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KANSAS FARMER.

Established in 1863.

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116 West Sixth Ave., Topeka, Kans.

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The annual commencement of the State Normal School, at Emporia, Kans., will occur during the week of May 30 to June 5, inclusive.

"Iowa Year Book of Agriculture, 1902," is the title of a stout publication just issued by the Iowa Department of Agriculture. The book is the third of the series. It contains valuable information for the farmer.

Two young ladies came into the office the other day and ordered a year's subscription to the KANSAS FARMER and our new Census Edition of Webster's Dictionary as a present for their newly made brother-in-law. This gives evidence that these young ladies propose to train up their brother-in-law in right ways of acting and thinking and at the same time it furnishes an example that ought to be followed by thousands of other young people in Kansas. A standard dictionary in a Kansas household is a staple article as necessary as sugar and flour, and our proposition affords the cheapest means of obtaining it.

BLOCKS OF TWO.

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

THE EMPIRE OF THE WEST.

There is a territory in the Middle West which is all too little known and which is of itself an empire. Take 30,000 square miles of western Kansas; 38,000 of western Nebraska; all of New Mexico, 122,580; Wyoming, 97,890, and southern Montana, 32,000 square miles and you have a territory of approxi-

mately 325,000 square miles. Three times the size of Austria; one and one-half times the size of France; four times the size of Great Britain; nearly as large as Egypt and rich in natural resources. This country abounds in a wonderful growth of nutritious grasses and was the home of millions of buffalo, antelope, elk, and deer prior to its occupation by civilization. It is now the home of like numbers of cattle and its possibilities are only just beginning to be appreciated. With the influx of settlers has come a necessary study of climatic and soil conditions which has resulted in the discovery of new and the adaptation of old crops and methods to this wonderful empire of the West. The territory named is now the home of about one-half the number of people that are now citizens of Denmark and of about one-tenth the number that it is capable of supporting when its possibilities shall have been realized. With the introduction of alfalfa, the non-saccharine sorghums, and winter wheat, this great region has already made itself felt in commercial circles while the development of the cattle industry has made it a power.

With the opening of the "new country" in Oklahoma the people of the United States have seemed to feel that the ultimatum had been reached and that there is no longer a possibility of the free homes of the past. Such, however, is not the case. By the adoption of modern discoveries in plant-life and culture; the development of irrigation methods and the proper care of the ranges, this country is but beginning its history as the home of a thriving and populous citizenship.

A few years ago, the country described was considered the great American Desert and was deemed fit for nothing but a home for the red man and the coyotes. Now this country, particularly western Kansas, is dotted with active and progressive towns and cities made necessary by prosperous farming communities from which they draw their support.

The railroads are supposed to be managed by the shrewdest and most capable business men of the country, and when these men show activity in soliciting the business of this section, as well as in pushing new branch lines into it, it may be accepted by the common man as an evidence of their belief that there is not only business but good business to be found therein. In some things the railroads may be taken as a guide.

That portion of western Kansas which is included in the sixth and seventh Congressional districts has already won the distinction of being the best dairy section of the State. It is also rapidly forging to the front as a producer of pure-bred beef animals and is the home of numerous herds of horses, cattle, and hogs that have

made themselves felt in the show- and sale-rings for the past few years. Poultry-buyers find this a most profitable field, while its reputation as a wheat-producing country is known all over the world. It is a country in which old crops tended by old methods will not win. New crops, new methods, and new machinery belong to this new country and with them will come the development of a new empire. At this writing the soil of western Kansas is soaked in moisture. The prospects for a wheat crop are so fine that it is thought that nothing short of disastrous storms can prevent the harvesting of a record-breaker. The abundant and luscious grasses that spread over this country in waves of billowy green give assurance of a live-stock crop that will test the capacity of the railroads in getting it to market. New discoveries of minerals, gas, and other unknown resources are constantly being made and new applications of older knowledge are developing surprising results.

Kansas, with a total population of less than that of the city of Chicago, is but partially developed and only awaits the influx of bright men with up-to-date methods to treble her population in the next few years.

FROM TOPEKA TO GUTHRIE.

A day's railroad ride through the rich farming country traversed by the Santa Fe is an interesting experience at this season. The writer made such a trip from Topeka, the capital of Kansas, to Guthrie, the capital of Oklahoma, last week. After the discomforts of rain every day for seven days, one would have enjoyed the contemplation of sunshine. But the appearance of the country which follows too much rain was persistently present throughout the trip.

The daily papers as well as the correspondence of the KANSAS FARMER office had told of apprehensions of damage from the Hessian fly. The writer, therefore, took care to observe whatever could be seen from the car-window. The route did not pass through the regions from which the most serious complaints have come; nevertheless, there were seen some evidences of the destructive work of the pest. In general, however, the wheat looked remarkably thrifty. In trying to estimate the proportion of the wheat that showed damage from the fly, the writer concluded that it was about one per cent.

On poorly drained lands in Osage County and along the Cottonwood between Emporia and Strong City, corn will probably have to be planted again. Wherever water did not stand in the lister-furrows the corn was coming nicely. But corn is very late in both Kansas and Oklahoma.

While corn-growing has suffered some inconvenience along the Cotton-

(Continued on page 564)

Agricultural Matters.

(The Hessian Fly.—*Cecidomyia Destructor*.)

L. V. SANFORD, '04, BEFORE THE AGRICULTURAL ASSOCIATION, KANSAS STATE AGRICULTURAL COLLEGE.

One of the greatest insect enemies of the wheat crop is the Hessian fly. It has been estimated that at least 10 per cent of the wheat crop is destroyed on the average by this insect, amounting to an annual loss of 40,000,000 bushels. Its ravages are periodical, however, as it makes its appearance in great numbers certain years when it perhaps destroys 50 per cent of the crop while in other years it does little or no damage.

The history of this insect is somewhat uncertain, but we have much evidence which indicates that it was introduced from Europe by the Hessian troops during the Revolutionary War, being carried in straw used by them as bedding and packing. The first damage done by this pest, in the United States, was near the landing place of those troops, in 1779. Since then it has spread westward throughout nearly all the wheat-growing districts of the United States, having reached the Pacific coast in the year 1884.

The insect has two chief means of distribution; the natural means, or by flight, and the artificial, or by the carriage of straw or other material containing the pupa or "flax seeds," as they are popularly called from their resemblance to that seed. The former method may occur over limited areas where there are continuous or slightly separated plantings of wheat, rye, or barley. It has been estimated that the rate of distribution by this means may be about twenty miles per year. This I consider rather high, as when they have grain-fields near on which to deposit their eggs, they rarely fly far. The second method of distribution will account for their transportation to distant regions. From this we see the importance of destroying all straw used for packing, especially in a country not infested with the fly.

The adult is a small, dark-colored, gnat-like, two-winged insect about one-eighth of an inch in length, resembling a mosquito very much. The adults are rarely observed; but in case it is desired to see them, some of the wheat containing the pupa may be placed in a glass cage where the adults may be observed when they emerge. The eggs are very small, slender, and of a pale red color, and are deposited on the upper surface of the leaves, in regular rows, three to five in a row. Each female produces from 100 to 150 eggs. The eggs hatch in about four days, more or less, according to the weather. The larva moves down the leaf and along within the leaf-sheath until it is near the base of the stem, which in the fall is very near the surface of the ground. In the spring the eggs are placed on the leaves above the first or second joint, rarely higher. When the larva reaches a suitable location, it embalms itself between the leaf-sheath and stem where it feeds for about twenty days, causing some distortion of the stems, when it changes to the pupa, or "flax-seed" state and ceases to take food.

The number of broods each season varies considerably, being from one to as many as six. These were developed, however, under abnormal conditions such as do not exist in nature. From an economic standpoint we need consider two broods, namely, the spring and the fall.

The insect passes the winter in the "flax-seed" state and emerges as the adult of the spring brood during April and May. These adults lay their eggs on the leaves and the larva work on the straw near the first and second joints. From the "flax-seed" of this generation emerge the adults of the fall brood during the latter part of August and fore-part of September, the time varying with weather conditions. These adults lay their eggs on the young wheat and the larva feed upon it until they transform to the pupa or "flax-seed" state in which condition they pass the winter.

The appearance of a field of wheat attacked by the Hessian fly is very characteristic and may often be deceptive to the unpracticed eye. In the first stages of attack, in the fall, the young plants take on a darker color, the leaves are broad and the plant stools freely and would appear to the unpracticed eye to be very healthy; but if examined carefully it will be found that the central upright stems are wanting, and a little later the infested plants turn yellow or brown and

dle, either entirely or in part. The spring brood attacks the laterals which have escaped the fall brood and works, as has been said, on the first and second joints of the straw, weakening it and causing it to fall before ripening, making it difficult to harvest, and producing a shriveled, inferior grain, if any is formed at all.

The natural enemies of the Hessian fly are very important factors in keeping this pest in check. It has been estimated by careful observers that fully nine-tenths of the Hessian flies are destroyed by parasites. In 1888 there were bred from 1,694 "flax-seeds" 58 more parasites than flies. There are several different species of parasites of the Hessian fly, probably the most important of which is *merisus destructor*. A full discussion of these parasites would cover several pages, hence cannot be given space here.

We now come to the most important part of the discussion,—the means of combating the pest. In order that we may do this intelligently, it is necessary to know something of the conditions affecting acceleration and retarding of development. Unlike the chinch-bug, the Hessian fly flourishes best in wet weather. Moisture seems beneficial to the larva even though the weather be cold. On the other hand, dry, hot weather is a menace to the fly, often causing serious mortality to the earlier stages of the fall brood of adults. Hot, dry, mid-summer periods not only tend to prevent volunteer plants from growing, thus cutting off their food-supply, but very probably dry up many of the larva and pupa in the field. It is also a noticeable fact that conditions which, in the fall, retard the growth of wheat also retard the development of the fly.

One of the methods much employed in combating the pest is the burning of the stubble. As we have seen, the fly infests the lower joints of the straw, hence by leaving a long stubble the most of the "flax-seeds" will be left in the field. The long stubble will also insure a more rapid spread of fire. The objection has been raised to the burning of the stubble that the enemies of the fly will be destroyed along with the fly. The fact that the parasites are not retarded in their development so much by dry weather as is the fly may be advantageously used in this connection. The burning must, of course, be done before the flies have emerged, but in dry weather it may be postponed until many of the parasites have escaped. Fields should not be allowed to grow up in weeds before burning. In case they get a start sufficient to hinder burning, they may be mowed and then burned as soon as dry enough. In connection with the burning of the stubble, it is a good plan to burn all chaff after thrashing; also the screening should be fed or burned before the flies emerge from any "flax-seeds" which may be contained therein.

When burning is impracticable, the stubble may be plowed under as a substitute. This should be done to a depth of several inches and then the ground should be rolled and packed so that any flies which might emerge from the pupa in the ground could not escape. The time to plow will, of course, depend upon the season and the conditions. Those conditions which favor the development of the fly will put the ground in condition for plowing.

During late summer and early autumn all volunteer wheat, rye, or barley should be destroyed or plowed under, as these are the food-plants of the fly and their destruction will prevent the depositing of eggs.

Planting decoy strips of wheat or rye is recommended, to trap the fly. These should be sown early enough to attract the flies and should be plowed under deeply in about three or four weeks.

One of the best methods and one most practiced is the late sowing of wheat. To be effective, the sowing should be so late that the young plants will not appear above the ground until the bulk of the flies have issued and died. No fixed dates can be set for this as so much depends upon latitude, altitude, and climatic conditions.

Another very effective method of holding the pest in check is by rotation of crops. While this will not be a guarantee against the fly, it will greatly lessen its ravages, even if adopted only a single farm. Plant the wheat stubble to some crop upon which the fly can not feed and remove your wheat field to a distant part of the farm. If entire communities would adopt this system, we should hear less of the ravages of the Hessian fly.

Pasturing wheat during the fall and winter has been recommended by some authorities as a means of holding the fly in check. Many of the eggs, larvae, and "flax-seeds" will be destroyed by the tramping and feeding of the animals.

Another manner of lessening the loss from this insect is the growing of resistant varieties of wheat. Those varieties having strong, stiff, coarse stems are not so weakened by the fly, hence do not fall and break down so badly. Varieties which tend to stool freely are also better able to withstand the attacks of the fly. No varieties of wheat have proven to be absolutely proof against the fly. A few of the varieties recommended as being resistant to the fly are Underhill, Mediterranean, Red Cap, Red May and Clawson.

The wheat-grower must use his brain in combating the Hessian fly. He must study its habits, the conditions governing its development, and then use his judgment in regard to the method, or combination of methods used in its destruction.

Breeding Kafir-Corn.

Since the discovery of America and with it the discovery of the value of Indian corn as a food for both man and beast, the cultivators of this plant have done more or less in the way of seed-breeding by the selection of seed-corn with each recurring season. Recently a great and wide-spread interest has been aroused in the subject of seed-breeding by the efforts of certain scientists backed by able capitalists, and the results have been so pronounced that they are little short of astonishing. There remains, however, a large section of country, rich and valuable for agricultural purposes, in which the Indian corn is an uncertain crop. Its place in this section has been taken to a considerable degree by Kafir-corn or some other one of the non-saccharine sorghums. Recent experiments, as well as the practical experience of farmers, have shown that Kafir-corn furnishes a cattle food that is second only to the Indian corn and is more valuable in certain sections of the country. In the dairy regions it is shown that ground Kafir-corn fed to calves with separator-milk balances the ration so nicely that it is nearly equal to whole milk as a calf-food and that the Kafir-corn so used is better than oil-meal.

These being facts, we desire to suggest to our experiment stations as well as to our farmer friends the advisability of breeding Kafir-corn along the same lines which have been adopted for breeding Indian-corn but with a special reference to increasing the oil content.

We hope the Kansas Improved Corn Breeders' Association will also interest itself in this matter to the end that the Kafir-corn, which is really the corn-plant of the western plains, may be made even more valuable than it now is.

Wants to Stir the Under Soil.

EDITOR KANSAS FARMER:—As you espouse the cause of our brother sons of toil, and each week we are permitted to hear from some of our able expounders of the whys and wherefores of their great success in this goodly land, we feel under obligations to you for so many valuable ideas and practical ways of turning this wonderful domain into a veritable paradise, as a farmers' home. Think of the producers of this great country, through the medium of your excellent journal, coming together each week to discuss the latest improvements and developments being consummated.

I was born on a farm, and lived most of my life on a farm. I love my occupation and I love to talk on farm topics. When a boy, I loved to plow and cultivate the land. I had no time-piece to tell when it was 7 o'clock or 6 o'clock, I just worked by the sun. I got to work at sun-up, quit at sun-down, and did my chores before sun-up and after sun-down. I learned that if I wanted anything I must dig it out of the soil in some way. Hence I raised corn and hogs to sell to get money to buy more land, then I continued to raise more corn and hogs to get more money to buy land. As I loved fruit, I concluded to raise fruit on my land, so I have been raising it, first to eat, and then to sell to get more money to buy more land.

For many years I have been thinking if I were an inventor I would get something to penetrate the under surface to a greater depth than we usually plow, not turning the soil under. As nature has made it for a top covering I think it a mistake to turn it under, leaving no cover to regulate the mois-



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ture. The frosts are a great fertilizer. They penetrate underneath the soil, hence the under surface is loosened up so the air can penetrate and keep it porous so as to give space to little rootlets, while the top cover-soil is a fine mold or mulch holding the moisture and giving out nourishment to the plants, and in case of excessive moisture, the loose earth below will absorb the moisture like a sponge, until capillary attraction draws it to the surface. With this kind of stirring up of the land for a depth of fifteen or eighteen inches, we avoid the extremes of wet and dry, thus giving a full crop almost every year. The party who will invent such a farm implement will be a public benefactor to the producer, and make for himself a great future. I should be glad to give \$100 for such a machine. Perhaps it could be constructed for one-fourth of that amount, but friend editor, you may pledge me for that amount as an inducement to some ingenious mind to undertake to build it.

