found the household stores, when the door burst open. He turned hastily, dreading he knew not what border ruffian knavery, but saw only a diminutive, water-soaked little being, who asked in a shrill, cheerful tone he recognized, "Where's the folks?"

"Oh—howdy, Henry," said Dolman. "Why—the folks are, not very well at present—they're still in bed."

"In bed?" amazement spoke in every tone of the shrill voice. "Father in bed?—Sarah in bed?" Receiving a nod in answer to each question, he inquired, "What's wrong?"

"If you would lower your voice it would be more conducive to the welfare of the family," said Dolman, his keen eyes twinkling, though the situation was grave enough. "I'll tell you what's wrong," he continued more seriously. "Do you know what 'border ruffian' means?"

"Have they been here?" asked the boy, suddenly growing pale, though his eyes flashed and his little fist clenched itself involuntarily.

Dolman told him what had happened—told it more plainly than to Sarah, for he recognized that here were nerves

good and sound, and a spirit, though young, yet undaunted.

The boy listened to the end, speechless with emotions of anger and a kind of terror.

"Well, what do you think of it," asked Dolman, curiously.

"Thee knows what I think of it," he said. Then, after a pause, he said in a wondering kind of tone, "That Burk fellow, that tried to save father—why—does thee know he comes here real often?"

Dolman looked puzzled. "He had business with your father, I suppose?" he inquired.

"Business—not that I know of. He never did anything but sit under a tree and talk to Sarah."

A light began to dawn in Dolman's mind. Sarah! Could it be that the child had a lover in this handsome young Southerner, whom he already hated with a most cordial and healthy hatred? He was glad that he had put no more gracious light on Burk's conduct than he had. He was glad he had not known anything of this when he told her the story, else he could not have spoken so dispassionately of the young man's efforts. If Sarah cared—it was certainly a very sad affair.

He dismissed Sarah and her probable love-affairs from his mind, however, as effectually as might be, in favor of the more practical duties before him.

"Now, Henry, we've got to get some breakfast. Show me where the things are kept, and I'll show you how to cook." He took one of Sarah's aprons from where it hung in a corner, and pinned it to his coat—it would half go round him. Then, dismissing Henry to milk the cow and "do his chores," he set briskly to work.

In a few moments he tip-toed into the other room, and seeing his patients both slept, nodded in a satisfied way. When Henry came in, they two sat down together and ate a quiet meal.

When they had finished, he said: "Now, young one, listen to me. I have got to go to Lawrence this morning. Your father will be all right, I think, after a few days' rest and so will your sister. When they awake see how good a breakfast you can get them, and I'll come out again this evening or to-morrow morning."

So saying he hastened to the barn, where he found the borrowed team and wagon, and drove, rattling, rapidly away.

(To be continued.)

## For the Little Ones

### GRANDMOTHER AND ME.

Grandmother, dear, is a very old lady,  
Grandmother, dear, can't see,  
But when she drops things or loses her  
spectacles,  
Grandmother's eyes are—me.

Grandmother, dear, is a very old lady,  
Sometimes she never hears,  
But I always run when the postman  
comes ringing,  
I can be grandmother's ears.

Grandmother, dear, likes houses all tidy,  
Everything dusted and neat,  
So I work with my little red broom and  
my duster;  
I can be grandmother's feet.

Grandmother, dear, is a very old lady,  
Can't walk, and can't hear, and can't  
see,  
You never could tell, though, the fun we  
have playing—  
Grandmother, dear, and me.

—Carolyn B. Bailey, in The Congregation-  
alist.

### A Very Queer Boy.

Once there was a boy whose name was Robin. He was a very slim and little boy, and every one said, "What a tiny little boy! I should think you would be afraid the wind would blow him away." And his mother began to think about it, and she grew fearful that this might happen, so she tied a long rope around his waist and fastened it to a tree, so that when the wind blew hard it could not take him away from her.

But this is not the queerest thing about this small boy. I will tell you the strangest thing—and you may believe it or not as you like. His father said it was a dream—and may be it was. He wanted a pair of boots,

dreadfully, and he begged his father for them.

"I will be so good, and so careful," he said, "and I will not wear them out for a whole year."

At last, after Robin had asked as many as fifty times a day for three hundred days, his father promised him that he should have them. And all that day Robin's heart was so light that he nearly blew away several times.

That evening his father gave him the boots; tiny, cunning, little boots, with a little loop of tape sticking over the top, just like his father's. Robin pulled them on, and then he stuck his finger through one of the loops and said, "What is this for, father?"

"That is to pull yourself up by," said his father, who was a funny man, and liked to make jokes.

Robin always thought his father's jokes were earnest, and so he believed this one. He stuck a finger through the other loop, and pulled as hard as he could. And what do you think? He pulled himself right off the floor, and everybody was so astonished!

"Well, Robin is a great boy!" his father exclaimed. He was dreadfully surprised.

"Can you pull yourself up by your boot-tops, father?" asked Robin.

"No," said his father. But he thought he would try, just for fun, and sure enough, he began to rise from the floor, too.

"Well!" said Robin's father, "Did you ever! I did not know I could do that!"

"I'll pull you a race, father," said Robin. "Let's see who can pull up to the ceiling first."

"All right," said his father, who thought this was great fun.

So they pulled as hard as ever they could, and in a minute Robin's father said "Ouch!" in a very loud voice, for he had bumped his head against the ceiling.

"You beat!" said Robin. "Now let's go out doors and see how high we can go."

So they went out of doors, and pulled themselves up by the boot- straps, higher than the trees. Only Robin's father got his foot caught in the branches, and they nearly had an accident. He had to take his boot off in order to get away at all, and he had to leave it up there, for it was caught hard and fast among the branches, and he could not get it out. After that he could not pull himself up very well, for he could only pull on one side, and that made him fall over.

Robin became so much interested in watching his father's misfortunes that he loosened his hold on his own boots, and of course he dropped right down again. And he came down with a great thump—and the next thing he knew he was on the floor beside his own little bed, and his father was saying, "Well, you rolled out of bed, didn't you, Robin? Have you been dreaming?"

"Dreaming—yes, I guess I was dreaming!" said Robin, and he told all about the boots and how they could pull themselves up by the straps.

"Well, well, that was a funny dream," said his father.



"They make me feel so good."

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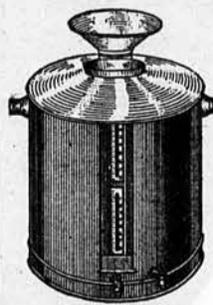
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## The Home Circle

CONDUCTED BY RUTH COWGILL.

### LYRIC OF ACTION.

'Tis the part of a coward to brood  
O'er the past that is withered and dead;  
What though the heart's roses are ashes  
and dust?  
What though the heart's music be fled?  
Still shine the grand heavens o'erhead,  
Whence the voice of an angel thrills clear  
on the soul,  
"Gird about thee thine armor, press on  
to the goal!"

If the faults or the crimes of thy youth  
Are a burden too heavy to bear,  
What hope can rebloom on the desolate  
waste  
Of a jealous and craven despair?  
Down, down with the fetters of fear!  
In the strength of thy valor and manhood  
arise,  
With the faith that illumines and the will  
that defies.

"Too late!" through God's infinite world,  
From his throne to life's nethermost  
fires—  
"Too late!" is a phantom that flies at the  
dawn  
Of the soul that repents and aspires.  
If pure thou hast made thy desires,  
There's no height the strong winds of  
immortals may gain  
Which in striving to reach thou shalt  
strive for in vain.

Then up to the contest with fate,  
Unbound by the past, which is dead!  
What though the heart's roses are ashes  
and dust?  
What though the heart's music be fled?  
Still shine the fair heavens o'erhead;  
And sublime as the angel who rules in  
the sun  
Beams the promise of peace when the  
conflict is won!

—Paul Hamilton Hayne.

### A Word for the Country School.

ELSIE S. TAYLOR, ELLIS, KANS.

Who of us, who have grown to manhood or womanhood, does not look back with pleasure to his school days in some little, rickety, dilapidated schoolhouse? The little schoolhouse where the first eight years of my school-life were spent was a typical Kansas schoolhouse on the plains. Ever since I can remember it, it looked the same, except to grow more battered and weatherbeaten every year. The few desks and seats the room contained were enduring monuments of their occupant's artistic skill with jackknives. Fancy lettering, flattering pictures of schoolmates and geometrical designs were scattered about over them in great profusion. The canvas blackboard on the east end undulated gracefully whenever the wind blew through the numerous cracks in the wall. One or more of the windowpanes were always broken to permit the passage of balls in the game of "ante over." The stove in the center of the room was adorned with sliding-doors, which served to break up the monotony of existence more than any other feature of school-life. Whenever they were moved they fell off with a delightful crash, the teacher became confused, sometimes vexed, when trying to replace them with the poker and a piece of waste-paper, and the pupils, one and all, stopped work and looked on with keen enjoyment.

A very expensive globe and manikin, more appropriate for a high school, were stuck away in the corner. The broom was stiff, the washpan leaked, the coal-scuttle sifted dust, the plastering fell from the ceiling and walls during hard winds. The schoolhouse had no chimney and would catch fire occasionally from flying sparks. The water from the well was the double-distilled quintessence of last summer's mice, rats, snakes, gophers, and other small creatures which had crept in under the platform. The little hall, joined to the main part of the building by a narrow passage, was a spacious room, twelve feet square, well lighted by the wall upon which hung a shelf of books. The spacious hall was enlivened by the presence of one pressed to the wall.

This saved the boys from the indignity of standing in the aisle. The boys stood in the aisle, and the thistle was bare.

footed urchins often found to their sorrow.

Over it all the hot winds blew and the blizzard howled and the spring rains fell. The first meadowlark perched on the gate to sing his cheery little song. From the south window could be seen the long grey-blue ridge of low hills, from the north only a gentle slope to the sky. The little old schoolhouse all alone on the plain! We Jayhawkers have all seen it, and known it and loved it.

How many have laid the foundations of a great education and a grand life-work within just such environments as these! How many more have received a common school education which has been an aid to pleasure and profit! A very great per cent of our great men laid the cornerstone of future eminence in the country school. Its influence can never be estimated. It has touched the vital organs of our Government in a thousand subtle ways.

The question is often asked nowadays, "Why does the country lad almost always excel his city classmates when he enters the high school?" Their advantages have been superior; a longer term, a better qualified class of instructors, better apparatus, better access to other avenues of education, such as libraries, newspapers, lectures, etc. It seems that the city boy has had the better chance in every way.

There are several explanations to this problem. The first and most vital cause of the city boy's inferiority of mind-power is not the fault of the pupil, nor do I think it is directly the fault of the teacher. It is the fault of the system of our public schools. It is the incessant cramming and rushing of the pupil through his grades. There is a constant strain on both teacher and pupil to complete a certain amount of work regardless of the pupil's capacity. A test or review usually does not extend over ground covered more than two or three weeks before. Good class grades exempt the pupil from all examinations. Thus, the whole machinery of thought is trained to the idea that "Sufficient unto the day is the evil thereof." The memory retains nothing for more than a few weeks except in hazy and undefined perceptions. This is the natural result of a course much too heavy for the pupil. Memory must be cultivated and strengthened by repetition and for this there is no time in the town schools.

Another cause is the devitalizing influence of cigarettes and other vicious habits usually contracted by idle boys in town. Late hours and lack of exercise also help to undermine the general health and distract the mind from study.

The country lad after a walk of one, or perhaps two, miles in the frosty morning air, arrives at the schoolhouse with all his faculties, of whatever order they may be, at their prime. There is no diversion but the various games at recess and noon. During the evening, if he is at all industrious and ambitious, there being no pool-hall or street corner to frequent, his books are more likely to receive attention.

Of course there are many exceptions to these assertions. I know of many country boys and girls who spend much time and money in town; and I know, also, of young people among my town classmates who are industrious and free from all bad habits. But as a general assertion, applying to the majority, this is not the case. Indeed, I can now recall but two boys in our town who have ever attempted to begin a college career, even though they were unhampered by poverty or lack of influence in any way. The sons of well-to-do and educated men leave school before they have even completed the eighth grade.

In many ways the country school is a more natural, a more healthful, and a stronger educational force than is the town school for the first eight grades.

For some pupils competition is a good thing; but I have come to the conclusion that these cases are extremely rare. The ambitious pupil will carry more than he can stagger under to be at the head of his class. There are a certain class of indolent

pupils who rather enjoy being the dunces of the class. But for the great majority of pupils a class of fifteen or twenty is a lottery for them from which to draw their daily grades. For example: a pupil may glance over his lesson in physics hurriedly. Suppose it is the lesson on "heat and cold." They may glance over the lesson and be able to tell absolutely nothing about it except a hazy recollection of a definition in large type: "Heat is molecular energy." Now, in the strange course of events, it may happen that this pupil may be asked that very question, "What is heat?" and that he may answer it correctly, and to all appearances understandingly, and receive as good a grade as though he had thoroughly mastered the subject. All this encourages him to do the same thing again, and if he shall have as good fortune many times he will receive exemption grades and pass out of the subject.

I have attended both the country and the high school. Both are considered good schools. The high school is one of the best in this vicinity. I can see now, "in the mind's eye," page after page of the grammar, and arithmetic, and history, that I studied in the country school. The dates that were said over every morning for perhaps three or four months; the definitions that were reviewed year after year; all these are a part of me, as much as my hand is. They can never be forgotten. But last year's Latin and geometry, though it brought me exemption grades at the end of the term, must be looked over again to catch lost threads.

The country school, of course, has its defects. A poor teacher can do more harm in a country school—but a conscientious and well-qualified teacher can, on the other hand, do more good here—than in the city school. As a general thing the town school is more or less of a machine, and the teacher must move in harmony with it; but the country teacher makes his own methods and routine. The country school needs more comfortable buildings and furniture. It needs less expensive apparatus and more of the essentials, more artistic touches, both inside and outside of the schoolroom. It needs several branches taken out of the common school course and no more put in. The teacher always has more classes than she has time for them to recite. It needs more money appropriated for teachers' wages, so that teachers can afford to qualify themselves and keep in touch with the thousand and one things that come into a teacher's life nowadays. If a country teacher has a school of seven months at \$35, he thinks he has a fairly good school, but he could hire out as a farm-hand at \$20 and board and be \$100 better off at the end of the year, for the teacher makes only about \$20 a month for an average of the entire year; and he has in addition his board, normal or county institute expenses, reading-circle books, and what not to pay for. Let the district board pay its teacher as well as its farm-hand before it complains of poor schools.

A school library is a good thing for a country school; a very good thing. For many children (far too many) this is the only gateway to the great world of literature. But these books must be selected and used with great discretion or they will be useless. And this library must not cost too much. It must not take the vitality and best inspiration from a term of school to procure it. Many times the social event, the proceeds of which are to buy the library, occupies the mind of teacher and pupil until the long-prepared-for evening comes. Then the remainder of the term is a relaxation, and is spiritless and without enthusiasm.

The parents of country pupils are, I think, more reasonable, as a general rule, than those of the town boys and girls. There are some districts where the ideals of the entire community, in educational lines, are high and elevating, and where the parent is a constant incentive to the pupil and a source of much gratification to the teacher. But there are also parents who uphold the pupil in all his mis-



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conduct and indolence and are, on the contrary, a constant annoyance to the teacher.

Some parents have very extraordinary ideas about what their children should be taught. Their ideas are very positive. Some want this, some that, and both are determined. What the teacher should do in such cases is a question. Some would say, "Go and talk to these parents and try to persuade them to a more sensible course." Others would say, "Pay no attention to ignorant and bigoted people, and do as you think best."

It seems ridiculous that a person who has spent time and work and money for his ideas should be obliged to quibble with coarse and narrow-minded parents for a chance to do his duty. But, on the other hand, a pupil will make little progress when his teacher and parents are at sword's points with each other. We must do what the angels do—the best we can.

To be successful a teacher must have a great amount of patience, decision and self-control. Put a little variety into the school-work. Avoid a regular routine day after day. Never tire of explaining over and over the thoughts in the tangled sentences of the reading-lessons. Make your pupils think and talk, and talk well. There is no other study so neglected in the country schools as the enlarging of the vocabulary. Do everything thoroughly; do not cram; do not hurry. You will have to be very watchful or you will unconsciously get into this fatal habit, fatal alike to your efficiency as a teacher and your pupil's growing mind.

There is a wide field, a beautiful meadow, as it were, in education that is often never entered. It is the education and culture of the emotions. Emotion is no less a part of the mind than is intellect but this seems to be often forgotten. I believe that there are many children who have never felt the emotions of awe or reverence, of humility, of genuine patriotism, or keen sympathy.

We must make the literature of the school-course do its elevating, broadening, inspiring work. We must make it be as soft fingers touching the delicate harp of the emotions and bringing a sure response for the softest touch.

The life of a teacher is pleasant in some ways but it has many hardships and disagreeable situations. The teacher must give his vivacity and elasticity of disposition to his pupils for their encouragement and enthusiasm and oftentimes he has none left for himself and acquires that jaded and wearied aspect often humorously applied to teachers. Any one who contemplates commencing or continuing teaching as a profession must be resolved to like it whether he will or

no if he would not bend under the load.

I have gained pleasant memories and many friends and acquaintances from my work as a teacher. If any one who is now a teacher, or who wishes to be, should read this article and get even a very little hint which would make their work better, pleasanter and more profitable to herself, I shall be well satisfied.