J. H. WHETSTONE.

Franklin County.

Crop Conditions on May 1, 1903.

Returns to the Statistician of the Department of Agriculture made up to May 1 showed the area under winter wheat in cultivation on that date to have been about 33,107,000 acres. This is 964,000 acres, or 2.8 per cent, less than the area sown last fall and 4,525,000 acres, or 15.8 per cent, in excess of the area of winter wheat harvested last year. The percentage of abandoned acreage in all the important winter wheat-growing States is unusually small, the abandonment, including the area to be cut for hay, reaching 100,000 acres only in Kansas, Texas, and California.

For the area remaining under cultivation the average condition on May 1 was 92.6, against a condition of 97.3 for the total area sown reported on April 1, 1903, and 76.4 on May 1, 1902, 94.1 at the corresponding date in 1901, and 82.5, the mean of the averages of the last ten years, for the areas remaining under cultivation on May 1. While there has manifestly been some deterioration of condition during the month, special field agents, dispatched to the principle winter-wheat States on the occurrence of the frost of April 30 and May 1, report the wheat crop as practically uninjured by the cold snap.

The average condition of winter rye on May 1 was 93.3, as compared with 97.9 on April 1, 1903, 83.4 on May 1, 1902, 94.6 at the corresponding date in 1901, and 83.4, the mean of the May averages of the last ten years. New York reports 88 and Pennsylvania and Michigan each 94, these three States containing 56 per cent of the total winter-rye acreage of the country.

The average condition of meadow mowing lands on May 1 was 92.8, against 86.6 on May 1, 1902, 92.8 at the corresponding date in 1901, and 90.4, the mean of the May averages of the last ten years.

The average condition of spring pastures on May 1 was 92, against 84.9 on May 1, 1902, 91.5 at the corresponding date in 1901, and 89.9, the mean of the May averages of the last ten years.

The conditions that, in all but a few States, have been favorable to meadow-mowing lands and spring pastures have, with almost equal uniformity, been unfavorable to spring plowing, and the proportion, 57.9 per cent, of the amount reported as contemplated that was actually done up to May 1 was the lowest with one exception in twenty years. The area plowed up to the corresponding date last year was 72.3 per cent of the total amount intended, and was within one-half of 1 per cent of the ten-year average.

Why RUMELY?

The thresherman has many reasons, too many to give here. Summed up, it means the model threshing outfit, the best money can buy. You will find the latest catalog on Rumely's Rear Geared Traction Engines and New Rumely Separators full of threshermen's logic, argument that convinces. Write us for it. Mailed free.

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REPLIES FROM THE AGRICULTURIST OF THE KANSAS EXPERIMENT STATION.

Planting and Cultivating Pencilaria.

Will you give me information as to the manner of planting and cultivation of pencilaria?

J. B. ROBERTSON.

Bent County, Colo.

We have had little experience in planting and cultivating pencilaria and I find little or no mention of this crop in the reports of the experiment stations. It is recommended to plant in rows three and one-half feet apart and the hills two to three feet apart in the rows. A corn-planter which is supplied with the plates for planting Kafir-corn and small seeds may be used as a planter. The seed also may be sown in drill rows with the grain-drill by stopping up part of the seed cups, making the rows three and one-half feet apart and setting the drill about as you would to sow millet or flax. This method, however, is apt to get the seed in too thick. The seed should be planted not more than one or two inches deep. The field may be harrowed lightly after planting and after the crop is up it should receive cultivation similar to that given to Kafir-corn or cane. The plant stools abundantly and makes a great growth. It may be allowed to reach its full development and to be cut for fodder the same as Kafir-corn or sorghum or the crop may be cut when it is from three to six feet high and it will immediately start again and can be cut several times during the season. (I do not make this statement from my own observation).

Although pencilaria is very highly advertised by seedmen it is doubtless not so good as Kafir-corn or cane as a forage crop. It resembles giant pearl millet and some claim it is the same thing. (Doubtless it is a variety of the same species). Pencilaria, when cut for fodder, should be cut while in bloom. It is advisable for you to try a crop in a small way but it would not be wise for you to buy very much of the expensive seed. At the station farm we shall try both the pencilaria and the giant pearl millet this season.

A. M. TEN EYCK.

Wheat and Pasture Grains for Thomas County.

Would you please give a little advice on this western part of Kansas? I have just bought a farm joining Thomas County, containing 640 acres, all excepting 140 acres is in buffalo-grass. This farm is between Menlo and Richford. Do you suppose it would be all right to put a part of it in alfalfa and the rest in rape?

About how many acres will it take to keep a cow through the summer? There are no improvements on the place. I thought I would try to get 320 acres in wheat and 320 acres to use for cattle. What do you think of it? It is a nice piece of land and I would like to have you tell me what would be the best to do with it.

LOUIS N. ARMSTRONG.

Benton County, Iowa.

I think your plan of breaking up half your land, 320 acres, and getting it into wheat is all right, as wheat is one of the staple crops of your part of the State. You would do well to try seeding alfalfa on a few acres this fall or next spring. If you can get alfalfa to grow in Thomas County, you will find it a very profitable crop. One of the best grasses to sow for pasture or hay in the western part of the State is Bromus inermis. This grass is very hardy, will stand drouth well, makes an excellent sod and is well eaten by stock as pasture.

You might try planting a little rape, but for cattle pasture it is not suitable, for sheep or hogs it is excellent. If you sow rape, plant it in rows and cultivate it. Cow-peas will also be among the forage crops which you can profitably grow. You will find Kafir-corn to be one of the best crops for forage and grain which you can grow in your region. Kafir-corn is a good drouth-resister and usually produces well every season.

If you are going into the stock business I would advise that you do not plow up all of the native buffalo-grass pasture. It has been the experience of western farmers that none of the domestic grasses will take the place of the prairie grass for pasture. It is usually considered that ten or twelve acres of the western prairie-grass lands will be required for each head of stock pastured. This will vary in different seasons, and you will always find it a good plan to help out your

pasture by growing Kafir-corn and other forage crops.

A. M. TEN EYCK.

Baling Alfalfa in the Field.

Have you had any experience in baling the first cutting of alfalfa hay in the field and storing it in barns to finish curing? I would like to find some way of handling this hay to advantage. If you can give me any information I will be much obliged.

O. G. JACOBS.

Sedgwick County.

We have had no experience in baling alfalfa from the field at haying time. Timothy and clover are sometimes baled from the windrow or swath, but the plan has not been tried with alfalfa so far as I have been informed. It may be, however, that the method will work and it is at least worth trying.

Following is a letter which I quote from the Homestead, published April 16, 1903, and signed by Wm. McCarthy, Winchester, Ill.: "I saw the question asked in your paper about baling timothy hay in the windrow or swath. I wish to say that I baled 180 tons last year and have baled a great deal during the last five years in the same way. I cut it down in the morning and baled it in the afternoon. I took several hundred bales right from the mower and pressed it hard, and it was the best hay I had. You cannot bale it too green if no dew is on it or it is not wet from rain. A good deal is baled this way in central Illinois, perhaps more than is stacked. We cut clover hay down in the morning and bale it in the afternoon. Press until the juice runs from it. All hay goes through the sweat in the stack or in the bale and there is more danger in baling hay in ten or fifteen days after it is stacked than in the field. Baling hay in the swath should be practiced more, for it is the only hay that can top the market."

It is a fact that clover cut in the forenoon and baled from the swath in the afternoon of the same day received no injury, but made excellent hay, there is certainly more than a probability that alfalfa can be handled in the same way. Doubtless there will be more danger in baling the first and second cuttings than there will be in baling the third and fourth cuttings. I would recommend, in case the plan is tried, that the bales be piled loosely under an open shed. If it is convenient for you to do so, I should like to have you try the experiment and report results. We will also undertake the experiment at this station during the present season. If it should be found that alfalfa can be successfully saved in this way, it will be a great convenience and will mean thousands of dollars to the farmers of Kansas every year.

A. M. TEN EYCK.

Sowing Rape After Rye.

Please state if ground can be prepared and seeded to rape and get good pasture for sheep or cattle after a crop of rye is harvested. If it can, please state about how much seed per acre. Any other information I will be thankful for.

R. J. WOLFE.

Harvey County.

Rape may be sown after rye and make profitable pasture for sheep and cattle during the fall. The ground had best be plowed immediately after harvesting, following the binder with the plow, if possible, and shock the grain on the plowed land. A sub-surface packer would be an excellent tool to use immediately after the plow, otherwise a disk harrow loaded with stones with the disks set straight will accomplish nearly the same result as a sub-surface packer. Harrow the ground until it is fine and firm, prepare as good a seed-bed as possible. This season of the year is apt to be dry and every provision should be taken to conserve the soil moisture. If the ground should be dry it may be advisable to wait for rain and sow the rape just as soon as the ground is in fit condition to sprout the seed.

Rape may be sown broadcast or it may be sown in rows 24 to 30 inches apart and cultivated. In either case the grain-drill is a good tool to use, or the broadcasting may be done by hand. It is usually recommended to sow the rape in rows and cultivate it, as by this method the ground is kept free from weeds and the rape makes a better growth than it does when sown broadcast, receiving no cultivation. In case the crop is sown broadcast, three to five pounds of seed are required per acre. If drilled in rows, one or two pounds of seed is sufficient if the drill can be made to sow it as

thin as that. The stronger the soil and the more favorable the condition for growth, the less seed is required. When the seed is sown broadcast it should be covered with one stroke of the harrow, the seed-bed having been thoroughly prepared before sowing. If the seed is drilled in it may be advisable to follow with the roller and harrow lightly after rolling. If you succeed in getting rape planted by the first part of July, and the season is favorable for growth it ought to furnish good pasture by the last of August or the first of September.

This is the best plan for you to follow in sowing rape after rye, yet it is possible that it may not be necessary to plow the land. If the ground is not weedy and the stubble is cut low, thoroughly disking and harrowing immediately after harvesting will put the ground in good condition to sow broadcast; but for sowing in drills and cultivating, this method will doubtless not answer, as the ground will be left with too much litter for cultivation. The Dwarf Essex variety is usually recommended as being one of the best varieties to plant.

A. M. TEN EYCK.

Canada Peas.

Will you kindly furnish me information in regard to the culture of Canada peas, both for seed and feeding purposes?

JAMES BELL.

Wabaunsee County.

Canada field peas should be sown soon after seeding oats in the spring, before corn planting. The ground may be prepared in much the same way as it would be prepared for grain crops. The peas may be sown with the ordinary grain drill set so that it will sow at the rate of about two bushels of peas per acre. The peas should be planted about three inches deep and well covered. It is a good plan to harrow soon after sowing, this kills the weeds and leaves a mellow surface mulch to conserve soil moisture. The crop may be treated much as a grain crop as regards cultivation. Cultivation with the weeder after the peas are well up will not do injury and may do much good in killing the weeds and saving soil moisture.

If used as a fodder crop, the peas should be cut before they begin to ripen and while the vines are perfectly green. Cut with the mower and allow the hay to cure well in the swath or windrow before stacking, being careful, however, to keep the fodder from getting wet by rains. If stacked out of doors, the stack should be well covered with board cover or wild grass to keep out the rain.

For seed, allow the crop to stand until the vines are dead and the peas are fully ripe. The crop may be cut with the mower, a side delivery of the swath being important in order that the horses may not trample and shell the peas. The crop may be left in the swath or windrow or piled in small bunches until the peas are thoroughly dry, when they may be thrashed with the ordinary separator, hauling directly from the field to the machine. Part of the concaves should be removed so that the peas may not be so badly split and broken. It may be desirable in case the peas are to be saved for seed to thrash a part of the crop with the flail, as thrashing with the ordinary separator is sure to split a considerable percentage of the peas.

A. M. TEN EYCK.

Does Freezing Kill Pollen?

In last week's Anthony Republican, I find the following from a farmer living in the northeast part of this county, concerning the effects of the dry weather and high winds prevailing during the middle of April and followed by over two inches of rainfall and afterwards by lower temperature: "Some of the old-time farmers are of the opinion that the freeze Thursday morning was very detrimental to the wheat. It is claimed that freezing the pollen on the plant even in the boot, will destroy its vitality, and while the plant will shoot as usual, the pollen will not fertilize the berry, and there will be very little if any grain in the straw."

You notice that he predicts a short wheat crop claiming that the frost has destroyed the pollen in the boot of the plant. I would like to have your opinion on this theory of his, if it will not encroach on your time too much.

As a matter of fact, in my experience of twenty-five years of wheat-raising in this country, I have never seen the wheat go into winter in finer condition or look more promising than at the present time. Of course the dry spell just passed caused brown spots to appear in such fields as were indif-

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ferently farmed or contained alkali spots, thin soil or hardpan near the surface; with these exceptions, the wheat has a very strong vigorous growth, dark rich color, no insects to be found, the hard from six to ten inches and the soft wheat from ten to fifteen inches high, and in no respect appears to be injured. T. B. MARSH.

Harper County.

We have a field of winter wheat on the farm which stands about 18 inches high, no appearance of heads, but on opening the sheath the heads are found 2½ to 3 inches long, fully formed. I took a sample of the wheat to Professor Roberts, the botanist of our station, who after a careful examination with the microscope stated that although the pollen was fully formed in many of the flowers, it shows no injury but is alive and vigorous. The ovules also indicate no injury whatever. We therefore conclude that the wheat in this field has received no damage from the freezing.

Professor Roberts also examined a sample of rye in which the heads were beginning to appear. He reports no injury whatever to the rye. The pollen and ovules were both in vigorous growing condition.

The freezing at this station was severe, forming ice one-fourth of an inch thick. Doubtless the wheat in Harper County is more advanced than the wheat in this locality, but it is likely that the freezing was not so severe in your locality.

I have received several letters similar to the one received from you and have heard several old inhabitants state that they have known of the wheat being injured by severe frosts before the heads appear as you stated in your letter. In each case, however, the wheat was said to have been farther advanced than at the present time. The only way to tell whether your wheat has been injured will be to send in a sample and have the flowers carefully examined. I believe that there is little cause for alarm that the late frost has injured the wheat in the least.

A. M. TEN EYCK.

Siberian Millet.

EDITOR KANSAS FARMER: Last year I read so much about Siberian millet I thought a personal trial would be the surest way of finding out good and bad points.

I had a twelve-acre piece that was in corn the previous year. I had intended to put it into alfalfa last spring but it was so wet I double-disked it in the latter part of May, and the first of June took a Hoosier drill and sowed the millet with the seeder, at the rate as near as I could get at it of ten pounds to the acre. It stood out finely, although it looked rather thin when coming up. I cut it with a binder the last of July and the seed was ripe but the stalks and leaves as green as when first up. In fact, the fodder was so green it had to be kept in the shock ten days or two weeks before it could go into the stack. I did not get it thrashed until this spring, in April, and to my surprise, it turned out 340 bushels of fine seed, and so near as several could estimate, the straw pile would weigh say at least thirty tons. To be added to the above should be about five tons of millet we did not thrash as it was considered too weedy.