### Club Department

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#### Our Club Roll.

- Mutual Improvement Club, Carbondale, Osage County (1895).
- Give and Get Good Club, Berryton, Shawnee County (1902).
- Woman's Literary Club, Osborne, Osborne County (1902).
- Ladies' Reading Club, Darlington Township, Harvey County (1902).
- Woman's Club, Logan, Phillips County (1902).
- Domestic Science Club, Osage, Osage County (1888).
- Ladies' Crescent Club, Tully, Rawlins County (1902).
- Ladies' Social Society, No. 1, Minneapolis, Ottawa County (1888).
- Ladies' Social Society, No. 2, Minneapolis, Ottawa County (1889).
- Ladies' Social Society, No. 3, Minneapolis, Ottawa County (1891).
- Ladies' Social Society, No. 4, Minneapolis, Ottawa County (1897).
- Chalitto Club, Highland Park, Shawnee County (1902).
- Citrus Club, Phillipsburg, Phillips County (1902).
- Literae Club, Ford, Ford County (1903).
- Saban Club, Mission Center, Shawnee County, R. R. No. 2 (1899).
- Star Valley Woman's Club, Iola, Allen County (1902).
- West Side Forestry Club, Topeka, Shawnee County, R. R. No. 8 (1903).
- Fortnight Club, Grant Township, Reno County (1903).
- Progressive Society, Rosalia, Butler County (1903).
- Pleasant Hour Club, Wakarusa Township, Douglas County.
- The Lady Farmers' Institute, Marysville, Marshall County (1902).
- The Woman's Progressive Club, Anthony, Harper County.

#### Juvenile Literature.

MRS. FLORENCE SHAW KELLOGG, COSMOS CLUB, ROSSVILLE, KANS.

(Concluded from last week.)

Chas. Lamb says: "A good book, read until it becomes a part of life, is a thing to say grace over." And why not say grace over that which feeds the mind as well as that which feeds the body? "What we learn in our youth grows up with us and, in time, becomes a part of the mind itself," and it is for us each to see to it that it is an ennobling part. In reading, as in other things, there can be few set rules, as we must meet individual needs and conditions, and adapt all our teachings to the individual child, taking care that the food for the mind, as for the body, be pure and strengthening. It is much easier to guide aright in the beginning than to reclaim in after years one who has gone astray. The child-world is a world of fancy and imagination, wherein wonderful beings come and go at will. This period quickly merges into the period of hero-worship, and the child makes idols of those who, in after years, will be recognized as commonplace men and women only. Some of the workings of the child mind are but temporary phases that will soon pass by; but the wise mother will be mindful of all, and

You want to know how to get my lamp-chimneys.

(1) Your grocer sells them, if he is fit to be your grocer; may be he don't.

(2) If you'll write me, I'll send you my Index; that tells everything.

MACBETH, Pittsburgh.

be ready to give warning or approval as required.

The end of all reading, as of all education, is the perfecting of a man or woman through the development of the child, and all that tends wisely to this development is good, but we may easily go astray through the very "multiplicity of riches," and so lead the child to depend on outer things more than upon himself, thus growing outwardly rather than by the evolving of the God principle within his own soul. Because of the many books about him, the child is tempted to skim through them, getting little lasting good from any. In the earlier days, the reading or owning of a book was an event in a child's life, and, because of the difficulty in getting one, the infrequency of it, it was prized and appreciated to a degree that the children of to-day can scarcely understand. Who can read untouched of Lincoln's hunger for books and the efforts he made to procure them? Who can doubt the influence of his reading on his whole after life and character? He is but one among many. Benjamin Franklin tells us Mathews' "Essay to Do Good," an essay on projects, together with "Pilgrim's Progress," and "The Spectator," gave color and purpose to his after life; Samuel Johnson, when a clumsy lad "stumbled on Petarch and was from that day destined to be a man of letters." John Keats read Spencer and "then and there became a poet, by the grace of God." A copy of Burns, bought of a "wandering peddler," gave to the mind of Whittier its "life-direction and coloring," and helped him to find in the familiar and humble things about him "the tender idyls of the heart"—and the list might be indefinitely extended, but that I fear to weary you with facts already known.

Let the child learn to keep a sweet simplicity of style in both reading and speaking—thus in after years shall the "common people hear him gladly." The world is full of common people. They make not only the bone and sinew but the very heart and soul of our National life, and the more gifted classes may well give themselves to their enlightenment and instruction. Robert Collyer, that dear old father who holds his audience entranced while he teaches so beautifully of the life of love and truth, said: "You ask me how I am able to talk to you in this simple Saxon. It is because I read John Bunyan, Crusoe and Goldsmith when I was a boy, morn, noon, and night. These, with the Bible stories, were my delight. I took to them as I took to milk, and without knowing what I was doing, got the taste for simple words into the very fiber of my being." One reason given for Helen Keller's beautiful way of expressing herself is that her wise, patient teacher, Miss Sullivan, "never tried to adapt her speech or belittle it to fit the supposed case of her pupil's mind, but spoke complete sentences, using natural words in their proper construction." And right here is a lesson for all who have to do with the teaching of children, or the writing of books for them; do not talk or write down to them. Hawthorne tells us, in the preface to one of his books for the young, that he "never thought it necessary to write down to their comprehension, but soared with his theme whenever he felt like it, feeling sure of their ability to follow him." He declares that "children possess an unestimated sensibility to whatever is deep and high in imagination or feeling so long as it is simple likewise. It is only the artificial and complex that bewilder them."

Sir Walter Scott says, "Children derive impulses of a powerful and important kind from hearing things read which they can not entirely comprehend. It is a mistake to write (or to read) down to them. Set them on the scent and let them puzzle it out."

It is very evident to the observant mother that they soon want other mental food than the stories of their own little lives can give. Books that call out judgment, stimulate imagination, teach of right and wrong—inculcating love of right, and of high, pure living, should be among the first given to children. Mother Goose may open the door, Grimm and Anderson will lead

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gently on through fairyland and fable until they are ready to enter the more sober realms of fact and history; but guard carefully that they do not become slaves to the printed page or to the thoughts of others. Let nothing usurp the child's own self, nothing come between its soul and the God-soul. Let them learn early to look within and find there the God-given riches of thought and feeling, while

"Nature, the dear old Nurse,  
Takes the child upon her knee,  
Saying 'here is a story book  
Thy Father has written for thee.'"

Under her wise guidance no child can go far astray. Children—that is most children, have a natural love of poetry; and if the mother "lends to the rythm of the poet the beauty of her voice," the lessons will be doubly dear and longer remembered—for the beautiful words dwell with them and bear rich fruit in after years.

William Brunton, in his "World, Beautiful in Books," says, "A love of reading is one of the golden gifts of the parents to the children," and warns against letting them read bad books on the plea that they have got to know what life is, for "Life is not what the cynic says it is," but what "the pure in heart represent it to be;" what "Tennyson, Emerson, Whittier, Longfellow, and all the best minds picture it." He urges the necessity of telling them "the story of the Eden garden and the trees growing there," and I would impress their minds with the fact that each of them may still live in that beautiful garden if they be pure and good, and that the revelation of life, the knowledge of good, will be given personally to each of them there if they will but receive it. Let them clearly understand that they may make of life what they will, and that their reading is a large and important element thereto, and they can not afford to read any but good books.

I do not speak of the dime novel, or of the goody-goody Sunday school books, that Dr. Hirsch denounces as being "even worse than the dime novel," for I would not so insult your intelligence by deeming it necessary—and many points, equally important as those I have mentioned, will occur to you, of which both time and space forbid me to speak. I can only hope I have given you some little "food for thought," that will bear beautiful fruit in the lives of your children and reflect to your honor and happiness. The mother's work is divine—extending on and on in ever-growing beauty and majesty through the eternal years; and

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she, more than any other, leaves the impress of her character and life upon her children. In this belief

"Let us toll on; the work we leave behind us,  
Though incomplete, God's hand will yet-  
em-balm.

And in some way the news will yet find us  
In Heaven above, and sweeten endless  
calm."

And to each of you may the "Well done" of the All-Father be your great and joyous reward for all the years given to the loving care of your children.

#### Divisions of Time.

There are two kinds of time—clock or mean time and apparent or sun time. Clock time is always right, while sun time varies every day; the sun very seldom being on the meridian at twelve o'clock, solar day differing in length, owing to the ellipticity of the earth's orbit, etc.; but a mean solar day, as recorded by clock time, is twenty-four hours long. An astronomical day begins at noon, twelve hours after the beginning of the civil day, and is counted from the first to the twenty-fourth hour. A civil day commences at midnight, and is counted from the first to the twelfth hour. A nautical day is counted as a civil day, but commences, like an astronomical day, at noon. A calendar month varies from twenty-eight to thirty-one days. A mean lunar month is twenty-nine days twelve hours forty-four minutes two seconds and a small fraction. A solar year, or the transition from one vernal equinox to another, consists of 365.24244 solar days, or 365 days 5 hours forty-eight minutes and 49.536 seconds. A Julian year is 365 days; a Gregorian year is 365.2425 days. Every fourth year, or leap year, has 366 days.

#### Hints to Housekeepers.

The wife of a wealthy fruit-grower surprised her friends during the holidays by serving watermelons, muskmelons, plums, and grapes as fresh as when they were gathered. Asked to tell the secret, she replied: "It is the simplest thing in the world; any one can preserve fresh fruits in the same way. The melons I first dip in a wax preparation and coat the stems with sealing wax. After this I coat them with a thick coat of shellac and bury them in a box of sawdust to keep them from rubbing together and from freezing. The grapes are coated in the wax only, but the plums and other fruits are coated with the wax and then with the shellac. All are carefully packed in sawdust."—What to Eat.

## KANSAS AT THE WORLD'S FAIR.

(Continued from page 553.)

It covers about twenty-one acres of ground and has seven miles of aisles. In this building are found exhibits from all nations of the earth who have contributed, and from the States and Territories of the Union. But, first of all to be completed, and most conspicuous by reason of its beauty of arrangement and the wonderful variety of the products shown, stands Kansas. As she is the central State in the Union so her exhibit occupies a central space in this vast building.

From the obese steer which stands on top of the central monument of grains, grasses, and forage-plants, and which is so redolent of corn that it sticks out all over him, to the stem of joint-grass brought in from the short-grass country, which trails its sinuous length of twenty-seven feet up one of the corner pillars, the space allotted to Kansas is full of interest and value to every man who eats or who enjoys living in a climate where good things grow.

Just south of the Agricultural Palace is the Palace of Horticulture, which, though not nearly so large, is full of the good things of life. Here again Kansas stands in the very foremost rank. She shows no freaks or monstrosities, but from the top of the handsome arches which span her exhibit to the bottom of the beautifully laden and handsomely arranged tables everything speaks of quality. Here is found a display of fruits and berries that will bring pride to the heart of every Kansan and hunger to the stomach of every visitor.

In the Palace of Agriculture will also be found the Kansas dairy exhibit than which there will be none better or more tastefully arranged. This exhibit is a temporary one of necessity, and must be renewed from time to time as the materials of which it is composed are so hard to preserve. At the time of our visit, the exhibit was in a transition stage, but the plans include a large refrigeration space devoted to the exhibition of dairy products, and, on the west side of the building, the exhibit of dairy methods and machinery. In addition to this will be an independent exhibit made by the Continental Creamery Company, the largest of its kind in the world.

Over in the Mines Building, Kansas has the most complete and the most artistically arranged exhibit of mineral resources that we saw in the building. Other States and Territories occupy more space and some of them show gold, silver, and precious stones; but Kansas, with her coal, lead, zinc, petroleum, salt, limestone, gypsum, fire-clay, etc., takes a proud rank among her sisters.

In the Education Building, Kansas is not behind in any department. From her magnificent State University down through all grades to the common country school, the exhibit shows methods as well as work accomplished. The Agricultural College is not shown in this department, as the work of this class of institutions is exhibited all together in a section especially devoted to agricultural colleges.

Taken as a whole, the exhibits from this State now in position at St. Louis can afford nothing but pride to all Kansans and surprise to all others. With the coming of the live-stock exhibits next fall we know from our personal acquaintance throughout the State that while Kansas will be in the best of company and the hottest of competition she will simply be where she belongs.

Another matter of pride and satisfaction to all Kansans is the Kansas Building. Though not so large or so imposing as some, it is beautiful and a marvel of convenience. In the great assembly hall, which occupies the center of the building, may be found a gallery which is hung with paintings of merit, all done by Kansas artists. These are some three hundred in number and constitute the only exhibition of the kind in the World's Fair grounds. To the Kansas Commissioners and the assistants they have appointed in the various departments, will come from all over the State words of commendation for the results ac-

complished and for the promptness with which it has been done. To them Kansas can say, "Well done good and faithful servants."

## INTERNATIONAL GOOD-ROADS' CONVENTION.

One of the greatest meetings of men, whose object was the good of their fellows, that was ever held in the history of this country was the International Good-Roads' Convention which closed its session in St. Louis on Saturday last. Delegates were present from the States and Territories of the Union and from many foreign countries. Speeches were made by men of more than National reputation and enthusiasm was intense. Kansas had one of the largest delegations in that great body, and her influence was felt for good throughout the meeting. The Kansas delegation held meetings each day in advance of the general meeting and discussed ways and means whereby the good things disclosed by the speakers could be used to the advantage of our own State.

The delegation was called to order by Mr. Grant Billbe, of Iola, president of the Southeastern Kansas Good-Roads' Association, and by vote he was elected temporary chairman. Mr. I. D. Graham, of KANSAS FARMER, was made temporary secretary. The National Good-Roads' Association had requested that each State delegation name the officers which should serve with that body, and by vote Mr. Chas. L. McClung, city engineer of Kansas City, Kans., was made member of the general committee on resolutions for Kansas. By vote, a committee of three, consisting of Geo. W. Skinner, Neodesha, chairman; H. J. Harding, city engineer at Wichita, and C. F. Miller, secretary of the Southeastern Kansas Good-Roads' Association, Fort Scott, was appointed by the chair to recommend as to time and place for the calling together of delegates for the organization of a State Good-Roads' Association. The committee recommended that such a meeting be called at Topeka on August 2, and their report was adopted. Mr. W. S. Williamson, of Emporia, moved that the secretary be instructed to invite delegates from all counties and municipalities that are interested, especially to get in touch with the county clerks, county commissioners, granges, commercial clubs, and farmers' institutes throughout the State, and invite them each to send delegates to this meeting. By vote, the temporary officers were continued in office until the State meeting.

The delegation then elected Mr. I. D. Graham, of the KANSAS FARMER, as vice-president for Kansas of the National Good-Roads' Association, and recommended that the advisory committee from Kansas should consist of Hon. Chas. Curtis, Topeka; Hon. Chas. F. Scott, Iola; President Ernest R. Nichols, of the Kansas State Agricultural College; Hon. B. P. Waggener, Atchison; Calvin Hood, Emporia; H. J. Harding, Wichita; E. F. Heisler, Kansas City; and H. W. McAfee, Topeka. It was also decided by those interested to call a meeting of the Southeastern Kansas Association to be held at Iola on or about July 19, a definite announcement as to date to be made later.

The feeling of these representatives of the various States is that the burden of bad roads has already been borne too long; that it is no more the business of the farmer to build good roads in the country than it is of the business man of the town; that the dirt road has come to stay and methods of improving and maintaining it are now the chief problem, and that results that are adequate can only be accomplished by union of effort. We hope that every newspaper in Kansas will make this call to the State Convention to be held on August 2, and that the representation of our people will be in proportion to the importance of the subject.

The delegates in attendance at the National and International Good-Roads' Association from Kansas were as follows: Grant Billbe, president Southeastern Kansas Good-Roads' Association, Iola; C. F. Miller, secretary Southeastern Kansas Good-Roads' Associa-

tion, Fort Scott; H. J. Harding, city engineer, Wichita; Chas. L. McClung, city engineer, Kansas City; Chas. L. Way, street commissioner, Wichita; Geo. W. Skinner, Neodesha; N. C. Basham, Pittsburg; H. B. Reed, Gridley; E. F. Heisler, Kansas City; S. M. Smith, Fredonia; W. S. Williamson, Emporia; J. E. Woodford, Burlington; Frank O'Reilly, Girard; L. D. Herlocker, Farlington; John Knaus, Benedict; Jacob Jacob, Neosho Rapids; Dr. A. L. Hitchens, Burlington; J. C. Naylor, Baxter Springs; G. R. Wolf, Ellsworth; H. W. McAfee, Topeka; I. D. Graham, KANSAS FARMER.

## A NEW COUNTRY.

On Saturday evening, May 14, the writer, in company with a party of newspaper men, left Kansas City on the Frisco road for a trip to the World's Fair. By previous arrangement the editors were allowed to travel to St. Louis from Kansas City, through eastern Kansas to Fort Scott, thence east to Springfield and St. Louis, with the privilege of returning to Kansas City direct from Springfield through western Missouri. To the Kansan, who is accustomed to our broad and level prairies, the trip was at once a revelation and a joy. The service given by the company is excellent, the roadbed is hard and smooth and the "meteor" on which we rode, skimmed along over the hills and dales with no perceptible jar and in a manner which defines the poetry of motion of the poets. The journey to St. Louis was made largely after night. We left Kansas City at 6.45 in the evening and arrived at St. Louis at 7.20 in the morning, having had a delightful night's rest, and being so hungry that we felt like the great John Ridd who thanked the Lord for the room there was inside of him. A train of street-cars awaited our party of 450 at the Union Station and in twenty minutes we were at the World's Fair grounds.