I am now feeding the straw to 200 head of western cattle and find they clean it up better than corn. Kafir-corn fodder or prairie hay, and just as well as alfalfa. They are not starved to it either for they are fed all they can eat.

In comparing this with German millet—and I can do a fairly good job as I had the same piece of land in German millet two years before—our seed yield of the later was only 190 bushels and about three-fourths as much straw of a much poorer quality, and I sowed a half bushel of seed to the acre, too.

I think, however, the German millet

will make the most hay; but the other will make almost as much and of a much finer quality on account of its stooking. It can be put in most any time up to the middle of August and make a good crop. If put in early, say in May, and then cut for hay it will come again, finer than ever, and make a crop of seed. Horses eat the straw readily and it seems to agree with them.

For chickens, especially young ones, the seed is unsurpassed. We have now, April 15th, over 200 little chicks, and have not had a case of bowel trouble. Their grain diet has been almost exclusively Siberian millet.

L. A. ABBOTT.

Pottawatomie County.

Big Margin.

EDITOR KANSAS FARMER: I was very much struck with the wisdom and good sense manifested by "E. S. A." in his letter headed "The Uncrowned Monarch" in FARMER of May 7. For instance, a few days ago the local grocers were paying 12 cents per dozen for eggs, on which they made large profits, and the same day eggs were retailing in Kansas City groceries at 25 cents per dozen. If the farmers had an agent to whom they could ship their eggs in Kansas City, they would get what they are worth. As it is now, the Armours of Kansas City set the price of eggs every day all over Kansas.

D. P. NORTON.

Morris County.

Horticulture.

Raised Barn Timbers.

EDITOR KANSAS FARMER: As I have been very much interested in the experience of those who have from time to time contributed to the FARMER their experience in tree culture, with your permission I will give you mine.

I came to Kansas from Iowa in 1873, filed on homestead claim October 17, came out again in the spring of the next year, homesteaded and did some breaking, dug a well, went back and got my family of wife, three girls, one boy, and landed in Rice County, October 10, 1874, when the grasshoppers and about everybody else had left the country.

In the spring I went to farming and raising a family; and by the end of the year I began to see that the family part was a success, and that I had better expand. So I decided to buy a timber claim that joined me on the west. And as I had confidence in the production of timber I will prove to you that I had patience also.

I began to plant trees expecting to live to see them grow to supply me with fuel, post, and building material. I began by planting osage orange for outside and cross-fencing; and for timber I planted cottonwood, walnut, and a little soft maple. My first planting was done the spring of 1877. My locality was mostly bottom land on Little Cow Creek. Since then I have gotten posts out of my cottonwoods to build barns of the following dimensions: One built in 1890, 40 by 60 feet, one in 1900, 22 by 32, one just completed, 32 by 40.

The last two were built for my children, and I have plenty of timber left to go around. So you see I have met the growth of family with the growth of trees. I have made a success in that respect and proved that timber can be raised here and for useful purposes, all of which I had in view at the time of planting; and have lived to see my labor rewarded with as fine a grove as there is in central Kansas. Like other men, I have proved to be cranky in my politics, religion and tree-culture.

I have about forty different varieties of forest trees growing on the place besides over 600 bearing apple-trees. I have experimented with most forest varieties grown in this latitude in the Mississippi valley, and made a failure of most of them, and the best success with native varieties.

Now I will say that if people could have had the experience in the beginning that we have now, and planted osage orange and Russian mulberry where orchards and buildings were to be located, we would now be independent to a great degree of the timber and coal trust. We would have our own fuel and posts besides a protection from storms, and the trees would add to the comfort of man and beast as well as beautify the country.

My experience is that all varieties of trees do best on bottom lands; and that osage orange, Russian mulberry and box-elder are best for high lands.

SAM BETHERS.

Rice County.

Growing Catalpa Seedlings.

EDITOR KANSAS FARMER:—The Seed.—Great care should be taken to be sure of getting pure seed of the native hardy variety (Speciosa) as this is the only variety of any value for timber, and is as good as any other variety for ornamental planting, as it may be easily grown in "shade tree" shape by toping as a suitable height.

The safest way (where one can not gather him own seed) is to buy from some reliable party located near natural catalpa forests, as seed from such localities is not likely to be mixed or hybridized with inferior varieties. And by the way, do not object to paying a fair price for the seed; as your humble servant having helped to gather several hundred pounds the past season, can certify that it is no picnic climbing around the tops of tall trees after it.

The Soil.—Rich bottom land is the natural home of the catalpa, but any soil that will grow a good crop of corn will answer for growing seedlings. Do not plant on poor soil, or soil that is full of seed of such rank weeds as careless or hog-weed. I like rather new land and if it has some sand in it so much the better, as it is not so apt to form crust on the surface after a rain.

Planting.—Break the ground early in spring, and work it over every few days with harrow or cultivator so it will become well settled and in shape to retain moisture when seed is planted. Do not plant until soil has become warm, or about the time you would plant corn. Then take a single-shovel plow, or some similar tool, and make shallow furrows, 3½ to 4 feet apart. Now hitch to a log or fence-post and drag it along the furrow until you have a fine, moist seed-bed. This is important as the seed is light and will germinate much quicker when planted in a compact soil. Sow the seed about 20 or 25 to the foot; cover with a little fine soil and press it down quite firmly by tramping or some other way, then draw about an inch of loose soil on top.

Should hard rains come before the plants are up, and a crust forms on the surface of row, harrow lightly or take a hand-rake and break the crust, being careful not to disturb seed. Keep the spaces between the rows cultivated to kill weeds and retain moisture.

Cultivation.—After plants are up, cultivate about the same as you would corn, keeping weeds down and soil stirred after every rain.

With good soil and fair growing season, plants will make a growth of from 1 to 3 feet the first year. After leaves have fallen they should be pulled up, and if for market, tied in bunches of 100 each, making two grades as to size.

Select a well-drained spot and heel them in, working fine soil or sand well in among the roots, and before severe freezing weather throw over the tops a light covering of straw or corn stalk. Handled this way they will come out in the spring in fine shape and be sure to grow and give the planter satisfaction.

G. D. J.

Edwards County, Illinois.

Missouri Horticulturists.

EDITOR KANSAS FARMER:—The Missouri State Horticultural Society will hold its semiannual meeting at the beautiful resort and hotel at Pertle Springs, June 3, 4, and 5, 1903.

Accommodations there are complete, so that we can all be at one hotel, and the hall for the meeting is near by. It will pay you to meet with us this time, if it is possible for you to do so.

A good programme is arranged, and the best part of it will be the discussions of the topics or papers after they are presented. These discussions and experiences and facts and suggestions are of much worth to every fruit-grower.

It is the aim of these meetings to bring out new men and new ideas and new experiences. Some of our fruit-men have facts of untold value to our industry, and we want some of these workers to let their experiences be known.

The persons whose name are on the programme are not the only ones who will give us something good.

Because you have never written for the Society is no reason why you should not do so. If you have something of value to us, tell us so. The Society is anxious above all things that the sympathy and good will and help of every fruit-grower of the State shall be enlisted in the work. Come, then, and help us push our State forward.

To-day we stand first in number of apple-trees in orchards, and close to, if not first, in peach orchards and berry plantations.

This is due first to our advantages, and next to the uniform push and union of effort of our fruit growers, and third to the work of the State Society in pushing this development during the lost twenty years.

A FEW HEARTFELT WORDS.

The World's Fair is the great work of this Society for the next two years, and to you we must look for the success of our show.

I wish our members and fruit-growers to understand that I fully appreciate their good intentions in asking for my appointment as Superintendent of Missouri Horticulture at that great World's Fair.

This honor has come to me through your efforts, and not because of my own seeking; and since you, my good friends, with whom I have worked so long, are responsible for my appointment, I assure all of you that you are the ones I shall depend upon to help me in this work, and, all together, we will make a display worthy of our State.

If your efforts have been successful in securing the appointment, you must fully understand that your work is not done, nor will it be done until the end of the World's Fair in 1904. You will be responsible for our success as well as I. If you will stand by me as you have done in our Society for the past years, you will find our work one of pleasure, profit, and success. I pledge myself to be one with you to do my full duty; will you pledge yourself with me to this work?

L. A. GOODMAN, Secretary.

Lawn Grass.

EDITOR KANSAS FARMER:—We bought a farm this spring located on the rolling land just south of the Arkansas River. The house is located on a small hill and the man made a mistake and plowed all around the house. The land is quite sandy and drifts badly. It is a light color and extends down for fifteen feet or more to water. Can you tell me through your paper what kind of grass I can probably succeed in growing and thus stop the drifting? The wild grass that grew here is commonly called "bunch grass."

H. W. GIDDENS.

Pawnee County.

The first thing necessary is to find something that will hold the sand until grass can gain a foothold. At present, while we are having so much rain, is a good time to start something to growing on the ground. Oats with blue-grass may be made to catch, though it is a little late to sow blue-grass unless one has enough water to keep the young plants from getting thoroughly dry. It is often a good plan on such soils to plant some crop, as oats, that will grow until fall and then, without plowing the land, sow it to blue-grass. This may be done in September or early in October. By keeping the oats mowed during the summer there will be little danger of trash bothering while the blue-grass is being planted.

If there is growing near a finely-sodded field of buffalo-grass it may be used in sodding, and will be found to be as satisfactory as any lawn-grass that can be bought on the market. In the absence of the buffalo-grass, some other grass that is not too bunched may be used with success. In sodding, plenty of water while the roots are taking hold is a good thing, and a windmill is almost indispensable where one expects to have a good lawn.

If the area is too large for sodding or planting to blue-grass, a field of alfalfa planted a few rods from the door does not detract from the landscape though it is not altogether pleasing at close range.

Bromis inermis makes a rather bunched sod but can be relied on to hold the sand after it gets a foothold. This grass would be better if sown in the fall on land that drifts badly.

GEO. O. GREENE.

Kansas Experiment Station.

Intelligence of Birds.

The following is from the letters of Lady Mary Boyle, who was a witness of the fact and therefore can be relied on:

One day, while walking with my mother (in London) over the bridge, we were attracted to a small, poor cottage by the exquisite singing of a thrush. The old couple who lived in it were very poor and their richest possession was the thrush which sang outside in a wicker cage. After listening for a few moments my mother asked if they would be willing to sell the thrush to her. The bargain was made, the double of the sum they named was paid by my mother, who sent a servant next morning to claim



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her purchase. The cage was placed in a large and cheerful window in our dining-room, but not a sound or a note came from the melancholy bird, which drooped and hung its head as if moulting. We fed, we coaxed, we whistled, but it remained silent, motionless, and moping. My mother felt as much indignation as was consistent with her gentle nature. She was not suspicious, but it looked as if another bird had been palmed off upon us. She waited several days, when her patience was exhausted and she sent for the late owner. The door opened and my mother advanced to meet him, but neither of them was allowed to speak, for no sooner did the old man make his appearance in the room than the bird leaped down from its perch, opened its wings and broke into so triumphant a song of joy that it seemed as if the whole room vibrated with the melody. "Why, my pretty lady," said the man, approaching the cage, "you know me, don't you?" and the thrush kept flapping its wings and moving from side to side, one might almost say dancing for joy. There was no doubt about it; it was the same bird that had charmed us in the lane at Wolsey, but, like the Hebrew captives, it could not sing its song in a strange land. "Take it back," my mother said, "I would not part such friends for all the world," and off together went that loving pair, the pretty bird full of song.—Our Dumb Animals.

The Stock Interest.

THOROUGH-BRED STOCK SALES.

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

September 3, 1903—Central Missouri Hereford Breeders' Association, Macon, Mo.
 October 7 and 8, 1903—Combination sale of Poland-Chinas and Shorthorns. Poland-Chinas on the 7th, Shorthorns on the 8th. James P. Lahr, Sabetha, Kans., Manager.
 October 12, 1903—C. O. Hoag, Centerville, Kans., Poland-China hogs.
 October 15, 1903—Central Missouri Hereford Breeders' Association.
 November 10-11, 1903—Marshall County Hereford breeders' annual sale at Blue Rapids, Kans.
 November 12, 1903—Central Missouri Hereford Breeders' Association.

Blackleg.

EDITOR KANSAS FARMER:—In reply to B. Fowles' inquiry regarding cure for blackleg: Put a boy after the animal with a good hickory stick and keep it in a brisk walk for about four or five hours; do not let it lie down, and do not run it. I am a boy 12 years old, my father put me and my brother after a calf with the blackleg and kept us after it about four hours. The calf is well now and doing finely and has not had any signs of blackleg since.

JOHN GARETSON.

Newton County, Missouri.

How to Avoid Bloat.

EDITOR KANSAS FARMER:—In reading your most valuable paper, will say in answer to Prof. D. H. Otis on alfalfa pasturing, there is no danger if the alfalfa is kept close to the ground, just so that the stock can get a good nip. It it outgrows the stock that are on it, turn in more stock, or take a mower and cut it down. I have lost stock on it when it was eight or ten inches high, but never lost any when short. Some say horses die on it, and I lost a pony by bloating, but he was old and could not chew the stems. He had been on short alfalfa, but one day I turned him on tall alfalfa and it killed him. I examined him, and found the alfalfa wrapped in a ball in his stomach as he had swallowed it without chewing, just as cattle do.

The best way to take bloat out of cattle is to put a stick in their mouths and pry it up and down to open their jaws. That will cause them to belch, and eases them. * * * * * Oklahoma.

Very Fast Horses.

Excerpt from paper read before the Kansas Improved Stock Breeders' Association by Geo. W. Maffet, Lawrence, Kans.

Wallace's Year Book, published by the Trotting Association, contains a printed summary of every race of the year on accredited race tracks in the United States. A list of every 2:30 trotter and 2:25 pacer; a great table of sires, showing every son and daughter, grandson and granddaughter who has trotted or paced into the list; the great brood mares who have produced two or more performers—and other statistics. It is a bewildering mass of figures and hard to rate as to value, but by a little book-keeping applied to the year book I will give you a birds-eye view of the Standard-bred horse as valued by performance, classified along the male lines.

There are two great families of trotting horses, headed by two great-grandsons of Imported Messenger, viz., Hambletonian 10 and Mambrino Chief 11. Three-fourths of all the horses who have performed in 2:30 belong to the Hambletonian family. Add the Mambrino Chief family to the Hambletonians and you have seven-eighths of the entire 2:30 list. Among the remaining one-eighth are included the Morgans, the Bashaws, the Norman 25, and Blackwoods, the Blue Bulls, the Tom Hals, the Sultans, and all the unknown blood. Unknown blood is not always cold blood—far from it. It may be the hottest of hot blood of which trace has been lost through change of ownership.

I present herewith a tabulated summary of the trotting families. It shows the classified families, with the performing sons and daughters, the producing sons and daughters, and the performing grandsons and granddaughters. The Geo. Wilkes family takes the lead with 83 performers, 198 producers, and 2,573 performing grandsons and granddaughters. Electioneer comes next with 160 performers, 176 producers, and 1,045 performing grandsons and granddaughters. Third comes Abdallah 15 with very few, but claims credit for his sons, Almont, Belmont, and Major Edsall, and his grandsons, Nutwood and Robert McGregor; Nutwood himself having 165 perform-

ers, 245 producers, and 877 performing grandsons and granddaughters. It is interesting to note how much opportunity and environment has to do with pedigree and how much accumulated performance has to do with age.

97 producing sons, the three leading went from California—Sphinx to Michigan, Norval to Kentucky, and Chimes to New York. The two sons of Abdallah 15—Almont and Belmont—both born the same year and both out of

FAMILY CLASSIFICATION OF 2:30 LIST.