The return trip was purposely made, in daytime so that we might see the country through which this great railroad system passes. After getting well out of St. Louis we encountered a rolling country which is covered for hundreds of miles with a dense growth of timber, interspersed with open vales and parks, each occupied by its prosperous farming population. At times the road passes through the forest which hems it in on either side so that we are in a continual gloom, which is redolent of the spicy odors of the native trees and flowers. At other times we mount upon the crest of a divide and see on either side, as far as the eye can reach, a billowy expanse of tree-covered hills which seems to have no limit. Here we plunge down a smooth grade into a dark and snaky valley, there we climb the side of a hill or encircle its summit, with never a change in speed and never a jar of discomfort. The forest is always present. Growing in massive sturdiness as we pass its immense trunks in the lower slopes and valleys, or spreading out in park- and lawn-like appearance as we climb to the top of the hills, and see vistas of green in all its shades as we look out over the varying foliage of what, to a Kansan, seems the greatest forest on earth. So dense is the forest growth that we who come from the plains find ourselves wondering where the people live and what supports the towns. Glimpses through the trees show the farmstead of the settler, and the lazily curling smoke indicates the location of others that can not be seen from our swiftly moving train. Occasionally a park-like expanse appears which is under high cultivation and in it we see the comfortable home of the farmer. Frequently we pass herds of cattle at pasture on the rich and luscious bluegrass which is everywhere present beneath the trees, and we were pleased to notice that these herds of cattle show the potent influence of Short-horn blood. Everywhere that a clearing has been made we find an orchard planted. Sometimes the fruit-trees are merely set in place among the stumps. At other places the land has been thoroughly cleared, the ground cultivated, and the orchards planted. But everywhere there are orchards,

and apparently we are in the midst of a wonderful fruit region. To the south of us, reaching to the Arkansas line and beyond, lies the stretch of territory that has made Missouri famous as a fruit State, and the most magnificent fruits of all kinds are grown on the cheap lands which lie so close to the market reached by the great Frisco System. We were told that this timber land can be had at from \$2.50 per acre and up and that the wood which may be cut from the land would easily pay for it.

This section of Missouri is the delight of the hunter and fisherman. Here deer may be found in numbers, bear are frequently met with, while all sorts of small game is abundant. The streams in this region are beautifully clear and deep and teem with the choicest of fish, among them being the king of all game fish, the black bass.

When one travels to the World's Fair it should be for the purpose of recreation as well as instruction. He should seek a line of road that would carry him through comfortably and rapidly so that he may satisfy his eager craving to see the great World's Fair.

When he has seen the greatest of all expositions he is physically and mentally tired, and no more tempting pleasure should be offered to a lover of the rod and gun than that afforded by the country through which the Frisco passes. He can stop over at any station in the heart of the game region and spend a few days or weeks in this great natural park, where he can hunt and fish and loaf and content his soul. We are a most earnest advocate of the good-roads' problem and the Frisco is a good road.

## ROAD IMPROVEMENT.

For the first time in history a State agricultural college has been given road-building as a branch of instruction that is of vital importance to every inhabitant, and that can be handled by it perhaps better than by any other organization in the State. The Legislature of the State of Iowa has constituted its State Agricultural College a Highway Commission, whose duties are to adopt plans of highway construction and maintenance suited to the needs of the different counties and to conduct demonstrations in road-building once a year for the instruction of county supervisors, township trustees, superintendents and the college students. Also to furnish advice and information to supervisors at any time and to conduct public demonstrations whenever called upon to do so by the county officers who will furnish tools, help, power, and material.

It is planned by the authorities of the college to give a short course in road-building. These facts are mentioned to show that Iowa has gained the distinction of being one of the most progressive of the agricultural States by reason of such methods.

The writer has just returned from attendance at the National and International Good Roads Convention at St. Louis, and while there he listened to every phase of the good roads problem that was presented by speakers both great and small. While the ideas of the speakers varied greatly, the writer came home with the impression that the dirt road has come to stay; that the way to have a good dirt road is to study drainage; that good roads do not mean higher taxes, but a proper use, and not a waste, of those that are now assessed, and that good roads are only possible by good methods and by united effort.

Ex-Governor Francis, of Missouri, recommended the employment of the convicts now in our State prisons who have nothing to do or for whom work must be made. General Miles recommended the employment of a large number of the cavalry force of the United States as engineers and experts, who could not only build good roads but give instruction as to how it should be done. Senator Lattimer, of South Carolina, spoke of his measure now pending before Congress in favor of National aid in good road-building. And many other speakers of note contributed their ideas on the great problem.

Hon. A. W. Campbell, Director of Public Works, Toronto, Canada, seemed best able to grasp the whole situation, and made one of the most magnificent speeches to which the writer has ever listened. He said that after twenty years of experience, spent in the study of the good-roads' problem in most of the civilized countries of earth, he had arrived at the conclusion that no general rule can be made for good roads which will apply everywhere. He stated that the soil must bear the burden of the traffic and that the stone or other covering is merely to give it a hard surface to prevent its wearing rapidly. There is one point in which all roads and all methods of road-building are alike and without which no good road can be constructed. This is drainage. If a road be properly drained this can be made of dirt without a hard metal surface and still be a good road. Many people fear to take up the good roads proposition because they think it means increase of taxes. This was shown to be untrue as far as good dirt roads are concerned; and where metal roads are built it was shown that the taxes or other funds used in construction were always an investment which would bring ample returns. It was also shown that it is just as much to the interest of the merchant and business man of the town as it is to the business man of the country to build good roads. The roadways of a community are the signboard of its social and commercial strength. The story of the home is the story of the nation. In all history no nation has made such progress as has the United States. And, excepting the newspapers, no influence has been so great in the development of this country as has the railroads. These good roads have reached out into territory where there were no settlers and have builded neighborhoods, counties, and States. They have reached their limit, however, so far as any great advancement can be made, and are now enthusiastic in turning their attention to the country roads and the city streets as feeders for their great systems. It is just as important for the merchant of the city to have good roads over which the products of the country may be brought to him, or the commodities in which he deals may be sent by him, as it is for the farmer to save his time and his horse-flesh in getting to the market with his produce and from the market with his supplies. Good roads are necessary to the further development of the Nation and the agitation in favor of them should have begun with the signing of the Declaration of Independence.

**Kansas—Her Chief Source of Income.**

E. B. COWGILL, EDITOR KANSAS FARMER, BEFORE THE KANSAS BANKERS' ASSOCIATION, AT WICHITA, KANS., MAY 18, 1904.

When, about 363 years ago, a band of Spanish adventurers from Mexico, under command of Coronado, crossed the plains of Kansas in search of the city of Quivira, reputed to be rich in gold, which the adventurers expected to appropriate, they piously named the river which flows by the doors of the city of Wichita the River of Saint Peter and Saint Paul. The wealth they sought was not found, and though in their tramp to and through the scattered Indian villages of Quivira in the central part of what is now Kansas, they crossed over untold wealth of purest salt, passed by gypsum deposits of surpassing value, and pressed foot over wealth not even now developed, possibly not even suspected, they possessed themselves of none of it, neither did they stop to contemplate the wealth—greater than that reputed of Quivira, greater than that of all the minerals—wealth that lay awaiting the hand of the husbandman that should take it from the soil.

Two hundred and seventy years after Coronado, came another band of whites across the plains of Kansas. Louisiana had passed from France to the United States; but the Spanish in Mexico had scarcely realized that their sovereign had sold the vast domain to Napoleon, much less were they inclined to concede possession to the

Protestant United States. But Lieutenant Zebulon Montgomery Pike was commissioned to return to their lodges, —in what is now western Missouri and southeastern Kansas—some chiefs who had been to see the Great Father at Washington, to negotiate a treaty with the Pawnee Republic, located on the Republican River near the 40th parallel, and to explore Louisiana westward to the Rocky Mountains. This honest and brave explorer, had he possessed the means of reaching it, might have lighted his camp fires from the natural gas reservoirs over which he marched; might have cleaned his flint-lock muskets with rivers of kerosene had he tapped the supplies under his feet; might have made his Government rich with leaden bullets, and have supplied the world with more zinc than it had ever used; might have provided cement for all the works of Uncle Sam, and might have salted the earth—but he knew it not. His keen eye did, however, discern ideal agricultural possibilities and he remarked upon the easy conditions of life on these "buffalo plains," as he called them, compared with the more rigorous existence made necessary in countries farther north, which he had explored previously.

What was obvious one hundred years ago to the hero, for whom was named the great eastern sentinel of the Rocky Mountains, has been entered upon and enjoyed by a race of his kindred, whose sturdy energy does not depreciate, as did that of the savages, by reason of the easy conditions of existence on these plains.

It is not my purpose to weary you with tedious statistics of the results of Kansas farming. But a noted Kansas poet called attention, at one time, to the fact that Kansas population was practically stationary; that the small increase was not equal to the excess of births over deaths. If Mr. Ware had embodied the facts in one of his peculiar rhymes he might properly have said that the natural increase from 1890 to 1900 should have been about 20 per cent while the fact is that our increase was only 3 per cent. Another truth that might have been stated is that the increase that took place in Kansas cities and towns was greater than the total increase in the State, making inevitable the deduction that the population of our farming communities decreased during the latest decade for which we have statistics.

There may be less romance in these facts than in those of our mineral development. But another set of facts is pleasing to the tiller of the soil, and incidentally to his banker, his merchant, his teacher, his preacher, and his editor.

In 1893 the total amount received by the farmers of Kansas for wheat, corn, oats, rye, barley, buckwheat, Irish and sweet potatoes, castor-beans, cotton, flax, hemp, tobacco, broomcorn, millet, and Hungarian, sorghum, rice-corn, tame hay, live-stock products and horticultural products sold, was \$122,570,557.

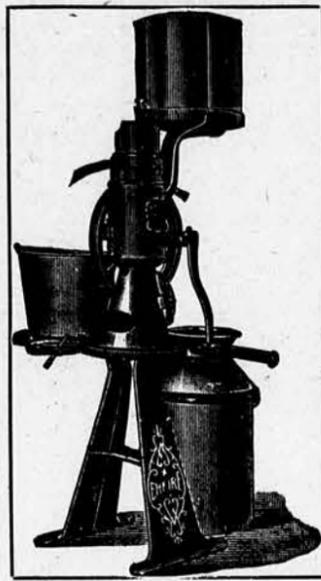
In 1903 a smaller number of Kansas farmers received for a like list of products the sum of \$223,984,498.82.

Let us read the figures together: Ten years ago, \$122,570,557; last year, \$223,984,498.

Observe that these figures—and I desire now to consider especially those of 1903—take no account of the farm products used by the farmers' families, nor of the horses and mules sold, of the breeding stock turned into cash, nor of the many incidentals going to swell the returns for the chief industry of Kansas. Our farm statistics as compiled by our unequaled secretary, Mr. Coburn, are more complete than those of any other State, but our laws have not been so framed as to provide for the collection of entirely complete information. It is roughly estimated, however, that the additions which ought to be made to the reported cash returns should be something like \$136,000,000 making a grand total of returns from the soil of Kansas for 1903, in round numbers, \$360,000,000, or an average of \$2,000 for each of the 180,000 farmers of the State.

The tillers of the soil can look with

**To Farm Dairymen:**



We told you three years ago that the man who shipped his cream direct to some good, reliable firm would realize more out of his product than he could in any other way.

We were right then, and we are right now when we tell you we will put a larger check into your hands each month for your product, than any other concern can do.

Write for shipping tags.

We sell the world-renowned **EMPIRE CREAM SEPARATOR.**

**Blue Valley Creamery Co., ST. JOSEPH, MO.**

complacency upon a slight reduction of their numbers in view of an increase of 72 per cent in their aggregate annual income over ten years ago and in view of individual incomes averaging \$2,000 per farmer.

Improved methods, the introduction of crops adapted to Kansas conditions, and advance in prices of food staples, account for the showing.

These conditions and this generous income are the sources of the bank accounts carried by farmers and of the more recent demand for municipal and other securities from this class of Kansas investors.

Continuance of these conditions, continuance of improvements in crops and in methods, continued accentuation of the demand for staple food-products as the bread-and-meat-eaters crowd upon the productive capacity of food-yielding areas, can but inure to the benefit of the owners and tillers of the fertile farms of Kansas, enhancing their incomes and improving the conditions of life for the farmer and his family and making him a more potent, if not a more numerous factor, in the financial and other social affairs of our community.

The eye of the Coronado expedition was set only for gold and plunder and little appreciated the productive power through which it passed. The wealth-producing potentiality marched over by the explorer of one hundred years ago was but partially understood. The first permanent white settlers of this territory, about half a century ago, knew nothing of its mineral resources and but imperfectly recognized its agricultural worth. Even the last ten years have witnessed over 70 per cent advance in the ability of the farmer to secure returns from the soil.

The role of the prophet is easy, but it is fraught with danger to his reputation for sanity. But concrete study for the improvement of agriculture is commencing to show its effects. The trained men of our schools, and the effects of experimental research into the problems of production are at their beginnings. I am not venturing a prophecy touching the income of Kansas farmers during the next ten years. It is enough to say that there is no reason apparent for expecting it to fall below the mark already attained, and that he is a rank pessimist who, in view of the facts, ventures to place the limit of the advancement of the next

ten years at a lower figure than the 72 per cent advance made during the ten years just passed.

**DESIRABLE CLUBBING OFFERS.**

Every owner of live stock should have at hand a convenient authority by which to diagnose the various ailments to which animals are subject. Dr. Mayo's book entitled "The Care of Animals," is so plain in its descriptions and so modern and so sensible in its directions as to enable the stockman to do the right thing promptly, or to determine whether the case is one requiring professional skill. This book is just such as has long been needed by the owner of animals. The retail selling price of "The Care of Animals" is \$1.25. By a special arrangement with the publishers, the KANSAS FARMER is able to offer the following advantageous clubbing proposition:

One subscription for Kansas Farmer, or one "Block of Two".....\$1.00  
One "Care of Animals," by mail..... 1.25  
Total.....\$2.25  
Club-rate for the above..... 1.90

Another book of great interest to farmers and those who contemplate becoming farmers, and to all others who like to keep up with modern methods of high-grade farming, is "The Fat of the Land." This new book is having an immense sale. With it the KANSAS FARMER is able to offer the following clubbing proposition:

One subscription for Kansas Farmer, or one "Block of Two".....\$1.00  
One "Fat of the Land," by mail..... 1.50  
Total.....\$2.50  
Club-rate for these..... 2.25

**A Personal Request.**

We want every reader of this paper who does hauling of any kind to send to the Electric Wheel Co., at Quincy, Ill., for their new booklet, "Wheel Sense."

We know that a good many farmers think they have not many spare moments at this time of the year, to indulge in reading, but this is a booklet which will not take many minutes to run through and it's so full of good, sound sense, on the hauling question, that you ought not overlook it.

Of course, it tells about the Electric Metal Wheels and the Electric Handy Wagons—wide-tired, convenient, and labor-saving. It is at this time of the year when users of wagons equipped with Electric Wheels, find them of greatest service in hauling manure, hay, in harvesting and for the thousand and one jobs about the farm for which a wagon is required. We can not understand why so many men continue to load high wagons, cut up their fields, overwork their horses, when an investment of a few dollars for a set of Electric Wheels, would avoid so much hard work. Send for the booklet and see what hundreds of wide-awake farmers have discovered.

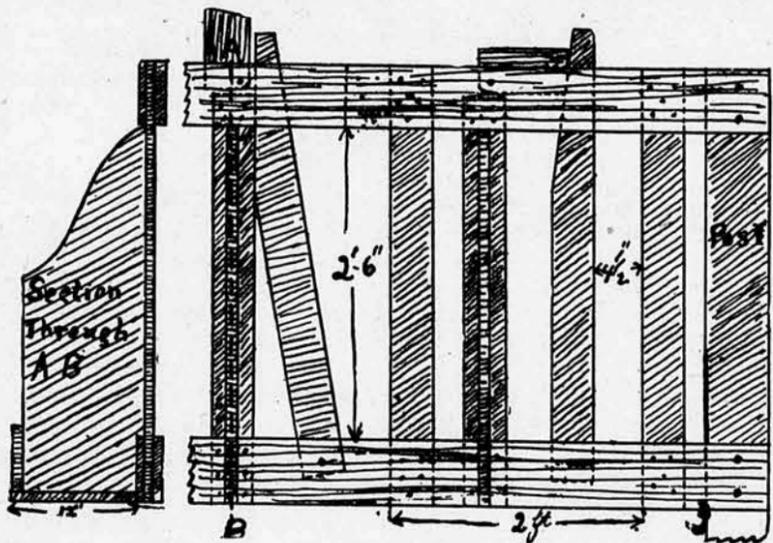
**PILES NO MONEY TILL CURED. 25 YEARS ESTABLISHED.**  
We send FREE and postpaid a 200 page treatise on Piles, Fistula and Diseases of the Rectum; also 100 page illus. treatise on Diseases of Women. Of the thousands cured by our mild method, none paid a cent till cured—we furnish their names on application.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

## In the Dairy

### Baby Beef.

I would like a good plan for making stanchions for feeding milk and shelled corn to calves, as I want to produce "baby beef." Can you give me the best and cheapest method of producing baby beef?  
Cowley County. A SUBSCRIBER.