Sons.	Grandsons.	Great-grandsons.	Year foaled.	Performing and granddaughters	Producing sons and daughters	Performing and granddaughters
HAMBLETONIAN 10 (Great-grandson of Imported Messenger).						
Geo. Wilkes.....	Red Wilkes.....	Ashland Wilkes.....	1849	40	230	1811
		Allie Wilkes.....	1856	83	198	2573
		Hinder Wilkes.....	1874	157	172	587
		Redfield.....	1882	66	11	28
		Repetition.....	1883	27	6	6
		Onward.....	1875	158	163	545
		Shadeland Onward.....	1883	33	5	22
		Allandorf.....	1882	28	11	27
		Anderson Wilkes.....	1884	30
		Garnet Wilkes.....	1884	30
		Alcyone.....	1877	59	71	355
		Quartermaster.....	1877	59	71	355
		McKinney.....	1877	59	71	355
		Wilkes 8571.....	1877	59	71	355
		Dark Night.....	1877	59	71	355
		Alcantara.....	1876	149	70	245
		Alcander.....	1884	30	1	1
		Jay Bird.....	1878	85	47	214
		Allerton.....	1878	85	47	214
		Eagle Bird.....	1878	85	47	214
		Guy Wilkes.....	1879	75	43	144
		Sable Wilkes.....	1879	75	43	144
		Nutwood Wilkes.....	1879	75	43	144
		Gambetta Wilkes.....	1881	101	47	134
		Bourbon Wilkes.....	1875	92	45	127
		Charleston.....	1882	20	3	3
		Baron Wilkes.....	1882	99	47	117
		William L.....	1882	10	22	119
		Axtell.....	1886	65	12	17
		Simmons.....	1879	106	40	81
		Wilton.....	1880	103	22	43
		Wilkes Boy.....	1880	65	26	70
		Constantine.....	1875	64	35	62
		Ambassador.....	1852	5	43	199
		Belmont.....	1864	59	140	725
		Nutwood.....	1870	165	245	877
		Wedgewood.....	1870	35	30	84
		King Rene.....	1870	40	45	80
		Egmont.....	1873	41	36	68
		Almont.....	1864	37	177	689
		Almont Jr.....	1872	47	36	69
		Altamont.....	1872	47	15	25
		Piedmont.....	1872	25	23	40
		Atlantic.....	1872	25	19	34
		Major Edsall.....	1859	2	9	107
		Robert McGregor.....	1871	92	89	226
		Electioneer.....	1868	160	176	1045
		Anteo.....	1879	46	18	54
		Alfred G.....	1879	46	18	54
		Norval.....	1882	70	10	32
		Chimes.....	1884	63	22	28
		Sphinx.....	1883	85	12	13
		St. Bel.....	1883	56	11	19
		Electrite.....	1883	50	1	1
		Egotist.....	1883	39	6	13
		Anteros.....	1883	32	10	10
		Albert W.....	1883	21	10	11
		Bow Bells.....	1883	25
		Happy Medium.....	1863	94	133	458
		Pilot Medium.....	1879	114	40	65
		Riley Medium.....	1879	114	40	65
		Dictator.....	1863	57	121	355
		Director.....	1877	51	44	124
		Direct.....	1877	51	44	124
		Phallas.....	1882	25	25	67
		Phallamont.....	1882	25	25	67
		Pretender.....	1882	23	9	10
		Lord Russell.....	1884	45	96	342
		Hambletonian 1044.....	1884	31	26	71
		Santa Claus.....	1886	38	116	264
		Sidney.....	1874	18	9	113
		Steinway.....	1881	96	25	52
		Louis Napoleon.....	1876	34	17	48
		Jerome Eddy.....	1864	34	75	251
		Edward Everett.....	1868	31	50	150
		Hambrino.....	1875	38	19	27
		Nephew.....	1885	46	49	169
		Delmarch.....	1885	25	19	26
		Wild Brino.....	1885	22	1	1
		Young Fullerton.....	1885	20	2	2
		Egbert.....	1876	65	77	159
		Aberdeen.....	1866	53	65	159
		Ellal G.....	1866	33	13	16
MAMBRINO CHIEF 11 (Great-grandson of Imported Messenger).						
Mambrino Patchen.....	Mambrino King.....	Elyria.....	1844	6	40	120
		Greenback.....	1862	25	153	330
		Mambrino Boy.....	1872	60	72	191
		Princips.....	1882	65	3	4
		Earl.....	1888	13	31	40
		Greenlander.....	1883	13	50	208
		Greenbacks.....	1870	51	82	242
		Princeton.....	1880	27	6	6
		Pancoast.....	1882	20	4	4
		Patron.....	1877	25	29	125
		Prodigal.....	1882	40	6	9
		Happy Russell.....	1880	30	4	12
		Dexter Prince.....	1870	17	25	117
		Bayonne Prince.....	1870	24	2	2
		Clark Chief.....	1861	6	38	106
		Dexter Prince.....	1870	41	93	234
		Bayonne Prince.....	1879	54	11	18
			1879	54	11	18
			1879	54	11	18
			29	7	13	13
BLACK HAWK 5 (Grandson of Justin Morgan)						
Ethan Allen.....	Daniel Lambert.....	Aristos.....	1833	4	16	24
		Ben Franklin.....	1849	6	36	115
		Star Ethan.....	1858	38	93	249
			1870	30	24	56
			1873	36	31	40
			1873	36	31	40
			12	1	1	1
GIFFORD MORGAN (Grandson of Justin Morgan)						
Vermont Morgan.....	Golddust 150.....		1844	6	40	120
			1862	25	153	330
			1872	60	72	191
			1882	65	3	4
			1888	13	31	40
			1883	13	50	208
			1870	51	82	242
			1880	27	6	6
			1882	20	4	4
			1877	25	29	125
			1882	40	6	9
			1880	30	4	12
			1870	17	25	117
			1861	6	38	106
			1870	41	93	234
			1879	54	11	18
			1879	54	11	18
			29	7	13	13
BLUE BULL						
Jim Wilson.....	American Boy.....		1854	60	154	288
			1854	60	154	288
			29	12	15	15
			36	9	28	28
THE MOOR						
Sultan.....	Stamboul.....		1867	6	13	88
			1875	52	51	138
			1882	44	15	20
NORMAN 25						
Swigert.....	Blackwood 74.....		1866	2	18	79
			1866	48	73	133
			9	43	67	67

For instance, out of the 150 producing sons of Hambletonian 10, three stand preeminent in the breed, George Wilkes and Abdallah 15, each of whom went from New York to Kentucky; and Electioneer, who went from New York to California. Of Electioneer's Mambrino Chief mares, remained in Kentucky and kept from year to year in close rivalry, until Nutwood, one of Belmont's sons, went from Kentucky to California and then to Iowa, and as a result, Nutwood stands among the select half-dozen sires at the su-

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preme head of the breed. Onward and Red Wilkes, sons of George Wilkes, both out of Mambrino Chief mares, and born in 1875 and 1874, have fought for supremacy for many years, sometimes one, then the other ahead in the performance of their progeny. At this time Red Wilkes leads a little in numbers and Onward is a trifle a head in speed averages.

About Disease at the Royal American Swine Show.

EDITOR KANSAS FARMER:—I have read the report of H. M. Kirkpatrick of the total receipts of the Royal Swine Show at Kansas City last fall. It would not look bad to a man that knew nothing more about it. But there are two sides to this story and you will kindly let me present the other. Kansas City is not a fit place to exhibit breeding-stock on account of swine disease being shipped into its stock-yards from almost all the western States and holding a fair there is, as it were, in the pest-house where hog-cholera and swine-plague live 365 days in the year. It is impossible to get hogs in and out of that pavilion without exposure to this much-dreaded disease. When our wise men say, "It is all right, other folks take the risk," they are like the little boy who said, "What mother says is so whether it is so or not." The Royal Show is all right when held at the right place. But why choose a death-trap like Kansas City in which to hold it. It looks like insanity to me to attempt such a thing. Those who have had their fingers burnt of course will stay out but there are scores who have not been over the road and must have the experience.

The \$500 donated by Kansas City seems to be a drawing-card without any consideration of the final result. Now let us figure up the receipts and cost.

Mr. Kirkpatrick says Kansas City Stock Yards Company gave \$500; Poland-China breeders, \$504; gross receipts from hog sales, \$1,620; from Kansas City friends and elsewhere, \$1,168.08; making a total of \$3,792.08. Now let us see the other side. W. S. Hanna, of Pomona, Kans., tells me that Mr. Mull, of Iola, lost over \$3,000 worth of hogs on account of that show. A man at Ellsworth bought a hog there and lost 80 head. L. B. Tunnell, six miles south of McPherson, bought one and lost 80 head. I saw a boar sold for \$200 to a man in Colorado; that boar died. I saw a sow, owned by Deitrich & Spaulding, sold to an Illinois man for \$104; this animal also died. Winn & Mastin lost several of their fine show-herd, including their grand sweepstakes winning boar, that I don't suppose \$1,000 would have bought. I bought one and lost \$2,200 worth of fine hogs by buying one sow. This loss figures up \$6,504, besides 160 head of hogs by two other men. Now draw the line and see who paid the fiddler. I wonder if the wise men won't hold another show and sale at Kansas City Stock Yards. V. B. HOWEY. Shawnee County.

[The matters presented in Mr. Howey's letter are of so much importance that a copy was sent to Mr. Kirkpatrick so that his reply might be printed with Mr. Howey's statement. Mr. Kirkpatrick treats the subject candidly as follows:]

EDITOR KANSAS FARMER:—Mr. Howey makes no criticism upon the management of the Swine Show that would call for a reply from me. In fact he compliments the "wise men"—who are us—in likening us to the mother of the little boy whose statements are true whether true or not. But he does make some statements which unfortunately are, in the main, true, that, without explanation, may work injury to the interest of swine-breeding and especially to Kansas City as a place for the exhibition of swine which is acknowledged to be a necessary part of the industry, that I feel compelled to give attention. Then there are some facts not generally known that I wish to make public. Mr. Howey is an honorable man. "So are we all," but he makes a statement that is entirely incorrect misleading and injurious, when he states that "it is impossible to get hogs in and out of that pavilion without being exposed to this much-dreaded disease." I have held three public sales in Kansas City, one of them at the pavilion, without any disease resulting. There have been held several other Poland-China sales at the pavilion without trouble following, so far as I know; and the Berkshire people have conducted many sales there and Manager Rust informs me that there were no bad results from any of them. My recollection is that Col. Mills, who had charge of the Berkshire sales,

made the same statement to the show committee when discussing the question of danger prior to holding the American Royal Show there. How then can Mr. Howey's statements be true? A number of outbreaks of cholera followed in the wake of the Royal exhibition last fall that were undoubtedly attributable to contact with the disease at Kansas City, notwithstanding every possible precaution was taken that was within the control of the managing committee. Rigid examination and continual disinfecting was performed, and for some time after the exhibition it remained a great mystery how and where the trouble could have originated. It remained for Col. Mills to make the discovery during his stay in Kansas City in February, while he was conducting the Berkshire sale at the pavilion. His statement in substance is that the cars of show-hogs that arrived during the night were set in upon the unloading tracks of the stock-yards where dead hogs are handled, and that some of these cars stood there during the night in close proximity to the dead hogs and along the side of the platforms where the dead hogs are loaded, all contrary to instruction, billing, or necessity. Mr. Rust, general manager of the stock-yards, says all roads have direct connection with or reach the pavilion track through a switching company and that this track is about one-quarter of a mile from the stock-yards tracks; that there was ample room on these tracks, and that there was no occasion or necessity for any cars destined for the pavilion track to have been sent to the yard tracks, and until advised by Col. Mills, he had no knowledge of any cars having been so switched. Upon what switching crew or railway company the blame falls has not yet been ascertained, so far as I know. The disinfecting and careful conduct of the stock, and the fact that so many sales had been held without any disease, I think leads the patrons of the exhibition and sales to a condition of over-confidence and neglect of quarantine precautions on reaching home that had much to do with the losses occurring. I know it is true in my own case to the amount of easily \$2,000.

Everybody knows that the exhibition of hogs at any county, district, State, or National show is attended with danger, and many disastrous results have followed our State fairs, and yet the shows go merrily on; and I have no doubt Mr. Howey was in favor of the Legislature of his own State making a liberal appropriation to establish a great exhibition of swine at his own town of Topeka. Then I want to take you up to Chicago, where, according to Chicago people, the greatest exhibitions of hogs are made that the world is privileged to see and show how infinitely greater the chances for exposure are. How almost over the commercial hog-pens the exhibition stock is quartered, and yet, so far as I know, very little trouble has resulted. Mr. Rust further states that for future exhibitions, arrangements will be made to have all the show- or sale-hogs set to the Genesee street track, still several blocks further away from the yards. Now, good people, I am not seeking to promote another show or sale in Kansas City, but if what I have stated is true, why should Kansas City be denounced as a death-trap? Mr. Howey says the Royal Show is all right in the right place. Can he or any one name a better place where a Royal Show is possible? H. M. KIRKPATRICK.

Harvesting the Wheat Crop.

EDITOR KANSAS FARMER:—In all probability, a farmer's time is of the greatest value during the harvest season. Therefore it is advisable to prepare beforehand, and have everything in readiness for the harvest-field. And since machinery has obviated the necessity of so much labor in the field, it would be well to see that no repairs are needed when the grain is fit to cut.

The Kansas farmers have experienced no small amount of trouble in securing the necessary help to assist with the harvest. However, harvesting machinery has attained such a point of perfection that it is now possible to reap a large field with but very little labor. A machine should never be purchased until it has proven its worth in the field and these tests should be at the expense of the manufacturer and not of the farmer. Moreover, a machine should not be bought without its reliability and durability be well known to the buyer.

Dealers usually handle but one line, and this is always the best that is to be had; but inexperienced buyers should learn from their neighbors the kind of a machine that has attained

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the greatest success. I do not say this because I am interested in one machine more than another, but in view of the fact that there are localities in which there is no organization or institute at which the machinery question is discussed understandingly, where every member receives information of the methods that have proven most successful.

I have found the driving of four horses abreast to be better than to hitch a team to the end of the tongue. Last year for the first time we used the Des Moines "Evener" on our binder and found the driving of four horses abreast to be much better; it also saves the cost of an extra driver.

During the past three years we have used the Champion Binder and have found it to be very durable and an exceptional draft binder; in fact it is one that I can cheerfully recommend to my brother farmers. In shocking the grain it would be advisable, when damp or a bit green, to shock in wind-row fashion, as this permits the wind to penetrate and dry the grain. A number of farmers here had considerable trouble in securing thrashers during the past season, because all of the thrasher-gangs had gone into the combine, forcing the price much higher than it had ever been. But I would recommend my brother farmers to select a man who does good work and contract with him at an early date, which will save much bother and expense.

The J. S. Case and Port Huron thrashers have done the best work in our neighborhood, doing exceptionally good work in cleaning the grain. There are a few pony thrashing machines here but they are far from being practical.

We farmers make a practice of cleaning our seed-wheat with a fan-mill, thus removing the small grains and weed-seed. We operate our fan-mill with a Weber gasoline engine which we use for almost everything where power can be applied, being very simple and also cheap to operate.

In storing grain, especially newly thrashed wheat, be sure that the bins are clean; it would not be out of place to have them whitewashed as that will kill a large number of insects. Some of our neighbors have used bisulphide of carbon on their grain to prevent insects from getting into it; yet I do not believe it to be a necessity, if the bins are kept clean, and wheat put in in the proper shape.

T. F. MCGLYNN.

Wyandotte County.

Celery.

EDITOR KANSAS FARMER:—Will some one please tell me through your valuable columns how to raise celery, how and when to plant the seed, whether to start the seed early in the house or plant it out of doors?

Cloud County. ELMER CHURCHILL.

The following from Press Bulletin No. 11, Kansas Experiment Station, will answer Mr. Churchill's inquiry:

Celery is one of the most palatable vegetables to be found on the American tables. Its cleanness, brightness and crispness, together with its delightful odor and flavor, are the qualities that make it welcome and have caused the demand for it to increase more rapidly than the supply.

Its culture has, however, spread rapidly in recent years as a variety of soils has been found upon which its production is certain and very profitable.

At the present time there is scarcely a town of any size in our State whose gardeners do not include celery among garden crops, while it has also found an honored place in many family gardens.

OBTAINING PLANTS.

Home-grown plants have given better results than those obtained from commercial growers. Fresh seed should be sown in hotbed or cold frame about April 1. Rows should be six inches apart and the seed covered to a depth of one-eighth of an inch. Firm the earth over the seed and shade lightly. Water to keep the soil moist but not wet. Regulate the temperature of the frame at from 60 to 70 degrees. When the plants are from two to three inches high they should be transplanted to other frames or else thinned and sheared off to make them strong and stocky. Plants should be well hardened before transplanting in the field.

LOCATION.

The best location for celery is a moist cool spot on rich loamy soil, protected from the wind and suitable for irrigation. Enrich the soil heavily with well-rotted stable manure early in the spring. Give deep plowing and cultivate thoroughly, in order to have the ground mellow at the time of transplanting.

TRANSPLANTING.

Several methods are in practice. Setting plants in trenches, in furrows, on the sides of furrows and on the level surface are methods employed by various growers. Our best success has been attained in the following way: Mark off the rows four feet apart and furrow with stirring plow, turning the ridges in the same direction. Set the plants six inches apart on the side of the furrow next the ridge and a little above the bottom. In the subsequent cultivation keep the furrow open and use it as a ditch in irrigating.

CULTIVATION AND BLEACHING.

Thorough cultivation should be the rule from the start. Permit no weeds to grow. If irrigation is practiced the ground should be cultivated after each application of water.

When the plants have attained the proper size for use, the leaves are brought into an upright position by boards placed on either side of the row, so that they slope towards the plants at the top, or else by dirt drawn against the plants and packed firmly around them. The object of this is to cause the leaves to take an upright position, and exclude the light from the heart of the plant, so that the later growth is white or "bleached." The process of bleaching requires from two to four weeks, depending on the variety and the time of year.

DIGGING AND STORING.

After the bleaching process is carried as far as desired, the plants are dug. For early celery, this may be in September or October, but the late crop should not be taken up till there is danger from freezing. The plants are usually lifted with a spade or potato fork, and the decayed outer leaves are removed. They are then ready for storing. This may be done in a damp, cool cellar or in trenches outside. If in the cellar, the roots should be bedded in damp sand or earth, leaving the plant to stand upright. Boards should be put in every eight or ten inches to separate the plants and allow ventilation. When the crop is stored out-

side, trenches are dug eight inches wide and deep enough to allow the tops to be even with the surface of the ground. For a cover, nail two boards together making a trough. Set this over the tops and spread over it a light covering of hay. As the cold weather increases cover with earth to avoid all possibility of freezing. If sound when stored, celery treated in this way should keep until February.

VARIETIES.

We have as yet found nothing better than the well-known varieties, Schumaker, Giant Pascal, White Plume, Golden Heart, etc.

Young Alfalfa Not Doing Well.

EDITOR KANSAS FARMER:—I sowed five acres to alfalfa last fall on ground where millet was raised. I disked the ground and harrowed three times, then I drilled twenty pounds to acre about September 5. I got a good stand, but it has not the right color and it does not grow any. It has a yellow color, and is three or four inches high. But in bunches where it has the right color it is ten to twelve inches high. Do you think it will come out all right or would it be better to plow and seed again? What is the cause of that yellow color? Give me advice in next FARMER, if possible. A SUBSCRIBER. McPherson County.

This is an interesting question. The yellow color of the plants may result from deficiency of nitrogen in the soil. If the nitrifying bacteria are present, this deficiency will be remedied by natural processes. If they are not present, they may be introduced from an old alfalfa field as explained in the KANSAS FARMER of May 16 on page 540. Whether bacteria introduced at the stage described by our correspondent will produce results soon enough for the needs of the plants is a question on which the editor has seen no experimental data. It is well worth trying, however.

The immediate wants of this young alfalfa can doubtless be relieved by a top-dressing of well-rotted barn-yard manure.

Our correspondent should make strenuous efforts to save this good stand of alfalfa and should certainly not fail to report through the KANSAS FARMER on the expedients tried and the effects of each.

The Campbell-Russell Sale of Herefords and Shorthorns.

At Bennett, I. T., on April 22 and 23, Mr. Campbell Russell held a sale of Herefords and Shorthorns which is unique in some features. A noticeable feature was the twenty Hereford and twenty Shorthorn yearling heifers which composed Class A of his competition breed test. The bidding for these was quite spirited and the prices received very satisfactory. In fact, this was one of the most satisfactory sales ever held in the South. Most of the animals offered were young but this did not prevent Col. Edmondson from securing good prices for them. The details of the sale are here given with the twenty Hereford heifers and the twenty Shorthorn heifers which composed the breed test placed first:

HEREFORD HEIFERS.

Table listing Hereford heifers with names and prices. Includes entries like Tille 5th, W. F. Choate, Choate, I. T. \$230; Cecil 2d, Green Taylor, Quinton, I. T. 250; Ring Dove, Green Taylor. 215; Karlotta 2d, C. Y. Semple, Coalgate, I. T. 520; Estelle 4th, H. A. Cummings, Hoyt, I. T. 350; Pride of the West 3d, Geo. W. Scott, San Bols, I. T. 400; Pansy A., H. B. Spaulding, Muskogee, I. T. 395; Ray 3d, H. B. Spaulding. 300; Pink 2d, Steve McDaniel, Hereford, I. T. 370; Pearl Rayon 3d, Steve McDaniel. 235; Princess Edward 2d, B. T. Fields, Checotah, I. T. 275; Charlotte 2d, James Keese, Carterville, I. T. 300; Modesty 2d, Steve McDaniel. 280; Maduria, H. A. Cummings. 270; Miss Darkey 3d, H. A. Cummings. 350; Bright Jess 4th, J. B. Salyer, Jonah, Tex. 400; Vesta 2d, B. T. Fields. 300; Tulip, T. A. Pender, Hoyt, I. T. 175; Alva 3d, H. B. Spaulding. 510; Florence 3d, Arthur Scott, Muskogee, I. T. 255; These 20 Hereford heifers averaged \$318.

SHORTHORN HEIFERS.

Table listing Shorthorn heifers with names and prices. Includes entries like Flora Duchess, Alex. Campbell, McLain, I. T. 365; Venus, W. H. Stewart, Hereford, I. T. 775; Susie Conquest, C. C. Bumbarger, Hereford, I. T. 350; Tamora 4th, B. T. Fields. 510; Helen Marr, W. H. Stewart. 275; Mary Twin Oak, Ben Cates, Hoyt, I. T. 635; Oakland Mary, Lee Scott, Muskogee, I. T. 350; Mary of Twin Oak 2d, H. B. Spaulding 410; Miss Rennick Aldrie 15th, J. H. Noble, Checotah, I. T. 350; Scotch Belle, C. C. Bumbarger. 750; Flora Love, J. H. Noble. 450; Miss Flora, Wm Stuart. 450; Rosa Belle, Lee Scott. 325; Scotch Lassie 2d, H. A. Cummings. 275; Drusilla, Famous Smith, Webbers Falls, I. T. 240; Future Benefit, B. T. Fields. 525; Lillie West, C. W. Garrett, Muskogee, I. T. 245; Silver Leaf, Ben Cates. 605; Moss Rose 2d, Lee Scott. 310.

Cherokee Rose, J. H. Noble. 500
The 20 head of Shorthorn heifers averaged \$419.75.

HEREFORD BULLS.

Table listing Hereford bulls with names and prices. Includes entries like Marmaduke, Jno. A. Martin, Starvilla, I. T. \$215; Wild Tom of Langdale, Z. C. Chambliss, Ocala, Fla. 100; Maple Leap Shadeland 23d, C. Y. Semple. 300; Maple Leaf Shadeland 31st, Newt Wickett, Hereford, I. T. 215; Maple Leaf Shadeland 26th, S. McDaniel. 250; Marc Anthony 2d, Green Taylor. 300; Zeno, Arthur Scott. 190; Cronje, Z. C. Chambliss. 125; Cherry Boy, T. A. Pender. 205; Photo, L. B. Harris. 3.0; Goodenough, Green Taylor. 375; 10 Hereford bulls averaged \$231.

SHORTHORN BULLS.

Table listing Shorthorn bulls with names and prices. Includes entries like Roan Lad, W. H. Stewart. \$150; Governor, Z. C. Chambliss. 125; Golden Chief, Joe Dyer, Quinton, I. T. 100; Colgate, W. W. Bray, Checotah, I. T. 170; Olin, Lee Scott. 160; Vestus Victor, H. B. Spaulding. 800; Duke of Twin Oak, J. D. Bench, Hoyt, I. T. 135; Oktaha, W. E. Gentry, Checotah, I. T. 125; Scottish Lad, W. F. Fields, Hereford, I. T. 135; Bridesman, J. L. Clark, Vian, I. T. 125; Oakland Lad, Lee Scott. 200; Shadeland, Wm. McClure, Texanna, I. T. 155; 13 Shorthorn bulls averaged \$209.

SHORTHORN COWS.

Table listing Shorthorn cows with names and prices. Includes entries like Dora, Lee Scott. \$700; Violet 6th, C. W. Garrett. 510; Birdie, Lee Scott. 575; Red Rose, C. W. Garrett. 500; Victoria 22d, J. D. Bench. 400; Princess of Padd's Run, Famous Smith. 330; 6 Shorthorn cows averaged \$502.50.

HEREFORD COWS.

Table listing Hereford cows with names and prices. Includes entries like Jess 6th, O. P. Brewer, Webbers Falls, I. T. \$500; Weston Lady, O. P. Brewer. 400; Weston Lass 15th, Alex. Campbell. 550; Silvia 2d, S. McDaniel. 395; Bertha, Ben Cates. 400; Beauty, Dr. W. H. Burke, McLain, I. T. 505; Minnie's Peach, S. McDaniel. 340; Agnes, James Keese. 350; Miss Minnie, Arthur Scott. 250; Patti 5th, Jno. A. Martin. 400; Varena 2d, Ben Cates. 205; Belle Aire, H. A. Cummings. 475; Hiawatha, Jno. A. Martin. 500; Grace A., Dr. W. H. Burke. 295; Stella 4th, L. B. Harris. 290; Judge Vann, Briar Town, I. T. 300; J. D. Bench. 235; 15 Hereford cows averaged \$388.35; Total average on 84 head, both breeds, \$340.70.

The Herefords at Sioux City.

A combination sale of Hereford cattle held at Sioux City, Iowa, on Friday, May 8, was well attended by breeders and cattle-men. The offerings by most of the contributors were away above the average in quality, though the prices realized were only moderate. The best bargain of the sale was the young heifer, Lady Emelie 4th, 160042, bred by W. W. Gray, Fayette, Mo., who sold very cheap at \$125. The contributors to the sale and their averages are as follows: C. A. Stannard, Sunny Slope Farm, Emporia, Kans., bulls \$96.25, cows \$160; Walter Crisp & Son, Dell Rapids, S. D., bulls \$75, cows \$85; C. G. Comstock & Son, Albany, Mo., bulls \$108.33, cows \$110.83; T. F. Ziegler, La Harpe, Kans., bull \$150, cows \$111.25; Steele Bros., Belvoir, Kans., bulls \$135, cows \$121.66; Gudgeon & Simpson, Independence, Mo., bulls \$176.25, cows \$181.66; Russell Motzart, Hawarden, Iowa, bulls \$81.66, cow \$90; R. C. Brown, Ireton, Iowa, bulls \$82.50; Edmonds, Shade & Co., Kingsley, Iowa, bulls \$145; W. W. Gray, Fayette, Mo., bulls \$149, cows \$140; Miss Lou Goodwin, Blue Rapids, Kans., cows \$225.

A New Job for the Colleges.

While our agricultural colleges in the main are doing nearly all they can with the means available it is unfortunate that they are giving so little attention to the important subject of farm engineering and farm mechanics. It is a broad one, covering numerous factors in farm operations. We do not happen to know of an institution that is making especial effort to help farmers in the economical construction of farm buildings including the best arrangement and the proper ventilation. This subject includes consideration of the various machines on the farm, ranging from the plow and harrow up to the gasoline, steam and electric motors; also irrigation and drainage, the use of cement for building sidewalks, walls, troughs, pots, stable floors and other purposes. How many of these subjects are receiving due consideration either by the agricultural college or experiment station at this time? In a hundred ways these colleges could be useful to the people if they would devote a reasonable amount of energy and means to these important features of farm work.

As competition grows keener in supplying the products of the farm their economical production must receive more and more attention. American genius has done world's for us in many particulars especially in machinery but there are lines of farm engineering which as yet have not attracted any particular attention from any particular people. These neglected lines should receive due attention both by the Department and the Agricultural Colleges. A course in farm engineering would materially strengthen the curricula of these institutions.—Breeder's Gazette.

The above is quoted from the Breeder's Gazette, and we publish it because it is valuable matter and because it is true; but at the same time we wish we had an opportunity to show the Gazette a man who wrote this article the magnificent plant and the excellent work being done with it along these lines at the State Agricultural College of Kansas. We doubt if there is another institution of the kind in the United States that has so fine an equipment in its mechanical departments as the Kansas institution, and we have never seen a commercial plant that would approximate it. We hope the article published by the Gazette and the examples

set by the Kansas college may result in the other institutions of the same class taking up this very important work and pushing it forward to its utmost possibilities.

Gossip About Stock.

The popular headquarters for stockmen who visit Kansas City is the Coates House. Direct car lines from the Union Depot and to the stock-yards. Whenever public sales of fine stock are held at Kansas City you can depend on meeting the crowd at the new Coates House. Special rates to stockmen.

In the dispersion sale of the herd of Holstein-Friesian cattle at Milwaukee good prices prevailed throughout, sixty head being sold for \$12,780, or the handsome average of \$213. One cow brought \$1,400, and the top for bulls was \$900. Buyers were present from as far east as Maine and as far west as California. Col. Carey M. Jones was the auctioneer, and performed his work in a highly satisfactory manner.

Mr. R. W. Park secretary of the American Galloway Breeders' Association, has issued a preliminary catalogue containing a list of the names of the officers and the rules, regulations, classifications and premiums of the National Galloway shows and sales to be held in connection with the American Royal at Kansas City, on October 19 to 24, and in connection with the International at Chicago in November 28 to December 5. This is a valuable catalogue of much interest to all Galloway breeders and of especial value to those who contemplate appearing in the show and sale-rings. Address R. W. Park, Live-Stock Record Building, Chicago, Ill.