We have a calf-stanchion in use at this station which was recently planned and constructed which we think is a very satisfactory method of confining calves for feeding. Our shed is 16 feet wide and closed at both ends, the north and south side having movable panels, enabling us to close the shed in winter and open it in summer. There is an alleyway 5 feet wide in front of the stanchion to enable the feeder to go in with a cart and have plenty of room to move about. The following sketch will give the general



dimensions and plan of the stanchion. The required lumber for ten stanchions is as follows:

One 1 by 12 in. by 12 ft. for bottom of feed-box.

Two 1 by 12 in. by 16 ft.—8 ft. for bottom of feed-box and the remaining 24 ft. for upright partitions.

Two 1 by 6 in. by 10 ft. long for front of feed-box.

Five 1 by 6 in. by 16 ft. cypress or full thickness pine for top and bottom rails.

Five 1 by 4 in. by 12 ft. full thickness for fixed uprights.

Two 1 by 4 in. by 16 ft. 3/4 in. thick for swinging uprights.

Ten pieces 3 in. by 6 in. by 3/4 in. for tongues or locks.

Three posts, 6 ft. in length.

The feed-box runs the full length of the stanchion and is divided into sections of 2 feet in length to each calf. The drawing marked "section through AB" gives the plan of this partition. The board along the front of the feed-boxes is in two 10-ft. sections and is hinged so it will turn down, thus allowing the boxes to be easily cleaned. Of course it will be necessary to have a rack for hay in connection.

I would advise your subscriber to

procure the bulletins from the Kansas Experiment Station on "skim-milk calves" and "baby beef." Feeders as a rule find that the average skim-milk calf does not make profitable gains in the feed-lot, and do not buy him. This need not be so if the farmer use the proper care and methods. In the feeding of the skim-milk calf, the calf should have his mother's milk for the first few days, then may be fed whole-milk from the herd for ten days or two weeks, gradually changing to skim-milk, always feeding milk at blood-heat. Do not feed the skim-milk in too large quantities; extra quantity can not make up for the deficiency in fat; in fact, many of the troubles in feeding calves come from overfeeding on milk. All utensils must be kept scrupulously clean, and the calves must be induced to eat corn at the earliest possible opportunity; this they will usually do at two weeks old. Calves destined for "baby beef" should be given all the corn they will consume, there being nothing better than shelled corn fed in connection with ground Kafir-corn, if that is available. They should also be supplied with bright prairie

hay in the start and later, alfalfa may be given. With proper treatment the calf at weaning-time will be in good condition to put into the feed-lot. There is nothing that will quite equal alfalfa hay and corn for the production of "baby beef."

Clover hay may be fed in the place of alfalfa. If neither one of these valuable hays is available, of course the problem of producing "baby beef" will be more difficult. It requires somewhat more painstaking care and watchfulness to feed for "baby beef," but the man who would successfully produce it must be prepared to give these extra attentions. Care and kindness do not cost money but come from thoughtfulness and love of animals, and they will pay from the financial standpoint.  
G. C. WHEELER,  
Kansas Experiment Station.

### Value of Varieties of Kafir-Corn.

EDITOR KANSAS FARMER:—Mr. Peter Lologe, of Cedar Point, Kans., writes for information as to the comparative feeding value of red and black-hulled white Kafir-corn for hogs and milch-cows. As far as any experimental work at this station has shown, there is comparatively little difference in their feeding value. Both varieties were raised at this station for a number of years. The black-hulled white gave a better yield, per acre, and for the last few years the red has not been raised. It has been fed to all classes of stock with very satisfactory results. Hogs are apt to tire of it more quickly than the Indian corn, so a little more care has to be exercised in feeding it. It is well to feed it as part of the ration only. Some feeders have alternated the two varieties, the red and the white, with hogs, claiming that the hogs seem to relish the change and are not so apt to tire of the feed. For milch-cows it will take the place of corn in the ration but will require somewhat larger quantities to produce the same results. It should be ground for cows in all cases as the small seeds will not be sufficiently masticated, and therefore more or less wasted.  
G. C. WHEELER,  
Kansas Experiment Station.

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**Skim-Milk Questions.**

Hoard's Dairyman asks information on the following nineteen points:

1. The average or medium value of skim-milk as a food for calves; for pigs; for poultry; for cows.
2. What is the best method of treating creamery skim-milk so it shall reach the patron at its highest feeding value?
3. What devices or improvements in conditions and environments can we throw about young animals, that will give skim-milk greater feeding value?
4. What other feeds shall we use with skim-milk to enhance its value?
5. Is skim-milk, at its best estate, fed warm or cold; sweet or sour?
6. What are the best methods of feeding and handling young calves in order that we may get the most out of the skim-milk?
7. How should pigs be handled in order that we may secure best returns from skim-milk? At what age should the pig be weaned and placed largely on a skim-milk diet?
8. How should poultry be handled, and how should skim-milk be treated and fed in order that we may get the largest results?
9. How much more is farm separator skim-milk worth, fed fresh and sweet, than the average creamery product as the farmer receives it?
10. What effect will the constant sending away of skim-milk from the farm have on the fertility of the land?
11. How much do you estimate is the value of 4,000 pounds of skim-milk as a fertilizer?
12. What is the financial condition of dairy communities in the United States, or Canada, when the skim-milk is consumed on the farm, as compared with these communities where it has been sent away for a series of years?
13. What effect does dirt have in skim-milk towards lowering its feeding value?
14. Does pasteurization decrease the digestive value of skim-milk?
15. What is the difference, if any, in the feeding value of skim-milk from milk high or low in butter-fat?
16. What is the value of skim-milk per hundred pounds as compared to other feeds, as follows: Oats, bran, gluten feed, oil-meal, cornmeal, pasture-grass, alfalfa hay, red clover hay, timothy hay?
17. How should the creamery patron handle and care for his skim-milk, to secure the best results?
18. What other foods are best to use with skim-milk to produce the most favorable growth in calves, pigs, and poultry?
19. What should the creamery do to turn over to the patron the skim-milk at its best feeding value?

A Canadian dairyman makes the following answers to these inquiries:

1. The average value of skim-milk as food for calves, pigs, or poultry I consider to be about 24 cents per hundredweight. Of course this varies with the cost of other feeds, but taking cornmeal as a standard, I would not exchange a hundredweight of skim-milk for 20 pounds best meal, though I would want the meal in all cases to mix with the milk. Cornmeal usually costs more than one cent per pound with me, but taking mixed meal of the ordinary grown farm grains, I consider a hundredweight of the skim-milk worth 24 pounds mixed meal. This mixed meal being worth an average of one cent a pound gives skim-milk a value of 24 cents per hundredweight. Of course, in some cases it is worth more than this. For young pigs after weaning, and up to the age of 3 months, I believe skim-milk is worth more than 24 cents per hundredweight fed to animals of this class. It may be worth 40 cents. Also for young calves up to the age of 1 month the skim-milk is certainly worth more than 24 cents per hundredweight. Two hundredweight of separator skim-milk, agriculturist at the National Experiment Farm, Ottawa, Canada, said in my own hearing, and also frequently published, that he got 40 cents for the skim-milk fed to young and growing pigs in certain individual cases. I believe him. As to its value for poultry, I have had no ex-

perience. My next neighbor, however, feeds nothing but skim-milk to her hens during the summer and gets fairly good results. She allows it to lather and thicken, and a dish of milk is constantly before her hens. No grain is fed during the open season, nothing but skim-milk, all the hens will drink.

2. The best way, in my opinion, of treating skim-milk at the creamery is a rigid system of eternal cleanliness at the creamery, returning the milk to the patron as soon as possible and feeding it on the farm without any unnecessary delay, keeping all dishes or vessels in which milk is handled scrupulously clean.

3. The greatest feeding value of skim-milk is always found in feeding it to young animals. Milk is the natural food of the young animal in its early stages, and it is a most difficult proposition to make young animals thrive without milk. To make the best out of the skim-milk it should never be fed alone. Some substitute for the fat abstracted must be provided.

4. To use with skim-milk there are two feeds which stand above all the rest. These are flaxseed and cornmeal. Probably the former is the better, but the latter is not to be despised. Both flaxseed and sound, finely ground cornmeal supply the place of the butter-fat extracted, in a very great degree. Both should be used alike, that is, scalded with boiling water before mixing with the skim-milk. Since flaxseed is so hard to procure in late years, we now use cornmeal for both calves and pigs almost exclusively, and are quite pleased with the results.

5. Skim-milk should be always fed rather warm even in the summer, and in winter it is much more important to feed warm. In summer it may be fed at the temperature of the air, but in winter I like to feed it at natural milk heat. For calves, it certainly should be fed sweet, but for pigs I think it is immaterial. If wanting to feed skim-milk to calves, and the milk came into our hands sour, we would heat it to about 160° F. before feeding it to calves.

6. In feeding young calves, there is no need of heating the milk directly. Scald the cornmeal for each feed and dilute with some more water than may be necessary, and put the hot cornmeal gruel (or flaxseed gruel as the case may be) into the cooler milk. The temperature of the milk will then be right for calf-feeding. After the milk is drunk, a little whole oats should be given immediately in the calf's manger. Calves should have individual feeding stalls, and not be fed indiscriminately, or several together. Of course, they may be allowed together after feeding.

7. With pigs, they should begin to drink skim-milk when about 4 weeks old, and while yet suckling the dam. At this age they become quite a drain upon the sow. A small trough in an adjoining compartment may be provided for feeding the litter, or they may just as well be fed, when the sow is let out to exercise round, in the pen which they occupy. I think scalded shorts or middlings the best to mix at first with skim-milk for little pigs. This shorts gruel is made in the same way as for young calves. The milk should be warm of course. Sometimes the young pigs, or some of them, will refuse to drink the milk. In that case, I catch those fellows and dip their heads down to the eyes, in the warm milk. In this way they get a taste of it by licking it from around their noses and it is not long before all are drinking freely of the sweet warm milk.

Usually, some of the youngsters will be tardy in coming to the trough, but these must be watched and attended and made to learn to drink milk. At 4 weeks of age, once a day may be often enough to offer milk at first. At 5 weeks milk is given twice a day, and at 6 to 7 weeks the milk and gruel is given three times a day. Pigs thus fed become strong and grow, and notwithstanding their receiving extra feed, become a great drain on the sow. For this reason we usually keep the sow from the pigs at night when they reach the age of 7 weeks.

8. In the morning the sow is let in to

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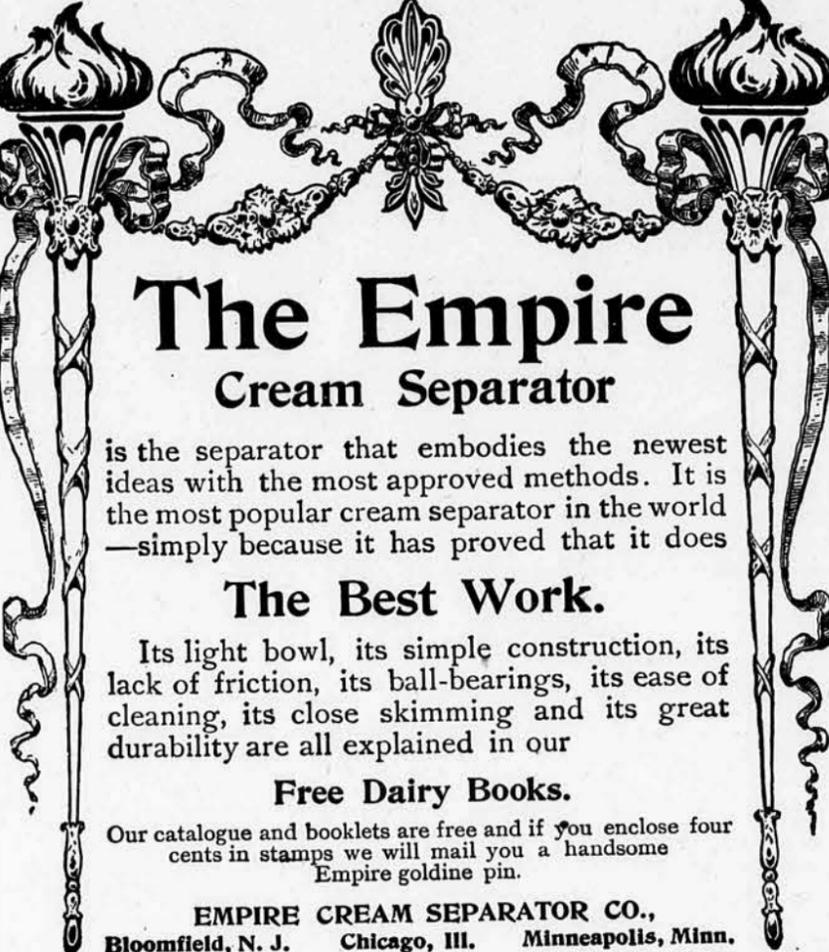
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nurse, and after a while turned out again, and by an by, in an hour or two, a feed of skim-milk and shorts gruel is given. At 8 weeks of age the sow is kept from the pigs entirely, and the pigs made to subsist on skim-milk and shorts with a little cornmeal, and fed four times a day. By this rational method of weaning, the pig and sow practically wean themselves, and there is no trouble or backset. After weaning entirely at 8 weeks, skim-milk and shorts should be fed, with a little cornmeal, until the pigs are at least 3 months old. Up to this age, a pig does not make much of grass or green stuff, and I think it impossible to wean pigs at 8 weeks and make them thrive without an abundance of skim-milk. If there is no milk, the pigs can not be weaned so early. They must be carried on the sow for at least ten weeks, or they will surely become stunted.

9. I am sure fresh and warm farm-separated skim-milk is worth one-third more for feeding to young animals, than the average creamery product as the farmer receives it. I believe the farm separator is going to win, and buttermakers and others must submit to the inevitable, and instead of crying against the farm separator, plan to adapt themselves to the new conditions. More intelligent buttermakers will be necessary, men who can be able to visit the farms and see the conditions under which separation is taking place, and be able to politely and tactfully instruct the farmer on separator management and care of the cream, but as important is the ability to test farm separator cream properly and fairly.

There are not a few makers whose tests are a mere matter of form and simple guesswork—cunning fellows who are deceiving the patrons to cover their incompetency. It is a matter of no little concern that a man is engaged as maker in a factory who has no license or diploma or guaranty of ability to manipulate the Babcock test and apportion dividends.

10. The constant sending away of skim-milk from the farm is its own indictment. The results are patent to any close observer. It is a matter of fact that cheese districts, in which all the fertilizing constituents of the milk are sent away from the farm, that the farm does not improve in fertility. Districts where the cheese factory runs five or six months in the year, and where no buttermaking is carried on, are not progressing, but, on the other hand, are retrograding. By constant pasturing, the farms are becoming poorer, and as the cheese factory closes in the fall, no effort is made to make milk during the winter, so that the cows get but indifferent care and feeding during the winter. Few calves are reared, and the pork market is not glutted. And is it a wonder that these farms become poorer and poorer when it is considered that some twenty dollars' worth of fertility is carried off the farm in every ton of cheese, and if the whey itself was made the best use of—many patrons will not take the whey home at all, claiming that it is of no value, and those who do, get little value of it because they do not feed meal with it. And if meal is fed with the whey to their hogs, so little is fed that results are not encouraging. Whey is a splendid hog-food, but requires about twice as much meal to feed with it in order to get gratifying results. Making cheese in the summer from about June 1, and butter the remainder of the year is all right, and probably the best way to get the most out of the cows under present market conditions.

11. In a ton of milk there is nitrogen, 10.2 pounds; phosphoric acid, 3.4 pounds, potash, 3 pounds. At usual values for these fertilizers a ton of milk is worth \$2, and 4,000 pounds is worth \$4 or 10 cents per hundred-weight to scatter on the land. In the various cow-censuses taken by the Dairyman it is a matter of surprise to the writer what little value patrons place on skim-milk.

12. What has been said of dairy conditions and farm fertility and progress in cheese districts, where the skim-milk is sent away from the farm every day, the very opposite is observable in creamery districts. It is from the creamery districts that the packing

companies draw the largest number of good bacon hogs. These districts are able to make dollar for dollar from pigs and cows. That is, for every dollar received for milk, they are able to get another dollar from hogs. This enlarged receipt—this doubling of the income—is only possible where the skim-milk is used at home on the farm. Creamery districts are away ahead of cheese districts in progress, in value of dairy and pig stock, in value of land, and in general prosperity.

13. Dirt has certainly a deleterious effect upon the feeding value of skim-milk by the growth of injurious bacteria, and very dirty milk should be a prohibited food to young calves, or very young pigs. Contaminated milk would need to be heated before feeding to these animals, if at all.

14. Pasteurization decreases the digestive value of skim-milk by the cooking of the casein and crystallizing of the sugar. I do not favor the pasteurizing of the skim-milk at the factory at all. I advocate, instead, cleanliness and despatch in getting the milk back to the farm in the quickest possible time.

15. I do not know that there is very much difference between the feeding value of poor versus rich milk. The difference, if any, should be in favor of the rich milk, as the milk solids are usually in a degree proportionate to the percentage of butter-fat in the whole milk. The more fat the more of other solids-not-fat.

16. Of the farm-grown feeds, not by-products, corn has the greatest feeding value, and is also one of the best feeds to mix with skim-milk. What the milk lacks the corn supplies, and what the corn lacks in protein, the skim-milk supplies. It is hard to assign values, but assuming that 100 pounds of skim-milk is the equivalent of 22½ pounds of corn, we have good data for assuming:

Worth per ton.		Worth per 100 lbs.	
Cornmeal.....	\$25	Skim-milk.....	28c
Cornmeal.....	20	Skim-milk.....	22½c
Oats.....	20	Skim-milk.....	25c
Barley.....	20	Skim-milk.....	23½c
Bran.....	20	Skim-milk.....	27½c

These are relative values and are, I believe, quite near correct. Of course, much depends upon the quantities fed at one time. The less milk fed to an animal at a feeding the greater its value. To get the highest value from skim-milk in hog-feeding, not more than 5 to 8 pounds should be fed to a single animal per day, and calves, too, are usually fed too much milk and not enough of grain or meal.

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# The Poultry Yard

CONDUCTED BY THOMAS OWEN.

## Blue Andalusians.

EDITOR KANSAS FARMER:—Will you, or some reader of your paper, please give me some information regarding Blue Andalusians? Do you know of a reliable breeder in our State? What is their standard weight, and are there any rose-combs? I have had a few (not pure) that I liked very much, and want to know more of them. I only find one or two breeders' cards in the poultry papers and they are so far away.

I am a breeder of Barred Plymouth Rocks and of course a great friend to them. I have been very much interested, instructed, also amused with the letters from our friends. I think my birds would compare favorably with a good many, but I have not the figures at hand just now. Any information regarding the destruction of lice or mites will be gratefully received.

I always turn to the poultry page, and read it through first. But I think our KANSAS FARMER is a paper every farmer should take and read.

Mrs. A. ANDREWS.

Douglas County.

Answer.—Blue Andalusians belong to the Mediterranean class of fowls, and have the general traits of that class—great egg-layers and non-sitters. They came from a warm country originally, viz., Andalusia in Southern Europe, and are spring and summer layers. There is no weight clause in the Standard for Blue Andalusians, but they are nearly as large as the Minorcas, whose weights ought to be: Cock, 8 pounds; hen, 6½ pounds; cockerel, 6½ pounds; pullet, 5½ pounds.

They have a single comb; any other kind would be a disqualification. As their name indicates, they are blue in color, with slaty-blue legs and toes. J. D. Martin, Salina, Kans., is a prominent breeder of this variety of fowls.

For lice on fowls, a good insect-powder dusted freely among their feathers is a good remedy. As a preventive of lice it would be well to paint the roosts, nest-boxes, and crevices of the poultry-house once a week with liquid lice-killer. Advertisers of these remedies can be found in the columns of the KANSAS FARMER.

## Conveniences in the Hen-House.

Feed-boxes are best hung to the ceiling or placed on a shelf to avoid soiling by the fowls. A trough covered with a framework of lath placed on a shelf will avoid the waste of food which goes on when a hen can enter the trough and scratch out most of the contents in an effort to get the choicest scrap.

A low shelf with a row of spike nails on which to stick mangels, onions, or other vegetables is the best way to feed roots in all but freezing weather.

Galvanized-iron water-vessels are the best; they should be placed on a shelf between the partitions in a double house. One large-sized vessel will furnish water for two pens when so placed.

Every poultry-house should have a covered box for droppings. Poultry manure is one of the most valuable and neglected fertilizers. It is especially good for strawberry-beds.

On a shelf out of reach of the fowls keep a box of lice-powder, a bottle with spraying solution, box of vaseline, of carbolic lard, and a ball of string. The bottle should be fitted with a notched cork to allow the fluid to escape. A few whirls of the bottle over roosts and about walls and floors will keep the house smelling sweet and destroy germs. Crude carbolic acid is one of the best germ-destroyers. It should be used with a spray, and one ounce added to each gallon of white-wash.

An infertile egg after being in the incubator five days will appear as transparent as a fresh egg, but with a larger air cell. A dark ring of blood indicates a dead germ, and the egg should be removed. Many eggs are

cooked at the first test by being held too long before the tester. A small spot apparently stuck against the shell is also a sign of a dead germ. Such eggs have been but slightly fertilized. The seemingly strongest germs before the egg-tester should be marked, and the thermometer placed on such eggs if not hung up. At the first test the germs look like a big spider; later they look more like a horseshoe.

Do not hurry chicks to eat. Wheat bread-crumbs will be found one of the best diets the first week; after that we would advise baking "Johnny cake," crumbling it fine, feeding it dry and giving plenty of sand and good water.—Poultry Life.

## Poultry Notes.

This wet weather is very trying on young chicks, and it should be the aim of the breeder to try and counteract the dampness as much as possible by providing good, warm, and dry quarters for them at night. If possible, they should be kept under cover till the ground gets dry, but keep them busy scratching while they are penned up.

If you find the young chicks drooping and dying for no apparent reason, look them over carefully for head-lice. These pests often dig down deep into the heads of the frail chicks before one is aware of the trouble and cause the death of many a youngster. The remedy is to anoint the head with vaseline or grease of some kind; also put a little under each wing. A couple of drops of carbolic acid to a tablespoonful of grease makes the remedy more efficacious. This should be attended to at least once every two weeks and oftener if necessary.

We can not be too persistent in urging you to keep the chicks a-growing. Don't stint them in any kind of feed that is necessary for their development. Remember that a stunted chick never amounts to anything and is better out of the world at an early age than allowed to struggle along a miserable existence for several months and then die. Keep them busy scratching and growing right from the start till they are fully matured. You will then have full-weight chickens, and hardy chickens, and chickens that will commence to lay in the fall and keep it up all winter.

## Airing the Eggs.

Results have taught us that airing the eggs during their incubation makes them hatch better. The plan is advised by all experienced incubator operators; but very seldom do we see the reasons explained. The answer, or why, is very much like the small boy's "because."

Let us reason it out a little. Let us assume that the chick in the shell is a live thing, needs exercise, a change of condition, a wakening up, to make it move, expand and develop its own strength. It does not take a great deal of imagination to take these things for granted. We see the sound logic verified in other things than eggs. It is, after all, the natural things tending to develop nature.

The exercising and developing the chick's strength is not all there is to it. This same airing has its influence on the shell; it ripens it. There are, perhaps, things that do not expand or contract with heat or cold, but they are not egg-shells. By carefully conducted experiments, I find that eggs perceptibly expand under a temperature of 103° and again at 60°. The difference is easily detected with an ordinary machinist's calipers.

These airings, or in other words, these contractions and expansions, serve to break down the shell's fibers, have a tendency to weaken the stiffness, to make the shell brittle, etc., hence, when the chick is due to hatch, it can break through and separate the shell without exhausting its feeble efforts.

While speaking of airing the eggs, I will mention a very foolish, yet quite a popular idea, that the eggs should be cooled down just so much by the thermometer lying on the eggs. Place no dependence on the theory. The real facts are, the thermometer adjusts itself to the temperature of the room more than it does to the egg. The

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### LEGHORNS.

We keep only pure Single Comb Brown Leghorns, which have free range. We introduce entire new blood every season and use the Canfield egg case for shipping which is absolutely safe. We sell at a moderate price, the same to all, 30 for \$1; 100 for \$3. Prompt shipment. F. P. Flower, Wakefield, Kans.

NEOSHO POULTRY YARDS, Established 1882. Breeder of Rose Comb R. I. Reds and Buff Aringtons, scoring from 91¼ to 94½ points, by Atherton. Eggs the balance of the season, \$1 per 15. Stock for sale after July 1. J. W. Swartz, Americus, Kans.

BLUE BARRED PLYMOUTH ROCK EGGS; 2 pens fine birds; \$1 per 15. Mrs. J. C. Leach, Carbondale, Kans.

INDIAN RUNNER DUCKS and White Wyandottes—Prize-winning stock; bred for utility; 16 eggs, \$1.50. Will exchange for turkey eggs. L. D. Arnold, Salina, Kans.

PLEASANT VIEW POULTRY FARM—White Wyandotte eggs for sale, 5 cents each. S. Bailey & Wife, Route 3, Independence, Kans.

S. C. BROWN LEGHORNS, exclusively. Eggs for sale from healthy, free-range stock. Satisfaction guaranteed. J. A. Kaufman, Abilene, Kans.

EGGS—From pure-bred large, clear plumage B. P. Rocks, \$1.50 per 15; \$4 per 50; \$7 per 100. Correspondence solicited. Mrs. Ada L. Ainsworth, Eureka, Kas

B. P. ROCK EGGS—\$1.50 per 15; \$5 per 100; free range. Colle pups. W. B. Williams, Stella, Neb.

C. C. W. Leghorns, eggs 50 cents per setting, \$3 per 100. Martha Cook, Russell, Kans.

WHITE WYANDOTTE EGGS—For sittings, 15 for \$1. Walter A. Smith, 109 East Tenth St., Topeka, Kans.

BARRED PLYMOUTH ROCK EGGS—30 for \$1.40 Satisfaction guaranteed. Ethel J. Williams, Route 2, Williamsburg, Kans.

EGGS! EGGS!!—Toulouse geese eggs, \$1 per sitting. Rouen and Pekin duck eggs, 18 for \$1. Muscovy duck eggs, 10 for \$1. White Holland turkey eggs, 10 for \$2. Houdans, Buff Cochins, S. S. Hamburgs, Games, Barred Rocks, Buff, Brown and White Leghorns, White, Buff and Silver Laced Wyandottes, Pearl guineas, Golden Seabright bantams. Poultry eggs 15 for \$1. Also all kinds of fancy pigeons reasonable. Satisfaction guaranteed. Write D. L. Bruen, Oldenbusch, Neb.

BLACK MINORCAS—Biggest layers of biggest eggs. Fertile eggs, \$1.50 per 15; \$3 per 50; \$5 per 100. Also Light Brahmans, Black Langshans, Barred and Buff Plymouth Rocks, White, Silver and Golden Wyandottes, S. C. Rhode Island Reds, S. C. White and Brown Leghorns, American Dominiques, Houdans, White Crested Black Polish, Buff Laced Polish, Buff Cochins Bantams. Eggs from choice matings of above \$1.50 per 15. James C. Jones, Leavenworth, Kans.

thermometer is misleading. In getting at the question in a logical way: If the eggs are plenty warm and the room comfortable they can be aired in thirty minutes; while if both the eggs and the room are cool the airing should be delayed until the eggs are plenty warm, and perhaps five minutes would be long enough.

Airing eggs during incubation should be governed by considerable judgment. I would not advise much airing the first week of incubation, a little more the second week, and still more the third week. This plan is tempering the work in accordance with the growth of the chick and the needs of the situation, and I believe it copies strongly the natural doings of the sitting-hen. Anyhow, it leads to success in the artificial method.

M. M. JOHNSON.

## Poultry as Insect-Destroyers.

There is one advantage of keeping poultry on the farm that is generally overlooked, and that is the vast number of insects destroyed by them.

If every insect destroyed by a hen in a day were counted, and an estimate made of the number of insects eaten by a flock of twenty-five hens, it would show that hens are more useful in that respect than may be supposed.

When busily at work scratching, the hens secure many grubs and worms, while the larvae of insects also assist in providing them with food.

A flock of turkeys will scratch every nook and corner of a field for insects, and as a turkey can consume a large amount of food, it will make away with a vast number of them each day.

The active guinea is ever on the search over the fields for insects. It does not scratch, but every blade of grass is locked over, and it rarely comes up to the barnyard to seek food. Its industry prompts it to secure its own food, and in so doing hundreds of insects are destroyed.

The ravenous duck, whose appetite seems never satisfied, will attempt to seek enough in the fields, and it captures not only insects, but the field-mouse and small reptiles, which will be eaten if other food is not plentiful. But if insects abound ducks will be content with eating them in preference to anything else.—Farm and Poultry Review.

FOR SALE—Eggs from Rose Comb Brown Leghorns, Silver Spangled Hamburgs, Barred Plymouth Rocks, White-faced Black Spanish, and Black Langshans. Write your wants. Charles W. Gresham, Bucklin, Kans.

RHODE ISLAND REDS—Original stock from the east, the best general purpose fowl on earth. Eggs \$1.50 per 15; \$2 per 30. Mrs. G. F. Kellerman, Vine-wood Farm, Mound City, Kans.

BARRED ROCKS exclusively. Thompson, Leffel and Skinner strains; after May 15, eggs 75 cents per 15; \$4 per 100. Order at once. Mrs. Chas. Osborn, Eureka, Kans.

MOTTLED ANCONAS—The great egg producers. Eggs \$1 per 15. Adaline Gosler, Matfield Green, Kas.

BARRED PLYMOUTH ROCK eggs exclusively, 15 for \$1.25, 50 for \$3, 100 for \$5, 200 for \$8; I can ship via Adams, American or Wells-Fargo Express. Adam A. Weir, Clay Center, Neb., Route 2.

WHITE HOLLAND GOBBLERS—From first prize stock, \$4 each. E. W. Melville, Eudora, Kans.

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

BARRED Plymouth Rock Eggs—B. P. Rocks exclusively; won first premium on B. P. Rock capons, Kansas State Fair, 1903. Eggs \$1 per 15, \$5 per 100. S. H. Dunahugh, Route 1, Hoyt, Kans.

PURE WHITE WYANDOTTES for sale. Eggs for sale in season. \$1 for 15. Darby Fruit Co., Amoret, Mo.

FOR SALE—Full line of Cyphers Incubators, brooders, feeds and remedies; also Higginville bee supplies. Write for catalogues. Topeka Supply House, 634 Quincy St., Topeka, Kans.

## Silver Wyandottes Exclusively

First prize pen scoring 92 to 93½. Eggs, 15 for \$2. Pure-bred Silvers, farm range, many of them prize-winners; 100 eggs \$4. MRS. J. W. GAUSE, Emporia, Kans.

MRS. GEO. L. BARBER, Saffordville, Kans., Will furnish Barred P. R. eggs from 94-point birds 15 for \$1.50.

## BLACK LANGSHAN EGGS

Eggs from large, healthy stock, score 92 to 94, \$1.50 per 15. Cockerels for sale. P. C. MARCH, 1313 West Sixth St., Topeka, Kans.

## WHITE WYANDOTTES

White ones, pure bred, and good layers, Eggs \$1 and \$1.50 per sitting. ALVIN LONG, Lyons, Kansas.

## White Plymouth Rocks EXCLUSIVELY.

Three Grand Yards of the Best Strains in the Country

White Plymouth Rocks hold the record for egg laying over any other variety of fowls; eight pullets averaging 280 eggs each in one year. I have some breeding stock for sale at reasonable figures. Eggs in season, \$2.00 per 15, expressage prepaid anywhere in the United States. Yards at residence, adjoining Washburn College. Address

THOMAS OWEN, Topeka, Kansas.

## POULTRY SUPPLIES

- Thanelice (lice powder).....25c
- Cree-carbe (lice killer).....50c
- Egg Maker.....25c
- Poultry Cure.....25c
- Roop Pills.....25c
- Medicated Nest-eggs.....5c
- Genkey's Roop Cure.....50c
- Buckeye Cholera Cure.....25c

OWEN & COMPANY  
520 KANSAS AVE., TOPEKA, KANS.

## The Buff Plymouth Rocks At Gem Poultry Farm

Are Better Than Ever. At State Fair at Hutchinson 1903, I won in warm competition, 1st cock, 1st hen, 1st pullet, 1st pen 3d pen.

No Better Buffs Can Be Found.

Eggs from my two best pens, 15 for \$2; 30 for \$3.50. They are in the \$5 class. Mammoth Bronze turkey eggs, 11 for \$2. Stock all sold

C. W. PECKHAM,  
Haven, Kans.

## DUFF'S POULTRY

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

A. H. DUFF, Larned, Kans.

## MONEY IN EGGS

By keeping them until prices are high. Can keep eggs two years if necessary, absolutely the same as a fresh laid one. Send 2 cent stamp for circular telling HOW, also handsome ART FOLDER of the largest FANCY POULTRY FARM in this country. Address Dept. F. J. C. HEATH'S IMPERIAL POULTRY FARM, Valley Junction, Iowa.

# Grange Department

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

Conducted by E. W. Westgate, Manhattan, to whom all correspondence for this department should be addressed. Papers from Kansas Granges are especially solicited.

### National Grange.

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

### Kansas State Grange.

Master..... E. W. Westgate, Manhattan  
O'verseer..... J. C. Lovett, Bucyrus  
Lecturer..... Ole Hibner, Olathe  
Steward..... R. C. Post, Spring Hill  
Assistant Steward..... W. H. Coultis, Richland  
Chaplain..... Mrs. M. J. Ramage, Arkansas City  
Treasurer..... Wm. Henry, Olathe  
Secretary..... Geo. Black, Olathe  
Gate-keeper..... G. F. Kyner, Lone Elm  
Ceres..... Mrs. M. J. Allison, Lyndon  
Pomona..... Mrs. Ida E. Flier, Madison  
Flora..... Mrs. L. J. Lovett, Larned  
L. A. S..... Mrs. Lola Radcliff, Overbrook

### Executive Committee.

E. W. Westgate..... Manhattan  
Geo. Black..... Olathe  
J. T. Lincoln..... Madison  
A. P. Reardon..... McLouth  
Henry Rhoades..... Gardner

### State Organizer.

W. G. Obryhim..... Overbrook

### Children's Day.

No event in the Grange calendar is more generally observed or productive of better results than Children's Day. Several years ago the National Grange recommended that the third Saturday in June be observed as Children's Day, but suggested that any other day could be appropriately designated by State masters for observance in their respective States. It has been customary for the State masters to issue proclamations, officially designating the day, and calling upon the subordinate granges to appropriately observe it.