That the Aberdeen-Angus cattle are appreciated and that they are growing in favor is hinted at by the combination sale recently held at the Chicago sale pavillion by Cantine Bros. & Stevenson, of Holstein, Iowa. At this sale forty-nine females brought \$18,780, average \$382.44. Two bulls brought \$1,165, average \$582.50. The fifty-one animals brought \$20,035, average, \$392.86. The top of the bull sale was brought by Imp. Malvollo, by Just Judge of Morlick, who sold for \$1,000; the top of the cow sale was brought by Imp. Princess D of Aucharachun, with a fine heifer calf at foot, though Pride of Aberdeen 113th was a close second. Kansas breeders can accomplish results like these if they get the right stock, and they can get the right stock here at home.

Gilbert Van Patton, president of the Nebraska Swine Breeders' Association, and owner of the Goldenrod Herd of Duroc-Jersey swine, Sutton, Neb., requests us to change his advertisement which appears on page 574 this week. He says he is busy now with his large and splendid crop of spring pigs, sired by Van's Perfection 11571, that he hasn't time to get to the post-office. Van's Perfection is proving himself a wonderful sire and his pigs are almost exact reproductions of himself. Mr. Van Patton is now booking orders for boars and at the rate the orders are coming in we suggest to our readers who want to secure some of the best of this good stuff that it would be very wise to get into correspondence with him at once. He is right near to town and will be glad to meet visitors at the railroad station.

The association sale of Shorthorn cattle held at Salisbury, Mo., on May 12, was characterized by a fairly good crowd, though the rain seemed to dampen their ardor. Forty-six Shorthorns were sold for \$3,525.50, average \$76.86. Twenty-three cows brought \$1,765.50, average \$76.98. Twenty-three bulls realized \$1,760, average \$76.74. The contributors to the sale were: E. H. Hurt & Son, Clifton Hill, Mo.; Jos. Combs, Linneus, Mo.; Mat McKinney, Cairo, Mo.; W. R. Slaughter, Salisbury, Mo.; W. E. McKinney, Cairo, Mo.; Thos. Huntsman & Son, Jacksonville, Mo.; Jos. Wangler, Salisbury, Mo.; C. W. Garhart, Salisbury, Mo.; Peter Vitt, Salisbury, Mo.; J. C. Nichols, Clark, Mo.; and J. G. Stocker, Roanoke, Mo. Our report shows that while the offerings were in fairly good shape, they classed as only medium in quality and were not as well fitted for the sale-ring as they might have been. Cols. J. W. Sparks, Marshall, Mo., R. L. Harrimon, Bunceon, Mo., assisted by Col. Sam. W. Kidd, Sedalia, Mo., and Harry W. Graham, Chillicothe, Mo., are credited with their usual high-class work in the ring.

The Wavergrace breeding establishment, owned by T. F. B. Sotham, Chillicothe, Mo., has issued a small pamphlet entitled "Prime Beef." This pamphlet is of special value to all breeders and feeders of beef-cattle regardless of the breed but more especially valuable to breeders of Herefords. It is written by one of the most experienced Hereford breeders in the United States and is illustrated by cuts showing typical bulls, cows, and steers, taken from the Wavergrace Herd. The first page shows Corrector 48976, Grace 58543, by Corrector, and the typical steer Sir Blanco, also by Corrector. These cuts are followed by others that have won State and National honors, including the champion steer Old Times which sold in the fall of 1900 for \$1.55 a pound, netting his owner \$2,392.92, and making him the highest-priced beef-animal in the world. Each page in the little pamphlet is devoted to a different subject and each subject is of direct personal importance to all breeders of Hereford cattle. Mr. Sotham has lately branched out in his operations and is now dealing in high-quality steers and feeding-cattle as well as continuing his operations of breeding the highest quality of breeding-cattle. He is now planning to hold his twenty-first annual sale at the Wavergrace Farm, Chillicothe, Mo., on Tuesday, Wednesday, and Thursday, June 2, 3, and 4, at which time he will offer fifteen pure-bred bulls, thirty-five pure-bred heifers, 1,500 high-grade steers and 500 high-grade heifers. This will unquestionably be an opportunity to make money. Mr. Sotham has arranged with the Chicago, Milwaukee and St. Paul Ry. to run trains every hour from 8 a. m. to 1 p. m., between Chillicothe and the Wavergrace Farm on saledays, and at the close of the sale each day special trains will convey the buyers from Wavergrace to Chillicothe. In addition to the attractions which this great sale will offer Mr. Sotham has prepared special entertainment for Tuesday and Wednesday

Tires \$3.98 Per Pair
Sterling Puncture Proof Tires are the best made. Constructed on puncture proof lines. No solution in them. Guaranteed for One Year. Complete catalog of tires from \$2.00 per pair up, sent FREE. Delaware Rubber Co., 668 Market Street, Philadelphia, Pa. Send for big Catalog.

evenings, which will be announced by the auctioneers and will help the buyers who stay throughout the sale to have an enjoyable time in addition to the pleasure they will derive from attending such a sale. A card to T. F. B. Sotham, Chillicothe, Mo., will bring the pamphlet on Prime Beef and the catalogue of the sale. Mention the Kansas Farmer when writing.

The Deering Division of the International Harvester Company of America is an institution that employs the highest art in presenting their printed matter to the public. They have just issued the Deering Corn Machine Annual for 1903, which is of distinct educational and historical value for the reason that it contains interesting and illustrated chapters on the early Indians and their methods of planting, cultivating and preparing corn as food. Other chapters are devoted to American discoverers and the early white settlers and their discovery of the value of corn as human and animal food. Methods of planting, cultivating and harvesting Indian corn before the invention of modern labor-saving machinery. These are followed by illustrated descriptions of the new way in which the modern labor-saving machines and their value in the corn-field are shown. These include the Deering corn-harvester, the Deering corn-shucker and the Deering shredder and husker and are of particular value to any farmer even though he may not use the Deering machinery. Should such be the case he will after reading this annual and seeing this machinery at work want to own a Deering-machine if he does not now. Write to Deering Harvester Co., Kansas City, Mo., for the annual.

Mr. C. E. Bartlett, Columbus, Kans., manufacturer of Bartlett's Lump-Jaw Cure, has issued a little pamphlet on the origin, treatment and cure of lump-jaw in cattle, which will be of immense value to cattle-raisers of the West. It is introduced by a very able article by Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, Department of Agriculture, Washington. This article gives a comprehensive statement of the causes, symptoms, appearance, prognosis, sanitary considerations and history of the disease, and is well worth reading as is any article from so eminent an authority as Dr. Salmon. Following this are careful directions about treatment and about the use of Dr. Bartlett's preparations for the cure of bone-spavin, curb, capped hock, bog spavin, ring-bone, splint and wind-galls in horses. This little book is free to all who mention the Kansas Farmer and write to C. E. Bartlett, Columbus, Kans.

Dilly Dally.

Dilly Dally was almost seven years old. See if you can guess why he came to have such a funny name!

"Oh, Oh, Dilly Dally! Where are you, dear? Run quickly with this pail to the grocer's, and get this full of molasses, and don't spill a bit. I want it for—well, no matter. I want it."

The molasses was for molasses candy. His mother had just remembered that it was his birthday.

Dilly took it, and ran out of the door. He was always quick enough at starting. His trouble came afterward. In the hedge by the garden gate he spied a yellow-breast, and heard a sweet note that made him stop and see what the leaves hid. That took a minute.

"Oh, I must hurry!" he said, and started again; but this time Mr. Toad hopped out in a friendly way to make him linger.

It was almost dark when he came in sight of home.

"O, Dilly Dally," said his mother, "where have you been all this time? It was your party; and all the little boys and girls I sent for had to go home, it grew so late. I had to cut the cake and give them all a piece, and there wasn't anybody to play games or anything. It was too bad!"

Wasn't it? Dilly thought so. A boy's birthday party without any boy to it!

"O, Dilly Dally," said his mother, sorrowfully, "why don't you earn a better name?"

Dilly Dally says he is going to. How do you suppose he is going to do it?—Sunbeam.

The unexpected always happens, but afterwards we wonder why it was unexpected. Be on the safe side, read the KANSAS FARMER and be ready.

For Farmers.

The Union Pacific Railroad is issuing Agricultural Bulletins giving complete and accurate reports of experimental work carried on in the States of Nebraska, Kansas, Colorado, and Wyoming. Also special bulletin on Alfalfa, Wheat, Corn, Beet Sugar, etc. Mailed free on application to J. Fulton, Depot Agent, Phone 34; F. A. Lewis, City Agent, 525 Kansas Ave., Phone 53.

The Young Folks.

Conducted by Ruth Cowgill.

GRAMPER.

Grandfather's old an' rheumatically some
Thick in his hearin' an' fallin' in sight;
Can't chew no more of his bread than the
crumb.
But he's a hustler, is gramper, all right.
Up an' a-comin' and chipper an' gay,
If he can't do a day's work he has found
He can be useful in many's the way—
'Fixin' an' patchin' an' putterin' round.
If there's a fence board that's anywhere
down
Gramper's on hand with a hatchet and
nail,
Drives the old mare in the buckboard to
town,
Solders the leak in the tin milkin' pail;
Cuts up the early pertaters fer seed;
Sees that the straps in the harness is
sound;
Does fer the wimmen folks all that they
need—
'Fixin' an' patchin' an' putterin' round.
Grandfather's old, but there's lots he can
do—
Busiest man on the homestead, you bet!
Done his day's work, but he ain't nowa-
days through,
Good for the chores of the eventide yet,
Rest time's a-comin', though; soon he
will sleep
Soundly enough in the cemetery ground.
But 'twill be lonesome. We'll miss him a
heap—
'Fixin' an' patchin' an' putterin' round.
—Chicago Daily News.

Wild Flowers of Missouri.

PRUDE B. UTLEY, PROSPERINE, MO.

For twenty years I lived in Kansas and during that time have come to know and love her wild flowers of the hills and valleys and wide-stretching plains.

The wild flowers of Missouri are different, but no less beautiful. I can give only a faint idea of their beauty by the use of pen and ink, and then only of natives of this locality.

Early in February come the tiny, four-petaled bluets, peeping through the leaf-mold, with a stem barely an inch long. Closely following them come the buttercups, shining as if varnished. Soon after we find the dog-tooth violet; and the spring beauties pushing up through the fallen forest-leaves on every sunny hillside. They are one of our favorites, as they carry their foliage well up on the stem, surrounding the dainty, blushing blossoms; thus making of every clump a veritable bouquet. Now come the violets, not only the Johnny-jump-ups, of which there are many (some few are yellow), but great, open-faced, pansy-like violets—on the hillsides, in the valleys, smiling up at you from the dusty roadside, tucked away by a stump or fallen log—everywhere you go you find them and they seem equally at home in all situations. There are all shades of blue and purple, but the ones most universally admired are the ones having the three lower petals of light blue and the two upper ones of deepest, velvety purple. Let no one think he has seen violets until he has been in the Ozark Mountains in April. In low moist places along streams, you will find the red poccoons with their white, waxen petals. Also, in this spot look about for May-apples with their larger, waxen flowers. Go nearer the bluff now and you will see the graceful sprays of wild bleeding-heart. I have also heard this called, little boys, Dutchman's breeches, and catchfly.

Spy more closely among the rocks, and you will discover many varieties of ferns, both fine-leaved and coarse ones; but best of all is the so-called winter fern which exactly resembles the Boston fern, which is grown in pots. It throws its long, graceful fronds out over the moss-covered stones, some of them traveling a yard in length. They seem to be at their best in winter when there is a light snow on them.

"Blue violets open their saintly eyes,
Red columbines bend and sway,
White star-flowers twinkle in beds of
moss,
And blooming they seem to say,
'We bring you the red, the white and the
blue,
To welcome Memorial Day.'"

But long before this time we have the shooting-star which is, in reality, a cyclamen, sweet-williams of different hues, larkspur of deepest blue, and the omnipresent verbenas.

But look up! there is a wealth of bloom overhead as well as at our feet. Therein the beauty of a wooded country exceeds the beauty of a prairie. First, in point of time, comes the red bud and the service-berry, which latter in this locality grows to be a tree. Then comes the dogwood, and who can portray the magnificence of a clump of dogwoods, 20 or 30 feet high, spreading out like an umbrella at the top and decked with thousands of the large, white blossoms, each one being

2 or 3 inches across! Such was my introduction to this lovely shrub one day last week. The black haw next claims our attention, each bush being a veritable snow-bank of bloom. Opening at the same time and generally growing near each other are found the haw and crab-apple. One enhances the beauty of the other; and when I first beheld a half acre or so of this mingled pink-and-white loveliness and got a whiff of the rare perfume of the crabs, I knew then why my mother has always held the wild crab-apple in such high esteem as an ornamental tree. The green tassels of oak-bloom, while strictly speaking are not wild flowers, yet they add much to the beauty of the scene. Later in spring the wild roses bloom. We have not only the eglantine, which grows along the roadsides and in fence corners, but the trailing or climbing rose which likes to grow up over a rail-fence and then flow down like a fountain of tender green and rose over the rails, entirely concealing them, until it reaches the ground. We have one in our doorway which is just as proud of its graces as if it were a Jacqueminot. Some of the runners are 6 or 8 feet long.

The trumpet vine, for which we once paid a dollar in Kansas, grows to the greatest perfection here in the woods. They generally run over a dead or decaying tree and cover it with their glossy leaves and brilliant trumpets.

I nearly forgot to mention the spider-lily, which grows in damp places along streams. It is a dainty porcelain blue in color. And the sensitive-plants, which are here called saw-briers. July gives us but few wild-lings and we are compelled to tide over the time with tame flowers, until August, when there comes golden rod and asters and a dainty sweet-pea. The creamy blossoms of the alder must not be omitted, and some varieties of sumac are quite showy. When the flowers have about done blooming, then the forest leaves begin to put on the gorgeous autumn robes, and then indeed, is the Ozark country a beautiful place to see.

A Traitor Disappointed.

We must own that all Americans were not true to their country during the War of the Revolution, and Washington had to guard against traitors within as well as foes without.

A man who lived not far from the English and American armies in New York, corresponded with the British general and promised to capture General Washington. He was to receive a large sum of money, and he intended to leave that part of the country as soon as his plan was carried out.

He appeared very friendly to the American cause, though he gave some good reason for not joining the army. He had business sometimes at the camp, and was always well received. When his plans were all made, he invited Washington to come one day to dine with him. "A short ride, General, and come by yourself," said he. "Don't come with a guard,—you know me,—you know you are safe in my house."

"Certainly," answered the General, and he meant what he said, but when he came to think the matter over, afterward, he thought it strange that he should have been urged to come alone, and although his host said that he wanted some private conversation with him, that did not seem a sufficient reason.

The day came and Washington came to dinner. The visit was a pleasant one, and the host made himself very agreeable. But as they sat talking when dinner was over, he began to grow uneasy. He walked about the room, he kept looking out of the window. Washington asked why he was so restless.

"Why," said the traitor, "I am expecting one or two friends—it must be nearly time for them to come."

The truth is, he was expecting a party of British soldiers to come, but he thought they would dress in such a uniform as the "Yankees" wore, so that when Washington saw them he would not take alarm.

"There they are," thought he. A little company of soldiers came in sight, rode rapidly up to the house, and surrounded the door. Several sprang from their horses and came into the house.

Washington rose. So did his host. He walked up to his guest and laid his hand on his shoulder.

"General Washington," said he "you are my prisoner."

"No," said Washington, "you are mine. I distrusted you, and I ordered these soldiers to follow me that I might be protected from whatever

plots you might have laid. And now," turning to the soldiers, "carry this false friend to the American camp."

The British party, seeing a larger company than their own on the road, had not ventured to come,—and the traitor learned by imprisonment, that it is better to be honest than to sell one's conscience and honor for money. —Pamela McArthur Cole, East Bridgewater, Mass., in Western School Journal.

Child Instincts.

Many ways of infancy and childhood seem to adults unnatural, and if children chance, as they frequently do, to exhibit tendencies animal rather than esthetic, we are apt to consider them such as to be properly frowned upon. Yet it might often contribute to one's equanimity if it were born in mind that child instinct, more frequently than reason, is in the right.

For example, the lusty fit of crying incident to the baby's bath, although it may prove annoying to the mother, is one of the best possible tonics for the infant. The vigorous respirations and increased activity of the muscular tissues conduce even more than the friction of the bath-towel to a healthful glow of the skin. The infant that is obstreperous enough to resent with loud crying its nurse's efforts to soothe it, until it is again in its flannels, is not likely to take cold from its bath.

Again, in the matter of eating, the child sometimes exhibits singular tendencies. From the time the child begins to come to the table until the period of youth, he often shows strong likes and dislikes. Just how such tendencies may be combated is perhaps of little moment, but in the quantity of food desired, each child should be a law unto himself. To bribe or coax a child to eat more than he wants is certainly not commendable. Many who, as children, are extremely "delicate" in their eating, develop in later life digestive organs of superior ability. Overfeeding is never so fraught with dangers as in childhood, and in those numerous cases in which the child instinct opposes the eating of as much food as is ordinarily regarded as normal, it should be respected. In the event of a small appetite being the evidence of impaired vitality or disease, other concurrent symptoms will be so evident as to lead to consultation of a physician. Glowing cheeks and sturdy limbs are admirable, and a delight to fond parents, but to many children they are simply not natural, and no amount of food can produce them.

In many children nature exhibits a conservative tendency, and the scrawny limbs and sallow cheeks may be an indication of conserved energy by virtue of which some organ or organs may not be overtaxed during the growing age.

The diseases of childhood often result in temporarily damaged organs, which time and a following of the instincts of preservation which nature imposes, may overcome. Thus it is that many children, regarded throughout childhood as delicate and not likely to survive till adult life, not only reach manhood and womanhood, but attain qualities of extraordinary physical or mental vigor.

It is well to realize that very rarely are there two children, even in the same family, similar in their physical equipments, and that therefore no "rule of thumb" method of rearing them is ever eminently successful.—Youth's Companion.

A True Story.

Mama was sitting at the kitchen window sewing. The kitchen window was mama's favorite seat; for there she could look a long way off. Down through the orchard, across the low meadow lands, then over the river to the city beyond. And back of that were long lines of hills, and miles away in the distance rose a high mountain peak that looked on cold spring days like a great white cloud against the sky.

So mama was sitting by the window, busy with her work, when suddenly the outside door flew open and a troop of noisy children came bursting into the room, all crying in a breath: "O mama, mama, do come out to the barn and see 'George Washington' play 'hide and coop.' It's just the funniest thing! Do, please, mama!"

How they swarmed about her chair and what a soise they made! Mama clapped her hands over her ears to shut out the din.

"Mama's going crazy," said the thoughtful one. "Now all be quiet and let one tell."

"No, no! don't tell!" The others cried excitedly, "That'll spoil all the fun." "Come out and see mama, he's

A woman has used a lamp chimney of mine for fourteen years.

What a jolly good time she has had!

My name on every one.

If you'll send your address, I'll send you the Index to Lamps and their Chimneys, to tell you what number to get for your lamp.

MACBETH, Pittsburgh.

such a dear!" "You'll just die a laughing, I know you will," and chattering like magpies they half led, half dragged mama to the barn.

"Now stand right there, don't move, mama, just watch and see what he does; you blind Bob! no peeking!" and bubbling over with merriment the children scampered away to hide, and Bob rolled his head up, like a bundle, in the horse blanket.

"George Washington" was a dear little woolly lamb. Born the twenty-second of February, he had been named by the children, and was, as they expressed it, "the very dearest thing on the farm."

He stood now, in dignified silence, in the middle of the barn floor, his great, beautiful eyes following the children closely, and his funny little tall quivering to and fro, as though he, too, were anxious to be off.

Soon a faint "coop" sounded from a corner of the barn. Bob's head came out of the blanket. "Come on, Georgie," he shouted, "show me where they are. Find 'em, Georgie, find 'em!" And Georgie, his dignity forgotten, with wild ma-a-a-ing and kicking his heels in the air, darted away with Bob after him.

Right across the barn he went, and under the farm-cart, where a small boy was vainly trying not to laugh.

"You're found! you're found!" cried Bob, dragging his brother out. "Hurrah for Georgie!" But "Georgie" did not wait to be praised.

Ma-a-ing at the top of his little lungs, and capering up and down in the wildest way, he scampered off, the two boys in hot pursuit.

Away to the haymow he raced, and lamb and boys soon dug out another hider. And so he went from one hiding-place to another, while mama sat on the meal chest and laughed until she cried at his funny antics.

When the last child had been found, then with shouts and laughter and repeated huggings "Georgie" was led to mama to be praised.

"Wasn't that funny?" "Did you ever see such a smart lamb in all your life?" "Aren't you glad you came out?" were the questions showered upon her, and mama had to own, that it certainly was very funny, and that she thought George Washington quite worthy of his name.—K. M. M., in Massachusetts Ploughman.

About the Wild Flowers.

This very interesting contribution about wild-flowers comes from Missouri. Does it not seem that Kansas young people are neglecting an opportunity to toot a horn for their State? And we have many readers in Oklahoma, also; why do some of them not tell us of the beautiful flowers there? It would be very interesting—would it not?—to have a description from several States, of their wild-flowers. At least, do let some young Jayhawker tell about our prairie beauties, from the delicate violet to the bold sunflower. We shall expect, soon, an article upon "the wild-flowers of Kansas," and we shall hope for one from our neighboring States.

We have received frequent requests for poems, which we are very glad, indeed, to supply. One or two of them, however, we are unable to find. If any of our readers can furnish either of them, we shall be greatly obliged, as will also the readers who have asked for the poems. One is "The Actor's Story," the other, "Saint Peter at the Gate." We should be very grateful for your assistance in this matter.

For the Little Ones

MY CAT AND MY DOG.

I have a cat, she's as black as my hat, Fur fifty finer than silk, And whate'er is occurring, she always is purring, Especially over her milk.

And I have a dog, too, a wonderful dog, Nobility beams in his eye; And early or late for his master he'll wait, None such friends as dear doggie and I.

His dear honest nose he shoves into my hand, Yet growls if a rogue comes in view; And his great wagging tail makes one quite understand He's a watchman both fearless and true.

A trio of jolly companions are we, Together we pleasantly jog; Indulge in no riot, but live very quiet, Myself and my cat and my dog.

-Geo. M. Lomas.

"Me and Dan."

BY EDGAR L. VINCENT, MAINE, N. Y.

They came bounding down through the yard, Dan leaping about his little friend, his great tongue far out and his mouth, wide open in the plainest dog-laugh you ever saw, and Meta just running over with joy at the sport she was having with her playfellow.

"Get off those flowers? What are you doing here, anyway? This isn't your yard. Go home and stay there, will you!"

Then there was another swift blow which sent Dan scudding far up toward the house, and Meta saw that they had in their play gone over the imaginary line forming the boundary between the yard of her own home and stepped on the well-kept lawn of their neighbor on the right.

"You're an awfully mean man!" burst from Meta's lips before she fairly thought what she was saying.

"Well, you did, and you let him roll them all down flat! You're the one that ought to be ashamed. You would if you had had any bringing up."

The man was trying to straighten the plants up now, but Meta could see that he was terribly angry at the injury done to his precious flowers.

Across the lawn came Dan again now, standing by the side of Meta, now looking up at his little mistress with a look on his face that seemed to say, "It was my fault, Meta, so don't you care," and now looking over toward Mr. Chase, wagging his tail in the endeavor to assume a friendly attitude.

And Dan took a step or two, now, toward Mr. Chase, very carefully, as if to see what would come of it. Still another, and finally he sprang clear over to the man's side and with mighty wags of his tail did his best to make friends again, with the one he had angered so much.

The little girl without another word turned and together they walked up to the house. On the porch she sat down and gathered Dan's great head under her arm and comforted him as well as she could.

There the mother found them. She saw that something had happened to make them both unhappy. She did not need to ask what was the cause of so much evident trouble, for Meta began fiercely:

"Mama, what do you think about a man that would strike Dan?"

"Strike Dan? Who did it?"

"That ugly man over there, Mr. Chase. He hit him just as hard as he could, and Dan wasn't looking, nor I either."

"Did this make it worse, mother wondered.

"You will need to tell me about it before I can answer that, Meta." And mother sat down on the step beside her daughter and listened to the story.

"Why, me and Dan were playing and accidentally went over there. Some way Dan got on the flowers; but I don't believe he hurt them half as bad

as the man did Dan. He struck him so hard!"

Meta hugged the dog's head again lovingly, while Dan met the look Mrs. Dent gave him so frankly that she said:

"Dan doesn't really look as if he meant to do anything wrong. But of course he ought not to have injured the flowers. We will try to make it all right, though. We can not let Mr. Chase think we do not care that his lovely flowers have been trampled. You told him you were sorry, did you not?"

Meta quickly answered, "No, mama, I didn't, because I wasn't."

Here was a more serious difficulty. Bad enough to have crushed the flowers. How much worse not to be sorry for it! A serious talk followed, but at its end Meta still felt sure that nothing could be done to heal the wound Dan had received at the hands of this angry man. So Mrs. Dent went away saying, "You and Dan must think this over yourselves. I feel sure you will be sorry by and by—as sorry as Dan is now."

They watched Mr. Chase working away to repair the damage to the bed of flowers a long time. Now his impatience had disappeared and he seemed almost to have forgotten what had brought about the trouble of the morning. But the blow he had struck Dan still hurt the heart of his little mistress too sorely for her to overlook the cruel act.

But some way the joy had fled out of the day. Meta was sorry she had said what she did to Mr. Chase. Dan did not seem to mind the blow he had been given and once more he invited her to a romp over the yard. This was a thing she could not think of doing now, however. Her heart was beginning to be very sore over the whole matter.

"I can't play now, Dan," she said. "I don't feel a bit like it. You and I have not been good and I know it just as well as you do now. But what can we do to make it right?"

An hour later and the problem had been solved. Among the plants on the stand under the porch was one that Meta had called her own. She had taken it as a slip from one in her grandmother's yard, put it in a little vase until the tiny roots had started and then planted it in a jar of earth which she herself dug from a rich place behind the old barn. She had watered the plant and watched it all so carefully ever since, and it seemed dearer to her than all the rest in the world.

That afternoon Meta stood looking at the flower very longingly. Could she do what she had in mind? She loved the pretty thing "almost as much as I do you, Dan!" she declared, with her hand on the dog's silky head. "But I'm going to do it. You must go with me, Dan. I can't do it alone."

She quickly stooped and picked the plant up and hurried across the yard to the door of Mr. Chase.

The gentleman came to meet them himself. Meta wondered where the stick was that he had struck Dan with. Would he bring it again now?

"Dan and me are sorry!" she began, her eyes fastened on the flower she held in her arms. "Dan didn't mean to do it, but I was mean and cross to you. We want you to have this flower. It's the only thing I have that you would like, I guess. We tried to think about that, and couldn't think of anything else."

Mr. Chase was smiling now. "But you mustn't do that, child. I do not want the flower nearly as much as you do. Take it back."

But Meta set the plant down on a bench near by and stood gazing at it lovingly. She was trying hard to be brave in her sacrifice.

"We want you to have it—Dan and me. Just to show that we are sorry." Then she turned up her face into that of Mr. Chase. "But you are not angry with Dan now, are you? You wouldn't strike him like that again, would you?"

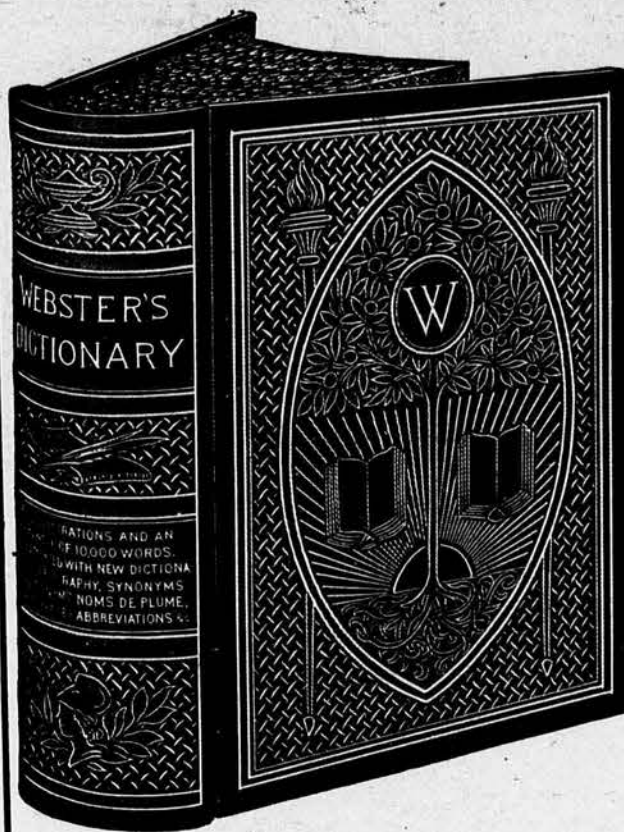
A mist of tears was in Mr. Chase's eyes now. He stooped and gathered Meta in his arms.

"It has been a very unhappy day to me, as well as to you, little girl. I have been ashamed that I was so angry and that I struck poor old Dan. He was better about it than I was. He forgave me before I did him, and now you have done even better than Dan. No, I am not angry with Dan, and I want you to tell me you are my friend, as well as Dan. Will you say it?"

And Meta did. Then she went bounding homeward with Dan at her side. The sunshine had come into the day again.

One day a plant more lovely than any Meta ever had dreamed of came

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to the house. A card fastened to the stalk told her that it was the gift of Mr. Chase. On the other side was this sentence:

"Tell Dan about it too, for he has a bigger heart than the man who struck him!"

A little while after that a bright new collar came across the lawn for Dan. On its shining band were the words, "Our Friend, Dan."—The Advance.

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The Home Circle.

Conducted by Ruth Cowgill.

THE SONS AND DAUGHTERS OF TOIL.

They have known the heat of the furnace,
And the muscles that ache from pain,
They have borne the cares and perils,
And sore is their hearts' refrain.
The years have their joys and their sorrows,
And life is a long turmoil,
But they look in vain for succor,
These sons and daughters of toil.

They crown her with shadowy grasses,
She wields a sceptre of corn,
O'er the length of the fresh-plowed furrows,
In the calm of the dewy morn,
But when dusk falls calm and peaceful,
After the day's turmoil,
They find that rest comes not with sleep,
These sons and daughters of toil.

Since the days when straying from Eden,
Away from the sword of flame,
The Edenic pair first wandered,
Clad in their fig-leaves' shame,
To subdue the earth is our birthright,
And our fate we may not foil,
The curse of our father is falling
On the sons and daughters of toil.

No more at the gates of Eden,
The Covenant Angel stands,
No longer flames from the sunset,
The flash of his fiery brand,
But a mightier sword is suspended,
When the sun stirs the serpent's coil,
And we follow the weary treadmill round,
We sons and daughters of toil.
—Mrs. W. V. Tompkins, Prescott, Ark.