There is no established rule or custom for the exercises of Children's Day, but the central idea in such exercises should be the happiness of the children participating. All the children in the vicinity should be invited to the meeting, held either in a hall or grove, and entertained with feast, speech, and song. The fact should be constantly borne in mind that very soon the places now occupied by men and women will be occupied by the boys and girls of to-day, and much can be accomplished in encouraging them towards upright lives and in interesting them in the principles for which the Grange stands. It would be a grand impetus to Grange work if every subordinate grange in the country would enter into the observance of Children's Day with enthusiasm.

In accordance with the above suggestion of the worthy lecturer of the National Grange, I hereby designate the third Saturday in June as a day to be observed by the Patrons in Kansas as Children's Day.

The children of the country are by far the most important of its productions, and it is well to devote at least one day to their honor and pleasure. On the children the future of our order depends and we should show them the interest felt in their welfare. I hope the observance of the day will be general. If circumstances require, any other day may be substituted.

E. W. WESTGATE,  
Master Kansas State Grange.

### Excerpts from Executive Committee Report.

The executive committee of the National Grange met in Hotel Downey, Lansing, Mich., November 21, 1902, and organized. E. B. Norris, chairman; Aaron Jones, F. A. Dethick, subcommittee on loans; C. J. Bell, secretary.

The lecture work was left in charge and under the direction of Worthy Master Aaron Jones, and before all the committee had left the city the printing of the Journal of Proceedings of the thirty-sixth session of the National Grange was in possession of The Robert Smith Printing Co., of Lansing, Mich., under contract to print 6,000 copies for distribution.

The committee next met on the first day of January, 1903, in the city of Washington, called there by Worthy Master Aaron Jones, to pay our tribute of respect and fraternal admiration for our secretary, John Trimble, who died

on the Tuesday morning previous, at his home in the city.

January 3, at 10 a. m., he was quietly laid to rest under the auspices of the order he loved so well, assistant secretary of the Department of Agriculture, Bro. J. H. Brigham, master of Maryland State Grange, Joseph B. Ager, and your committee, being honorary pall-bearers.

Coming to the office of the late secretary, your committee found he had been unable to attend to his official duties, having visited his office only once since his return from Lansing in November.

All the work that could be performed had been attended to by his efficient assistant, Miss Kate Corridon.

The committee appointed as secretary Bro. C. M. Freeman, of Ohio, to fill the unexpired term of Bro. John Trimble, deceased.

In settlement \$1,085.54 was found in secretary's office on deposit, which was turned over to the secretary.

During the fiscal year requisitions have been drawn as follows:

For salaries of officers.....	\$2,500.00
Executive committee services and expenses.....	500.22
Supplies for secretary's office.....	2,023.54
Account of loan and reinvestment.....	9,200.00
Extension fund.....	4,086.66
Miscellaneous account.....	2,435.93
Contingent fund.....	385.00

Total amount requisitions drawn, \$22,730.35

At the last session of this body an appropriation of \$5,000 was made for extending the order, and was left by your committee in charge of and under the direction of the National master.

The work, on account of this appropriation, has gone into all the States.

The expenses of the National lecturer, including both his office expenses and printing, also the expenses of the National master, must be charged to every State to a greater or less degree, and all the order have been encouraged thereby.

Is it not about time the Grange became a factor in helping solve the great labor question? The mutual interests of producers, carriers, and consumers should be considered, and an equitable adjustment demanded. We note with apprehension the tendency of young people to leave the farms and go to the cities, leaving the heads of the families to cope with the difficult problem of securing labor at such prices as in most cases the price of farm products will not justify. The Grange carries the high ideals that labor is worthy of its hire, and in the pursuit of happiness.

Some writers have asserted that the farmer has progressed and prospered in every way equally with those engaged in other pursuits. This statement is not verified by the statistical records of the country. The markets of agricultural products will not show equal profits with the manufactures or in equity of price being paid for labor. This question is one the Grange can properly discuss, as it is one of a non-partisan character. Another serious question that confronts us as a Nation is the laxity of our emigration laws. Too many undesirable foreigners are admitted to citizenship before they are sufficiently educated to understand our form of government and the full meaning of the right of franchise. This is a proper question for the Grange to discuss. Cooperative trade is an essential factor in advancing the interests of the Grange. We would not advise radical changes, but enough must be done along this line to be of sufficient importance to induce manufacturers to make wholesale contracts with the proper representatives of the order, but in no case should the Grange be responsible, either National, State, or subordinate. The contract should be made as members of the order under a distinctive organization and on similar plans as are now controlled by our fire insurance company. In several of the States, this feature has proved very beneficial to the order and has saved many thousands of dollars to the pockets of the members.

The cornerstone was successfully laid in our declaration of purposes. To keep it from dangerous shoals is a matter of great importance that will take time and careful consideration. At our last session the National Grange placed itself on record as fa-

voring the establishment of the parcels-post system. We believed then this was a step in the right direction and we believe this is a proposition the Grange can consistently encourage. This country has the best facilities by steam and electricity for transportation in the world. Why should it not have the best and cheapest postal service? This year our order makes its greatest growth in a generation. Our finances are on a sound basis, and the outlook for the future exceedingly encouraging. Fraternaly submitted,

E. B. NORRIS,  
C. J. BELL,  
F. A. DERTHICK,  
AARON JONES,

Executive Committee National Grange.

### WEEKLY WEATHER CROP BULLETIN.

Weekly weather crop bulletin for the Kansas Weather Service, for the week ending May 23, 1904, prepared by T. B. Jennings, Station Director.

#### GENERAL CONDITIONS.

The week was cool, and generally wet the first part of the week, but drier and much warmer the latter part.

#### RESULTS.

##### EASTERN DIVISION.

Wheat is doing well; it is heading in the southern counties and is jointing north of the Kaw River. Corn-planting and cultivation stopped by wet weather the first part of the week, resumed the latter part; corn is coming up in all parts of the division, though irregularly in some counties. In Chase County it is getting weedy. Considerable corn has been replanted, and in Chautauqua County much of the replanted is up and doing well. Oats have improved this week, and in most counties are doing well, though in Chase County the crop is getting weedy. Grass has grown rapidly, and pastures are very good. Alfalfa is in fine condition and ready to cut but needs drier weather. Rye has headed in the north and is in bloom in the south part of the division. Flax is growing well in the central counties and has good color. New potatoes are being marketed in the southern counties. Apples are not setting uniformly well in Shawnee and some varieties are falling badly in Wyandotte and Johnson Counties. Strawberries are ripe in Bourbon County, are ripening in Greenwood, Wilson, and Woodson Counties and are beginning to ripen in Riley; Blackberries are blooming in Wilson and Woodson Counties.

Anderson County.—Corn-planting greatly delayed by wet ground; corn that is up has a poor stand; dry weather needed; flax, in southern part, growing well and of good color. Atchison.—Good growing weather latter part of week; ground still wet but corn-planting in progress; early planting coming up unevenly; some to replant.

Bourbon.—Replanted corn coming up nicely; wheat very promising for full crop; oats and grass growing finely; home-grown strawberries on market.

Brown.—Corn-planting about finished; some replanting done; wheat will soon be heading; rye headed; cherries falling badly; other fruit promise well.

Chase.—Too wet for corn, oats, and gardens; early corn getting weedy; oats very weedy.

Chautauqua.—Wheat heading and doing well; much corn has been cultivated the second time; much of the replant up and doing well; farmwork somewhat retarded by the rain; new potatoes on market; strawberries abundant.

Cherokee.—Ground generally too wet to cultivate; wheat and oats continue to look well; corn improving but generally not a good stand.

Coffey.—Good weather for farmwork and all growing crops the latter half of the week; fruit prospects continue good.

Doniphan.—Wheat looks fine in southeast portion and somewhat improved in north, where the crop will be light; corn-planting again in progress; some replanting to be done; oats doing well; pastures good; gardens two

# Don't Neglect Rheumatism

New Appliance for Drawing Acid Poisons from the System Through Pores of the Feet Sent to Anybody

FREE—ON APPROVAL—TRY IT!

Don't neglect rheumatism. The acid poisons accumulate day by day until joints become solidified in horribly distorted shapes and relief from the indescribable suffering is beyond the power of man to give.



Heed the warning pains of rheumatism and rid your system of the cause while you can by wearing Magic Foot Drafts. Don't take harmful medicine. The Drafts draw out the acid poisons through the great pores of the feet, where the capillary and nerve systems are most susceptible, reaching and curing rheumatism in every part of the body.



If you have rheumatism send your name to-day to the Magic Foot Draft Co., FF28 Oliver Bldg., Jackson, Mich. You will get by return mail a pair of the celebrated Magic Foot Drafts, which have made a record of curing nine out of ten cases in Jackson, where the discoverer lives, and have already become a household remedy all over the world. No other remedy ever cured so many cases considered incurable. That is why the makers can send them on approval. You risk nothing. If you are satisfied with the benefit received, send one dollar. If not, send nothing. A fine booklet in colors and many testimonials comes free with the Drafts. Write to-day.

Labette.—Wheat heading and in good condition; oats very promising; corn growing well and being well tended.

Linn.—Bottom land still too wet for corn-planting; wheat, oats, and grass growing rapidly; early wheat will soon be heading.

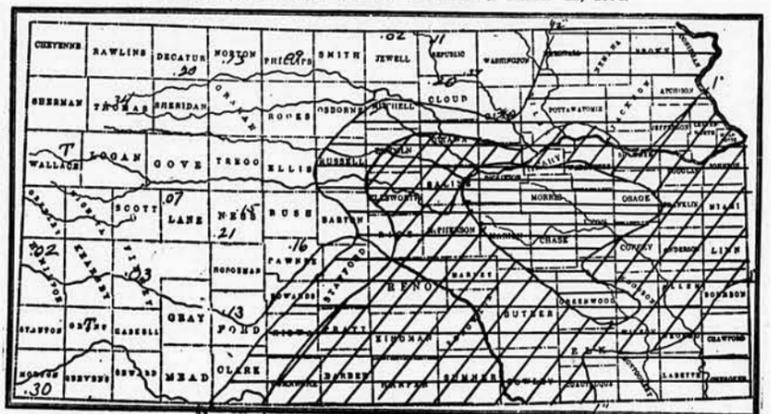
Lyon.—Corn about all planted; alfalfa making big growth.

Marshall.—Corn-planting nearly completed; early corn coming up with a good stand; small grains and pastures growing finely; cattle doing well; fruit prospects continue good.

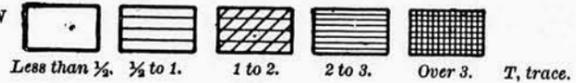
Montgomery.—Wheat headed out, with good color and long straw, but thin on the ground; corn is small but clean and generally a good stand; grass good; clover in bloom; alfalfa ready to cut.

Morris.—Farmwork at a standstill; wheat and rye look fine; oats growing very slowly; corn about all planted but in bad condition; al-

RAINFALL FOR WEEK ENDING MAY 21, 1904.



SCALE IN INCHES.



weeks late; good prospects for all kinds of fruit.

Douglas.—Wheat and grass doing finely; oats and flax look well; no corn planted this week; what has been planted is coming up irregularly in low ground.

Elk.—Still too wet to cultivate the crops; sunshine and dry weather needed.

Franklin.—Oats and grass growing rapidly; corn-planting greatly retarded by wet weather; blue-grass heading short; potatoes coming up unevenly.

Geary.—All crops doing well except corn, which is backward on account of cold weather; good prospects for fruit of all kinds.

Greenwood.—Farmwork at a standstill; much corn yet to plant; warm weather needed; strawberries ripening.

Jackson.—Corn about all planted except on wet ground; early corn coming up with a good stand; all crops doing well.

Jefferson.—Corn-planting now being rushed; early potatoes a poor stand; grass and all small grains growing nicely; fruit prospects very fine.

Johnson.—Too wet for farmwork; wheat, oats, and grass improving with more favorable weather; grapes promise well; apples falling badly.

alfalfa fine; fruit of all kinds promises a full crop.

Osage.—Corn-planting progressing; much replanting being done this week; wheat in good condition.

Pottawatomie.—Corn-planting nearly finished; wheat jointing; fruit promises a full crop.

Riley.—A fine week for all crops; corn about all planted; corn that is up doing well; early strawberries beginning to ripen.

Shawnee.—Corn-planting about finished except in northeast part, where there is much yet to plant; corn coming up unevenly; molds numerous in sandy land; wheat short but looks well; alfalfa doing finely; prospects for fruit generally good; apples not setting uniformly well; not many canker-worms.

Wilson.—Ground wet all week, but some corn cultivated; much corn is yellow; oats and pastures doing well; rye in bloom; wheat heading; alfalfa ready to cut; potatoes look well; strawberries ripening; blackberries in full bloom.

Woodson.—Wheat doing finely; unfavorable week for corn; considerable corn planted and cultivated latter part of week; alfalfa looking fine; early potatoes very fine; strawberries ripening; blackberries very full of bloom.

Wyandotte.—Corn-planting in progress!

wheat beginning to head; some varieties of apples falling badly.

MIDDLE DIVISION.

Wheat generally is in fine condition, though in Ottawa County wheat on bottom lands is too rank. Soft wheat is in bloom in Cowley County and heading in Clay. Hard wheat is heading in the southern counties and jointing in the Smoky Hill counties. Corn-planting is nearly completed; early planted corn is up and being cultivated in all parts of the division. Oats are growing well, though backward in some counties, and in Sedgwick are getting too rank. Rye is headed and doing well. Grass is growing well. Alfalfa is doing finely and generally is ready to cut. Gardens and potatoes are doing finely except in Pawnee County, where both were damaged by frost. Cherries are nearly ripe in Sumner County and apples promise well in Barton. Barber.—Good growing weather; alfalfa will soon be ready to cut; grass, barley, and oats growing well; all garden truck doing well. Barton.—Ground in fine condition; wheat heading and doing well; oats and barley backward; corn up, some being replanted; alfalfa about ready to cut; cattle on pasture and doing well; good prospects for apples. Butler.—A cold, wet week; crops backward but look well; the stand of corn is good; alfalfa looks well. Clay.—Corn all planted; early corn up and being cultivated; wheat and oats improving; wheat heading; alfalfa about ready to cut; potatoes and gardens doing well. Cloud.—Fine weather for wheat and oats, but too cool for corn. Cowley.—Corn a good stand but growing wheat heading; alfalfa about ready to cut; grass fine; corn-planting being rushed; all kinds of fruit making fine progress. Dickinson.—Winter wheat jointing; rye headed; oats very fine; corn-planting not finished; early corn being cultivated. Ellis.—Wheat growing rapidly and promises a big crop. Ellsworth.—All crops in fine condition. Harper.—Too wet for farmwork; corn weedy and growing slowly; oats improving; wheat all headed and looks well. Jewell.—Alfalfa, wheat, rye, and oats doing finely; corn nearly all planted and generally a good stand; prospects for a good peach crop. Kingman.—Wheat about to head; looks very promising; grass in good condition; corn somewhat backward. Lincoln.—Corn-planting retarded by wet weather; early corn up with a good stand except in wet ground; wheat and pastures good; oats poor. McPherson.—Wheat beginning to head; most ground too wet to work and getting weedy; fine prospects for very large wheat crop. Ottawa.—Wheat growing rank in low lands and beginning to lodge; early corn a good stand and ready to cultivate; alfalfa fine; oats improving; potatoes and gardens good. Pawnee.—Wheat on plowed land very good, some late wheat on stubble ground not so good; corn being cultivated; some damage to potatoes and gardens by frost. Phillips.—Corn all planted; the growth of early corn has been retarded by cool weather; wheat, oats, and alfalfa growing well; fruit in fine condition. Reno.—A fine growing week; wheat beginning to head. Republic.—Corn nearly all planted, coming up nicely, and cultivation begun; wheat, oats, and alfalfa doing finely; a good week for all crops. Saline.—A surplus of moisture; all growing crops doing well. Sedgwick.—Wheat, corn, rye, and oats growing finely, but oats rather too rank to fill well; alfalfa in bloom and very rank; corn getting weedy; ground too wet to cultivate. Stafford.—A good growing week, but rather cool for corn; wheat beginning to head and promises a good crop. Sumner.—Wheat headed out; too wet and getting weedy; pastures good; gardens growing well; cherries nearly ripe. Washington.—Wheat growing rapidly and looks well; oats fairly good but some are weedy; rye heading; alfalfa nearly ready to cut; corn about all planted; early corn a good stand and being cultivated; potatoes doing well; prospects for a good crop of fruit. WESTERN DIVISION. Wheat is making a good growth in some counties but in many counties it is not doing well and in some is being plowed up. Macaroni wheat is in fine condition in Sherman County. Oats are in good condition and growing well in Ford and Sheridan Counties but grow slowly in Wallace and are weedy in Ness Counties. Barley is growing well in Ford, Sheridan, and Thomas Counties but slowly in Wallace. Rye is heading in Norton County; corn-cultivation has begun in Thomas and Norton Counties. Grass is improving, being good in some counties, but just starting in the southwestern. Alfalfa is doing well, and in the southern counties is about ready to cut. Cattle are doing well. Decatur.—Winter wheat did not improve as well as expected; crop will be very light; vegetation growing slowly; early planted corn coming up nicely. Finney.—All crops growing rapidly; range-grass good; alfalfa ready to cut; wheat making fine growth. Ford.—Wheat, oats, and barley made fair growth, though it was rather cool for oats and barley; first crop of alfalfa large, except in southwest portion, and nearly ready to cut; grass doing nicely. Grant.—Grass growing some but needs rain; not much farming being done. Hamilton.—All crops growing rapidly; grass green; stock doing well. Kearny.—A good week for growth of crops, except rather cool; farmwork progressing rapidly; range-grass getting green but grows slowly; stock doing well. Lane.—Too cool and cloudy for corn and gardens; weeds starting very generally and threatens some fields of wheat; Kafir-corn and cane being planted. Morton.—Local showers have started the grass and enable farmers to begin planting in portions of the county; other parts still too dry. Ness.—Corn nearly all planted and coming up well; early wheat heading; late wheat oats, and barley poor and weedy; frost on the high did some damage to fruit, potatoes, and gardens; pastures green and stock improving rapidly; alfalfa fine. Norton.—Corn-planting nearly done; some corn being replanted; cultivation of corn begun; much wheat land being plowed up for corn and fodder crops; cane is being sown, and Kafir-corn listed. Sheridan.—Some fields of fall wheat look fair but most of it is poor; all spring grains looking fine, especially macaroni wheat; first crop of upland alfalfa good; fruit doing nicely. Sherman.—Corn nearly all planted; some coming up nicely; small grains need rain; wheat looking fine; spring sown alfalfa not yet up; pastures growing nicely; gardens doing well. Thomas.—Winter wheat nearly all killed; ground getting weedy; corn all planted, and cultivation begun; a large acreage of millet, cane, and Kafir-corn being planted; barley very fine. Wallace.—Barley, wheat, oats, and rye growing slowly; range-grass fairly good; cattle doing well; sowing millet and planting forage crops in progress; gardens grow slowly; fruit prospects good.

Special Want Column

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

CATTLE.

FOR SALE—A few fine red Shorthorn bulls, from 10 to 12 months old; will be sold cheap if taken at once. A. F. Huse, Manhattan, Kans. HEREFORD BULLS—Grandson of imported Soudan, a ton weight, \$100. Also young bulls. Prices low. J. T. Smith, Independence, Kans. CHOICE young Shorthorn bulls very low prices; also open or bred gilts, Polands or Durocs. M. C. Hemenway, Hope, Kans. FOR SALE—2 choice Hereford bulls, 22 months old; something good. Call on or address A. Johnson, Route 2, Clearwater, Sedgewick Co., Kansas. FOR SALE—Registered Hereford bulls, 1 and 2 years old, short legged, heavy fellows, reasonable prices. H. B. Clark, Geneseo, Kans. D. P. NORTON, Dunlap, Kans., offers registered Shorthorn bull and heifer calves, crop of 1903, at \$50, get of Imp. British Lion 133692. HANDY HERD REGISTER—The improved Handy Herd Book for swine breeders is a record book that every breeder should have. It is perfect, simple, practical and convenient and contains 101 pages or about one cent a litter for keeping the record. The regular price of this handy herd book is \$1, but we furnish it in connection with the Kansas Farmer one year for only \$1.50. ASK YOURSELF this question—If you need a Shorthorn bull, hadn't you just as well buy one of me, as to pay some one else more money? I have 1 roan and 2 reds—good ones—from 15 to 23 months old. J. H. Bayer, Yates Center, Kans. FOR SALE—6 good Shorthorn bulls, 3 of them straight Cruickshanks; come and see me. H. W. McAfee, Topeka, Kans. GALLOWAY CATTLE—Choice young stock of both sexes for sale. W. Guy McCandless, Cottonwood Falls, Kans. FOR SALE—Guernsey bulls from best registered stock. J. W. Perkins, 423 Altman Building, Kansas City, Mo.

POULTRY.

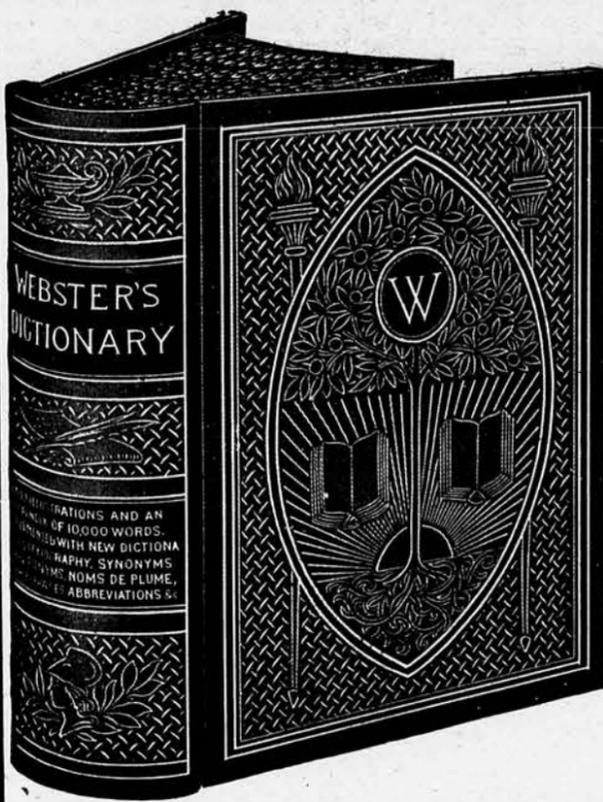
BLACK LANGSHAN eggs, \$2 per 15 from scored hens and \$1 per 15 from unscored hens. Mrs. Geo. W. King, Solomon, Kans. EGGS FOR HATCHING—From my "Superior Winter Laying Strain" of Barred Plymouth Rocks, noted for size and quality. Fifteen years careful exclusive breeding. 15 eggs \$1; 30 eggs \$1.50. E. J. Evans, Box 21, Fort Scott, Kans. EGGS—Express prepaid—B. P. Rocks, \$1 per 15; \$1.75 per 30; \$2.50 per 50; \$4 per 100. Also high-scoring S. S. Hamburgs. Circular free. Mrs. Walter Roswurm, Route 2, Council Grove, Kans.

The Markets

Kansas City Live-Stock and Grain Markets.

Kansas City, Mo., May 23, 1904. Receipts of cattle at this market last week were slightly less than the previous week, at 23,300 head. The supply was distributed throughout the week very evenly and the congested condition that existed one or two days the previous week was not in evidence. The supply of fat steers this week was moderate and a good market was had, with an advance of fully 15c for the week on the most desired grades, while a 10c advance would cover the gain on some of the less desirable kinds. Stock cows and heifers sold well all week and gained at least 25c and the market was active, all offerings selling early. Bunches of steers and heifers mixed sold well and at about the same advance as other kinds. The bulk of the dressed beef offerings sold above \$4.65 and the top for the week was \$5.10. Receipts of hogs here, last week, were the largest since February and the quality was good with fewer Southern hogs in evidence. A steady downward trend has been the rule this week and a 25c decline is the least that will express it. Five cents has been taken off each day for the last five days of the week, and all grades have suffered. Hogs that were suited for shipping purposes experienced the less loss. The bulk of the sales of the week for hogs above 200 pounds was \$4.50@4.60. Top for hogs under 200 Saturday was \$4.47½, and the bulk for the week was around \$4.40. Shipments of hogs from this market have been larger the past few weeks than for some time, and the reason assigned for this is only that the Eastern demand is increasing. Last week's sheep receipts were 19,000 head, a gain of about 4,000 head over that of the previous week. The bulk of the week's offerings has been Texas stuff, and the market has been slow and draggy, holding barely steady, ranging in price from \$4.50@4.75. Some natives of good quality have been on the market, and prices are little changed from those of the previous week, wethers selling as high as \$5.20 and ewes up to \$4.75. Lamb offerings have been very light for the week. Fed Westerners sold as high as \$6.65, and some natives sold up to \$5.90, but these were exceptional sales. The best clipped lambs will sell around \$5.75. The receipts Saturday were larger than any Saturday for weeks, and the market was slow and inactive. Trade in horses is very dull and a livening up is not expected for the next three months. The week's clearance was good, and prices slightly better than the previous week. Some good drafts sold as high as \$215, and some teams sold over \$400. There has been some local demand for drivers, prices being fairly good. There is a fair demand for good heavy mules, the small kinds are in poor demand. No material change in mule prices has been noticed for the past three weeks. The best large mules sell from \$150 to \$200. All the week's trading was in the large kind, no calls at all for small mules. H. HOWARD PETERS.

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Full Sheep Binding

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SWINE.

FOUR fine Poland-China boars, from litter of 11, for sale; also gilts and bred sows. A. M. Jordan, Alma, Kans.

SWINE—Poland-Chinas. Choice young boars, at \$12.50 and \$15. Pigs at \$5 weaning time. Best breeding. Prompt shipments. Satisfaction guaranteed. E. L. Hull, Milford, Kans.

PEDIGREED POLAND-CHINA males cheap. Barred Plymouth Rock eggs 5 cents each. John D. Ziller, Hiawatha, Kans.

HORSES AND MULES.

FOR SALE—Young, black Percheron stallion Charles L. Covell, Wellington, Kans.

FOR SALE—For the next 30 days at greatly reduced prices, 20 head of jacks and jennets, all blacks, and all good sizes. Write or see F. W. Poo, Petter Kans. Barns 3 blocks north of depot.

SEEDS AND PLANTS.

FOR SALE—Genuine Siberian millet-seed—55 cents per bushel. Sacks free in lots of two bushels or more f. o. b. at Topeka. Address J. W. Ferguson, Route 1, Topeka, Kans.

ALFALFA SEED—\$8.50 per bushel. No sand, no weed-seeds. J. H. Glen, Farmer, Wallace, Kans.

FARMS AND RANCHES.

WANTED—To correspond with a real estate owner or agent who can trade an improved farm for a section of rice land in the famous "Katy," Texas, rice district. C. H. Stancliff, 306½ Main St., Houston, Texas.

FOR SALE—160 acre farm, good improvements, abundant supply of excellent water, close to school, 4 miles to church, postoffice and cream station, \$1,200 cash. H. V. Gilbert, Wallace, Kans.

120 ACRES—New buildings, Osage Co., \$2,600. Bargain. Farm, Route 2, Williamsburg, Kans.

WANTED—Owners of 1,300 acre improved ranch in Wyoming, all under title, fence and irrigation, with abundant range adjoining, wish to make five year loan of private parties of \$15,000.00 to invest in range cattle, and give first mortgage on cattle and ranch as security. Or will sell half interest. Thorough investigation invited. Further particulars on request. Address, Ranchman, care Rock Island Implement Company, Kansas City, Mo.

FARM EXCHANGE—Having just come in possession of a good stock farm of 400 acres, and no help to run it, I will exchange it for a good, small farm of 100 acres, in the north part of Kansas or north central, preferred. Close to an Evangelical church, has mortgage of \$3,000 on it which runs 2 to 4 years at 7 per cent. This stock farm can run 80 head of cattle on it the year round and buy no extra feed, good improvements, plenty of good water, windmill, and wood. In fact, everything which goes to make a complete farm. About 230 acres pasture, 70 acres hay, 90 acres plowland, 10 acres timber and fine orchard. A nice home. Write me what you have and we will investigate. Will give more information to interested parties. We are in oil belt and some land leased for oil joining my farm. Write owner, Lewis Reep, Toronto, Woodson Co., Kans.

FOR SALE—Two 80's real well improved for \$2,000; 160, 6 room house, 1 mile from Florence, \$3,200; 320, 5 room house, new, with all outbuildings new, \$5,000; 720, rough pasture land, good bluestem-grass, \$8.50 per acre. This is but a few of the many bargains that we have; write us for complete description. Garrison & Studebaker, Florence, Kans.

120 ACRES, new buildings, Osage Co., \$2,600. Bargain. Farm, R. F. D. 2, Williamsburg, Kans.

PATENTS.

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

MISCELLANEOUS.

WANTED—Two practical experienced men for general work on farm. \$150 for 6 months. L. C. Walbridge, Russell, Kans.

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

500,000 POUNDS WOOL WANTED—Write us for prices; send sample and we will offer you the highest market price by return mail. Western Woolen Mill Co., North Topeka, Kans.

I WANT TO BUY a second hand hay-press. Write me what you have for sale and name price. T. J. Kennedy, Ozawie, Kans.

FOR SALE AND RENT—300 female cattle, 2,000 sheep, teams and tools, for cash or short time. Will rent for cash or share of sales for any number of years, good ranch to carry all of above stock. Good buildings for the purpose; pasture, fenced in three pastures, water in each; bottom and alfalfa hay; farm land fenced separately. Or will sell whole outfit on any kind of time. Address E. H. Boyer, Meade, Kans.

WANTED—Young man of good address as partner to tour the southwest in a money-making proposition. Concessions granted. Must have some capital. Investments guaranteed. Address "X. G." care Kansas Farmer, Topeka, Kans.

FOR SALE—A 60 barrel mill. Address D. F. Van Buskirk, Blue Mound, Kans.

GOVERNMENT POSITIONS—As clerks, carriers, stenographers, accountants, etc., paying \$600 to \$2,000 salary. Applicants of limited means allowed to repay part expenses after securing positions; state which position you prefer. Address Office Training School, Kansas City, U. S. A.

WORLD'S FAIR—50 rooms for visitors, close to grounds, furnished with or without board, good neighborhood, on car line. Write for list at once. A. T. Eakin, (formerly County Treasurer of Hodgeman county, Kansas) 4612 Bell Ave., St. Louis, Mo.

PALATKA—For reliable information, booklets, and other literature, address Board of Trade, Palatka, Florida.

FRESH RIPE STRAWBERRIES

Direct from our field to your express office. Guaranteed to arrive fresh and sweet anywhere within 300 miles of Fort Scott. Price \$1.50 per crate of 24 quarts f. o. b. here. Can ship daily on regular orders. Other berries in their season. Reference Bank of Fort Scott.

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These secrets have never been offered for sale in America and have never been sold for less than \$1.00 a single secret.

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Send all remittances by Registered Letter or Post-office order. Address Zollner Zuewander, 610 Burlington Building, St. Louis, Mo.

## The Veterinarian

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

**Stifle.**—I have a 5-year-old mare that displaced her stifle a few days ago in the stable. I did not notice it until I turned her out, when she dragged her leg behind her. After going a short distance she got it back herself. I have been listing with her since and she seems all right. Does she need any treatment?  
H. P. C.  
Graham County.

**Answer.**—I do not think so, but take pains to keep her in a stall where she will have no difficulty in getting up, and avoid, as much as possible, getting her into attitudes that will cause it to slip out.

**Congestion of the Brain.**—I have a sow a year old. She is getting no grain but is running on timothy-pasture and a creek-bottom. She gets all the milk and house-slop she can drink twice daily. Two evenings ago when I fed her she came to the trough, but began weaving. Her eyes looked glassy and she staggered about for a few moments until she lay down. She was breathing with difficulty. She soon got up and seems all right. What was the difficulty?  
R. K.  
Franklin County.

**Answer.**—I think she had congestion of the brain caused by overeating, or possibly by something she had eaten that did not agree with her. I would advise cutting down her feed. I do not think it will bother her.

**Cockle-Bur Poisoning.**—I lost three yearling heifers last week. They were on rye-pasture but had been there for a week. There are some cockle-burs coming up in the field. They were sick but a very short time, lying down in natural positions. They would work their jaws rapidly, then stretch out and seemed in great pain and died in a short time.  
A. J. S.  
Dickinson County.

**Answer.**—There is something very unusual in regard to the numbers of hogs and cattle that have died from forage-poisoning this spring. I have had reports from more than two hundred head of cattle, and a much larger number of hogs, that have died apparently from cockle-bur poisoning. There seems to be something in the climatic condition that favors the development of the poison in the sprouting plant. The only treatment is to keep the animals away from the cockle-burs, as they die quickly after eating them.

**Sick Steer.**—I have a 2-year-old steer that has been sick for three days. His eyes are sunken and he has a fever, and trembles while standing. His bowels seem normal, but I do not think his kidneys have acted for two days. He is bloating pretty badly. I lost one that seemed to be affected in the same manner a month ago.  
SUBSCRIBER.  
Stafford County.

**Answer.**—I am unable to tell what is the trouble with your steer, and I would advise you to call a veterinarian to examine him. I am inclined to think he may have a bladder trouble, possibly a rupture of the bladder. If the steer dies examine him particularly with reference to this organ.

**Ailing Calf.**—We have a bull calf 3 weeks old. When first born it could scarcely breathe and it was twenty-four hours before it could stand if helped up. It falls over backward frequently, seems to have fits and shakes all the time. The calf is running with the cow. Will it recover and what can we do for it? We had a cow that calved in March, but the calf was weak and soon died. Can we breed the cow again?  
H. L.  
Woodson County.

**Answer.**—I do not think you can do anything for the calf, and doubt if it will pay to raise it. It may outgrow the trouble but the question as to

whether it will pay to raise it is one that you will have to decide.

I would advise you to breed the other cow, as the probabilities are she will be all right the next time.

**Pink Eye.**—I have a 2-year-old steer that I found to be blind in both eyes this morning. The eyes have been discharging for a week, but this morning his eyes are covered with a blue scum and he can not see. Is the disease contagious, and what can I do to prevent the others from taking it?  
M. C.  
Kingman County.

**Answer.**—I send you, by mail, a press bulletin on pink-eye which will give you information regarding it. The disease is contagious and the only way to stop it is to keep affected animals entirely away from the healthy, and, preferably, quite a distance, as it may be carried by flies. Unless the animal is a valuable one, and gentle, it is difficult to treat him. Most all will recover without treatment. In a few cases an animal may be permanently blind in one eye, and rarely, in both. I think your steer's eyes will clear up in a short time.

**Distemper.**—I have a horse that has the distemper. He has been coughing for two weeks but does not run at the nose. It seems to choke him when he drinks, and he will cough for ten minutes or so. What can I do for him?

Also, when is the best time to castrate colts, and whether as yearlings or 2-year-olds?  
W. B.  
Franklin County.

**Answer.**—I am not certain that your horse has the distemper. He may have a sore throat or there may be a stricture of the esophagus or gullet which interferes with his swallowing. The coughing is probably caused by food or water which he gets in his lungs. I would advise you to have him examined by a good veterinarian. If he has distemper the only treatment is to take good care of him, and nurse him well, giving laxative food, to keep his bowels open. Distemper is like other contagious diseases; when an animal gets it, it has to run its course.

As a rule, colts are castrated the spring they are 2-year-olds. But it will depend on whether the colt is large and well-developed. If he is, I would castrate him as a yearling, as they are apt to become a nuisance before they are 2-year-olds. If a colt is not strong and well-developed I would let him go till a 2-year-old or a little later. As a rule the younger they are castrated the less they seem to mind the operation. They should not be castrated in hot weather or when the flies are bad.

**Knuckling Colt.**—We have a mule colt, 10 days old, which walked on its fetlock-joints when it was first foaled. One of them straightened up in three days but it still knuckles on the other front fetlock. What can I do for it? Will it straighten up in time?  
SUBSCRIBER.  
Saline County.

**Answer.**—I think it will straighten up in time, all right. The best treatment is to put a smooth flannel bandage from the hoof nearly to the knee and over this bind on some splints, taking pains that the splints do not chafe the leg anywhere; use thin strips of wood, metal, or stiff leather. If you get them on right they will be a great help to him.

**Bone Spavin.**—I have a 4-year-old filly that has a spavin. It has been coming on for the past eight months and is still getting larger. She has never been lame until the last few days. Can the spavin be cured and the lump taken off?  
O. S. D.  
Beaver City, Neb.

**Answer.**—I think the lameness can

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be cured, and in a mare of her age, the bunch will probably be absorbed and go away. I would advise putting on a high-heeled shoe, and blistering the spavin with a mixture of one part, by weight, of pulverized cantharides, one part of biniodide of mercury and twelve parts fresh lard or vaseline. Mix thoroughly. Repeat the blister in four or five weeks, but do not rub it in but a little the second time.

**Foundered Mule.**—Can anything be done for a mule that has been foundered over a year? Would it be chronic founder? He is in better condition now than formerly but very lame.  
F. B. S.

**Answer.**—It is a case of chronic founder, and unless some cause can be located and removed, you can do very little for him, except to use bar-shoes, keep his feet soft by poulticing or using a soaking-tub, and keep the hoofs well oiled after drying them.

**Affected Udder.**—I have a high-grade Polled Durham cow that calved in February, 1903. Before calving her udder was swollen and inflamed. After calving she gave a good quantity of milk from the two front teats but practically none from the back quarters. There are no lumps in the udder or obstructions in the teats. She is making bag now. What can I do to make her give milk from the hind quarters of the bag?  
READER.  
Rice County.

**Answer.**—This is probably a case of improper development of the rear quarters of the udder. The only treatment I can suggest is plenty of rather sloppy food, bathing the affected part of the udder with hot water and rubbing it well. I doubt as to whether any treatment at all will affect it materially.  
N. S. MAYO.

**Fresh Pork the Year Round.**

Farmers who are not provided with ice-houses experience difficulty in having fresh meat in hot weather. Dried beef and bacon become monotonous not to say "strong" during mid-summer. The next best substitute for fresh meat in summer—friend chicken aside—is nicely pickled pork, and every farmer can have this. The following formula is highly recommended:

To 100 pounds of pork, take 10 pounds of salt, 2½ pounds of brown sugar, 2 ounces of pepper, 2 ounces of soda and 2 ounces of saltpeter, and water enough to make a brine that will float an egg. Pack meat in barrel. Boil and skim the brine of sediment. When cool, cover the meat with pickle, weight it down and be sure it is all covered. Add the pepper after skimming. Let it remain in brine four or five weeks or until it is salt enough, smoke and let hang in an open, dry place. Rub well with powdered borax and no insect will ever bother it. The same recipe can be used without pickle and rub on the meat dry, but the brine is preferred and the meat is covered immediately.

This is said to make a better cure with choicer flavor than the sugar-cured on the market and often keeps ham until harvest.

**LUMP JAW IS CURED**

W. S. Sneed, Sedalia, Mo., cured four cases of lump jaw with one application to each steer; and J. A. Keesman, Osborn, Mo., cured three cases with one application to each. Hundreds of similar testimonials on hand. Full particulars by mail. Write to

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Baths & Hotel Combined

8 floors. Fine new rooms. Meals a-la-Carte at all hours.

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Turkish, Russian, Shower, Plunge, etc. The finest swimming pool in the world. Turkish Bath and Lodging, \$1.00. Most inexpensive first class hotel in Chicago. Right in the heart of the city. Booklet on application.

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**No Matter What Doctors Say—We Know That Heart Trouble in Many Cases Can Be Cured.**

There are seven main features of heart disease, viz.: (1) Weakness or Debility; (2) Rheumatism or Neuralgia; (3) Valvular Disorder; (4) Dilation; (5) Enlargement; (6) Fatty Degeneration; (7) Dropsy.

Documentary evidence will prove thousands of so-called "incurables" have been absolutely cured by Dr. Miles' New Heart Cure.

Patients often have no idea their disease is heart trouble, but ascribe it to indigestion, Liver Complaint, etc.

Here are some of the symptoms: Shortness of breath after exercise. Smothering Spells. Pain in Chest, Left Shoulder and arm. Discomfort in lying on one side. Fainting Spells. Nervous Cough. Swelling of Feet and Ankles. Paleness of Face and Lips. Palpitation. Nightmare. Irregular Pulse.

"I have great faith in Dr. Miles' New Heart Cure, and speak of its merits whenever opportunity presents. I can now go up and down stairs with ease, where three weeks ago I could hardly walk one block." One year later—"I am still in good health; the Heart Cure did so much for me, that I find it a far greater medicine than you claimed it to be."—B. D. YOUNG, D. D., 697 North Pine St., Natchez, Miss.

Money back if first bottle fails to benefit.

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If you are not posted on Zenoleum's duty and standing among stock men, investigate at once. "Veterinary Adviser" and "Piggie's Troubles," most valuable hand books, mailed free. Sample gallon Zenoleum \$1.50, express prepaid. 5 gallons \$6.25, freight prepaid.

**ZENNER DISINFECTANT CO.,**  
61 Bates St., Detroit, Michigan.



**How Shall We Maintain the Soil Fertility?**

(Continued from page 555.)

absolutely refused to be further abused, that the farmer awoke and followed the instructions of our experiment station.

Although the humus and nitrogen may be returned to the soil by rotating with alfalfa and other leguminous crops, yet it is clear that all the elements of plant-growth can not be supplied in this way; hence it is that we must seek other means to supply the other essential elements of plant-food, namely, potash and phosphoric acid. The two means regarding the maintaining of soil fertility of which I wish this article to be suggestive, are, first, crop rotation and the application of farm manures, and second, the use of commercial fertilizers.

There is perhaps nothing that should be of such vital interest to the farmer in keeping up the value of his farm as the rotation of crops. The great value of crop rotation lies in the fact that it requires no cash payments, and the value of the different crops produced in a single year or series of years should be greater than the value of a single crop grown by continually cropping with one crop. The reason for this lies in the fact that larger yields are secured by proper rotation of crops, and the farmer, if he be judicious, will so arrange his crops that the cultivating and harvesting of one crop will not conflict with the cultivating and harvesting of others. In this manner, while fertilizing the land the farmer will be able to use to the best advantage his hired help.

The crops which Kansas is at present producing in the largest quantities are corn, wheat, and alfalfa. The system of cropping which seems the best for Kansas conditions, when the soil has been more or less exhausted of its nitrogen by continuous grain-growing but still contains sufficient potash and phosphoric acid, is to grow alfalfa for three or four years, then follow with corn and wheat. Experiments show that alfalfa reaches its maximum growth in three years yet is a source of profit the fourth year. This, then, would constitute the first step in the rotation. The crop to follow alfalfa should be corn, because this would break up the sod and leave the soil in a condition most conducive to the production of a successful crop of wheat, and most desirable as a seed-bed for alfalfa. While the nitrogen is being supplied from the air by the leguminous crop, alfalfa, farm manures may be applied to the soil. These act in the dual capacity as a source of humus and supply the plant-foods, nitrogen, potash, and phosphoric acid.

However, there are some instances where the rotation of crops and the application of farm manures are insufficient; also there are regions where legumes will not grow well. When we face a proposition of this character, often the only solution is to resort to commercial fertilizers. The mention of commercial fertilizers may bring considerable opposition. The reason that so many farmers are prejudiced against this class of fertilizers lies in the fact that they may not have used the proper commercial fertilizer or they may have used it improperly—too much or too little, or they may have been the subjects of fraudulent schemes in which the fertilizers sold were made up of compounds in which the valuable elements were held in combination, and thus rendered unfit for plant-food. For instance, in supplying phosphoric acid, the application of the normal phosphate  $Ca_3(PO_4)_2$  would be practically of no value.

The thing which in the use of commercial fertilizers will cause the farmer some perplexity is the determination of what fertilizer to add. A plan, which as a general rule will give results which are satisfactory, is to first select a plot of ground in the field you propose to fertilize and divide this into seven equal smaller plots and treat as follows:

1. To the first add no fertilizer.
2. To the next add nitrogen in the form of nitrate of soda.
3. To the next add potash and phosphoric acid fertilizers.

4. To the next add potash and nitrogen fertilizers.

5. To the next add phosphoric acid and nitrogen fertilizers.

6. To the next add phosphoric acid and the acid phosphate.

7. To the next add potash.

The plots which show the most marked growth over the growth of the plots not fertilized and those treated with some other plant-food, will show what fertilizer the land requires. If, for instance, the plots fertilized with potash, potash and phosphoric acid, potash and nitrogen, make the superior growth, it would clearly indicate that the land was in a depleted condition with reference to potash.

The elements required having been determined, the next question to be decided is, in what form should the element be applied. The different effects of climatic and atmospheric conditions must all be considered. No definite rule can be laid down as to what fertilizer to use, but what may be known is the characteristics of the different forms of fertilizers.

For instance, in the soil where much rain falls, and where the heat is liable to be intense, it is hardly advisable to use an ammonium compound as the source of nitrogen, because of its volatile nature. In such soils the preferable form is nitrate of soda.

Again, as has already been suggested, we should be careful not to use compounds in which the necessary elements are unavailable to the plant, as such experiments tend to discourage the use of commercial fertilizers.

The results of investigation have shown that for the ordinary conditions probably the best forms of fertilizers are: for nitrogen, sodium nitrate; potash, potassium sulfate; phosphoric acid, acid calcium phosphate. Having determined of what elements the soil stands in need, also in what forms we wish to apply these elements, the next problem is the amount required of each fertilizer.

As a general rule, it may be said that it is better to apply the fertilizer often and in smaller quantities, than in larger quantities at longer intervals. The advantage of this method can readily be seen. If we apply fertilizers at periods of long intervals, the chance for losses by percolation and by chemical changes are much increased, while if the applications are made at shorter intervals, the crops may use up the fertilizer before it can be lost through any of these agencies.

Although the fertility of the soil may be kept up by the addition of commercial fertilizers, yet let it not be construed to mean, that we should in Kansas, as in the Eastern States and Europe, depend upon commercial fertilizers as the main source of plant-food. On the contrary, we should strive to use to the best advantage all the ordinary means at our disposal on the farm to maintain the soil in a crop producing state, and only when these are inadequate should we resort to the cash expenditure for fertilizers.

**How to Dynamite Stumps.**

EDITOR KANSAS FARMER:—We noticed in the columns of your paper that one of its readers wished to know how to blow out stumps with dynamite. We have had a great deal of experience in that line, having cleared about 200 acres of very stumpy land. After trying various methods we find it is best to bore under the stump with an inch and a half auger with a 4-foot shank. Great care must be exercised so as to get the hole very deep and as near the middle of the stump as possible so that the charge will lift up instead of going sideways. For a small stump use from one to one and one-half sticks of dynamite, according to the stump. With a little practice you can readily judge the amount required. In shooting a very large stump you can not get enough dynamite in such a small hole and it will be best to put in a squib-shot, which is about one-half stick of dynamite, to make a pocket to hold sufficient powder to blow out the stump. In handling dynamite great care must be taken to get a safe distance from the stump when shooting. In this way you can clear the field at a small cost.

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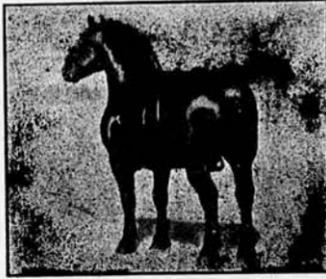
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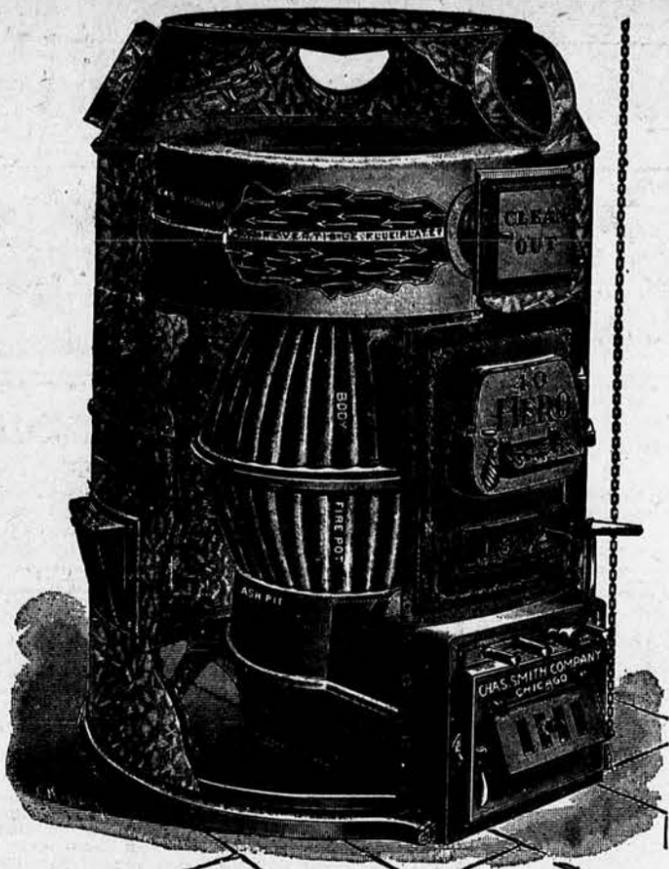
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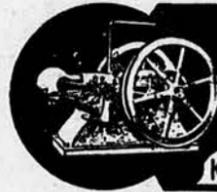
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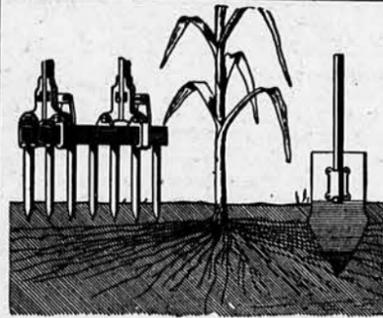
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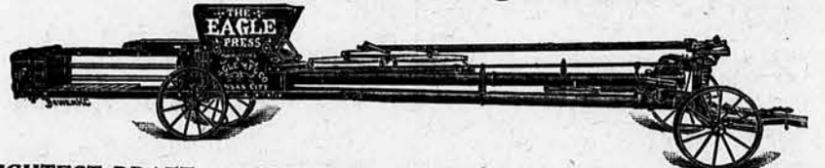
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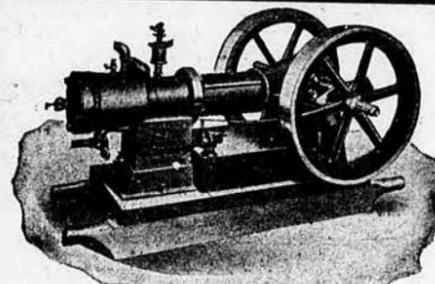


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