The Toiling of Felix.

Some years ago a party of English explorers were delving among the rubbish of an ancient city when they came upon a fragment of an old book of papyrus, which had been written in the Second or Third Century. Upon a leaf of the book were seven short sentences, each beginning: "Jesus says." They are supposed to be the words of Jesus spoken while he was upon the earth. The fifth one was this: "Raise the stone and thou shalt find Me; cleave the wood, and there am I." Harry Van Dyke has taken these words as a motive for a poem, beautiful in thought and rhythm.

"Listen, ye who look for Jesus, long to see Him close to you,
To a legend of this saying; how one tried, and found it true."

The tale is of a young man who longed to see the Master; who studied all the holy books and creeds; who fasted and prayed, living alone in silence and devotion. But still came no vision of the Lord. At last he sought a hermit, who placed in his hand the words, "Raise the stone and thou shalt find me; cleave the wood, and there am I." Disappointed, but obedient, he took upon himself the life of toil.

Not for him a sacred dwelling, far above the haunts of men:
He must turn his footsteps backward to the common life again.
From a quarry by the river, hollowed out below the hills,
Rose the clattering voice of labor, clanking hammers, clinking drills.
Dust, and noise, and hot confusion made a Babel of the spot:
There, among the lowliest workers, Felix sought and found his lot.
Now he swung the ponderous mallet, smote the iron in the rock—
Muscles quivering, tingling, throbbing—blow on blow and shock on shock.
Now he drove the willow wedges, wet with their silent strength, the fragment—sent it thundering down the pit.
Now the groaning tackle raised it; now the rollers made it slide.
Harnessed men, like beasts of burden, drew it to the river-side.
Now the palm-trees must be riven, massive timbers hewn and dressed—
Rafts to bear the stones in safety on the rushing river's breast.
Axe and augur, saw and chisel, wrought the will of man in wood:
'Mid the many-handed labor Felix toiled and found it good.
Every day the blood ran fleeter through his limbs and round his heart;
Every night his sleep was sweeter, knowing he had done his part.
Dreams of solitary saintship faded from him; but, instead,
Came a sense of daily comfort, in the toil for daily bread.
Far away, across the river, gleamed the white walls of the town
Whither all the stones and timbers, day by day, were drifted down.
There the workman saw his labor taking form and bearing fruit,
Like a tree with splendid branches rising from a humble root,
Looking at the distant city, temples, houses, domes and towers,
Felix cried in exultation: "All the mighty work is ours.
Every mason in the quarry, every builder on the shore,
Every chopper in the palm-grove, every raftsmen at the oar—
Hewing wood and drawing water, splitting stones and cleaving sod—
All the dusty ranks of labor, in the regiment of God,
March together toward His triumph, do the task His hands prepare:
Honest toil is holy service; faithful work is praise and prayer."
So through all the heat and burden Felix felt the sense of rest
Flowing softly, like a fountain, deep within his weary breast.

Felt the brotherhood of labor, rising round him like the tide,
Overflow his heart, and join him to the workers at his side.
Oft he cheered them with his singing at the breaking of the light,
Told them tales of Christ at noontide, taught them words of prayer at night.

So he felt the Master's presence drawing closer all the while:
Though the Master's face was hidden, yet he knew it wore a smile.
Once he bent above a comrade fainting in the mid-day heat,
Sheltered him with woven palm-leaves, gave him water, cool and sweet.
Then it seemed, for one swift moment, secret radiance filled the place;
Underneath the green palm-branches flashed one look of Jesus' face.
Once again, a raftsmen, slipping, plunged beneath the stream and sank.
Swiftly Felix leaped to rescue—caught him, drew him toward the bank—
Battling with the cruel river, using all his strength to save—
Did he dream? or was there One beside him walking on the wave?
Now at last the work was ended; grove deserted, quarry stilled,
Felix journeyed to the city that his hands had helped to build.
In the darkness of the temple, at the closing hour of day,
Once again he sought the altar, once again he knelt to pray:
"Hear me, O Thou hidden Master; Thou hast sent a word to me;
It is written—Thy commandment. I have kept it. Look and see.
Thou hast bid me leave the visions of the solitary life;
Bear my part in human labor; take my share in human strife.
I have done Thy bidding, Master; raised the rock and felled the tree;
Swung the ax and pled the hammer, working every day for Thee.
Once it seemed I saw Thy presence through the bending palm-leaves gleam;
Once upon the flowing water—nay, I know not—'twas a dream.
This I know: Thou hast been near me: more than this I dare not ask.
Though I see Thee not, I love Thee. Let me do Thy humblest task!"
Through the dimness of the temple slowly dawned a mystic light;
There the Master stood in glory, manifest to mortal sight:
Hands that bore the mark of labor, brow that bore the print of care;
Hands of power, divinely tender; brow of light, divinely fair.
"Hearken, good and faithful servant, true disciple, loyal friend!
Thou hast followed Me and found Me; I will keep thee to the end.
Well I know thy toil and trouble. Often weary, fainting, worn,
I have lived the life of labor, heavy burdens have I borne.
Never in a prince's palace have I slept on golden bed,
Never in a hermit's cave have I eaten unearned bread.
Born within a lowly stable, where the cattle round Me stood,
Trained a carpenter in Nazareth, I have toiled, and found it good.
They who tread the path of labor follow where My feet have trod;
They who work without complaining do the holy will of God.
Where the many toil together, there am I among My own;
Where the tired workman sleepeth, there am I with him alone.
I, the peace that passeth knowledge, dwell amid the daily strife;
I, the bread of heaven, am broken in the sacrament of life.
Every task, however simple, sets the soul that does it free;
Every deed of love and mercy, done to man, is done to Me.
Thou hast learned the peaceful secret; thou hast come to Me for rest;
With thy burden, in thy labor, thou art, Felix, doubly best.
Nevermore thou eedest seek Me; I am with thee everywhere;
Raise the stone and thou shalt find Me; cleave the wood, and I am there."
The legend of Felix is ended, the toiling of Felix is done;
The Master has paid him his wages, the goal of his journey is won;
He rests, but he never is idle; a thousand years pass like a day,
In the glad surprise of that Paradise where work is sweeter than play.
But I think that the King of that country comes out from His tireless host,
And walks in the world of the weary, as if He loved it most;
For here in the dusty confusion, with eyes that are heavy and dim,
He meets again with the laboring men who are looking and longing for Him.
He cancels the curse of Eden, and brings them a blessing instead:
Blessed are they that labor, for Jesus partakes of their bread.
He puts His hands on their burdens, He enters their homes at night:
Who does his best shall have as his guest the Master of life and light.
And courage will come with His presence, and patience return at His touch,
And manifold sins be forgiven to those who love Him much;
And the cries of envy and anger will change to the songs of cheer,
For the toiling age will forget its rage when the Prince of Peace draws near.
This is the gospel of labour—ring it ye bells of the kirk—
The Lord of Love came down from above, to live with the men who work.
This is the rose that he planted, here in the thorn-cursed soil—
Heaven is blessed with perfect rest, but the blessing of Earth is toil.

The Housewife and Her Work.

The daily life of the housewife whether in country or town, has much or drudgery in it, much that is distasteful, much that is monotonous and wearisome. That this is true, no one attempts to deny. Yet there is in it, also, a possibility for the greatest happiness, the greatest satisfaction over a necessary service well done. For the work—industry, if you care to call it so—of managing a household and performing the daily tasks, is the most

beautiful duty a woman can encounter, because it is the most essential to somebody's comfort and welfare. There is nothing so absolutely disheartening or so distasteful to a self-respecting woman, as the consciousness of being useless. There is no joy in doing any kind of work merely for the work's sake. There is nothing so essentially disagreeable as a life of ease with no real labor in it. And nothing brings it own reward so surely and so deliciously, as work well done for the comfort or pleasure of somebody one cares for. What is the reason why there are so many happy, contented women in the country—for there are many, as I know well? And though there are many, also, who feel dissatisfied and who feel that their work is too heavy for their strength, yet that does not prove that the fault is in the kind of work—for you will find people who feel just so, in almost any occupation. But let us learn to think of our work, whatever it may be, as a duty high and holy, which only ourselves, each in his own small corner of the great world, can do. No one could take your place in your home, rear your children, comfort your husband, manage your household, as you yourself do, faulty and weak though you may feel yourself to be. Let us never forget that, nor lose the inspiration of the thought.

Miss Van Rensselaer writes, in *Home and Flowers*, very interestingly on this subject.

"It is very easy for us to propose beautiful and inspiring thoughts when the health is good, the outlook is fair for a moderate amount of work and an income large enough upon which to live, but the halo which we would cast about the kitchen sink, the mop, and the stew-pans dies away when when we are brought into too close and constant contact with them. Still, work is the more effective for belief that there is a halo to be found, and the habit of attending to the duty near at hand and looking forward to better days.

"The darker the way the more light we need. It may be hard to keep it burning but it must be had. The easy pathway without any obstacles does not develop strength. Our strongest men and women are those who have tried their strength and won. Women working in a household with nothing but the humdrum of life presenting itself from day to day are living heroic, noble lives, which, while it may not make them illustrious, wins for them a strength which has made wonderful mothers of great men and women. Taken away, their life battles and weakness would have been the inheritance of these children.

"The men and women who seem to have less drudgery and less care are fighting their own battles in the busy and professional world. The brain-worker and the man who carries heavy financial responsibilities have larger worries than those who toil simply by hand. There is no doubt that every person, no matter how hard his daily task becomes, must keep always ahead of him the desire for the life beautiful. What one needs to do in this case is to fold the hands occasionally, relax and rest, and say, 'I have done the best I can, I have nothing to worry about; everything will come out all right.' There is no place where this is more necessary than in a kitchen where work drives from morning till night. If any one on earth will be taken care of and the struggle made easy to endure, it is the woman who carries the burden of rearing children, and who strives to keep up the work in a home. It is just such mothers whose children have had success. Who can say but that the greatest heroism is in the life of the mother in her quiet, uneventful, but busy life? It would seem that the flowers were made to bloom, the hills were made most beautiful and the valleys most peaceful for just such persons, rather than for those whose lives are so easy that they need less the comforts of a beautiful world."

St. Vitus's Dance.

The name of St. Vitus's dance was originally given to a form of hysterical convulsions, of which history records many epidemics in the Middle Ages; but it is now popularly used to denote a milder form of irregular muscular movements, called in medical parlance chorea.

The disease chiefly affects children, and almost always those who are anemic and "run down" in health by long hours of study, insufficient or improper food, lack of out-door exercise, sleeping in poorly ventilated rooms, or who are convalescing from some acute fever. It is so frequently associated with rheumatism that some



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physicians believe it to be only one of the manifestations of that malady.

The first signs of the approaching trouble are usually seen in a change of disposition. The child becomes irritable and ill-natured, neglectful of its studies and indifferent to play. The appetite is poor and capricious. Candy, pickles and slatepencils are preferred to roast beef and potatoes, and the nights are restless and disturbed by terrifying dreams.

After a period of this distressing state in which the parents hardly know whether the child is sick or only naughty, the muscular twitching begins in one arm or the face. The eyes wink, the corner of the mouth is drawn up, the head is pulled to one side or backward, the shoulder is shrugged, the arm is bent or straightened irregularly, the hand jerks so that objects held therein may be thrown across the room.

These movements are without any regularity whatever. Often no two are alike. They vary greatly in degree and extent, from a slight jerk of one or two muscles or a grimace of the face to uncontrollable convulsions of the entire body.

The foundation of the treatment is tonic and unbuilding. The child should be tempted to eat good, nourishing food with an abundance of milk, cream and butter. He should spend long hours out of doors, and should sleep in a room with open windows, under watch, if necessary, through the night to see that in his thrashing about he does not throw off the bed-clothes, although usually the movements cease during sleep. In all cases the treatment should be conducted under the guidance of a physician.—*Youth's Companion*.

To Keep the Hair Healthy.

Don't brush the hair only. Brush the scalp until it glows.

Don't brush the hair roughly. Let the motion of the hand be light and gentle.

Don't brush the hair in any other direction than the way in which it grows.

Don't think that you must not brush the hair because it is falling out.

As a rule, don't wash the hair oftener than once a month. Too frequent washing makes it dry.

Don't use too much soap, borax or soda when taking a shampoo. Substitute yolk of egg. If the hair is naturally oily, use only the white of the egg.

Don't fail to rinse with clear water and to rub in a little oil after a shampoo.

Don't rub the hair briskly with towels after washing. There is danger of breaking the long hairs. Absorb the moisture carefully with warm towels.

Don't neglect daily massage of the scalp with the tips of the fingers dipped in cold water; use a clean nail-brush.

Don't fail to apply a tonic to hair and scalp at least once a week.

Don't use a course brush, but one that has long, fine, unbleached and undyed bristles.

Don't buy a cheap dressing comb. It

pays to buy a good flexible tortoise-shell comb, even if you must do with one dress the less during the year. Don't wear the hair always in the same style. A change of mode is beneficial. Don't tie the hair, or roll or twist it in any way tightly. This strains the roots of the hair, and is very injurious. Don't use many hair-pins. If each pin is made to do its duty, and the hair is arranged to fit the head, few pins will be needed. Don't use metal or wire hair-pins of any kind. They are ruinous to the hair. Use shell or imitation shell of medium size.—N. Y. Sun.

Club Department.

Cullus Club.

Cullus Club, Pittsburg, Kans., was organized November 8, 1902, for the purpose of mutual benefit, a course of study and social enjoyment. The motto adopted was, "Ab Origine Semper Paratus," and each member has tried to follow the motto exactly. The club colors are purple and yellow with the pansy for the flower. The course of study for the years 1902-'03, is the "United States," with essays on different topics, and current events. They also have music and parliamentary drill. Their musical numbers are among the very best. Each member who appears on the program for a "paper" thoroughly prepares her topic and the result is something of interest. In the arranging of programs they sometimes adopt one theme, for instance, the program for February 27, 1903, was:

- Roll Call—Plantation Pleasantries.
- Music—Negro Melodies.
- History—1863-1865.
- Reading from Paul Lawrence Dunbar.
- Characteristic Sketch.
- Paper—"The Sunny South."

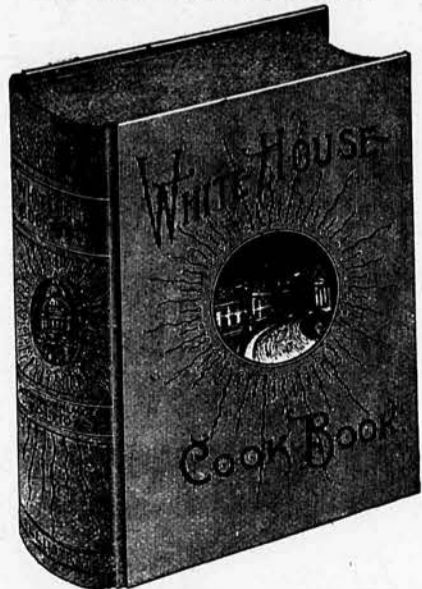
They find a little nonsense now and then to be quite entertaining. For another program, May 8, 1903, in contrast to the one above, they have:

- Roll Call—Prominent Editors.
- Music.
- "Our New Possessions. (Physically, Mentally, Morally, Geographically.)"
- "Discoveries of the Year."
- Three minutes talk on Literary Chat.
- Music.
- Criticism.

The lessons in history beginning from 1492 up to the present time have been thorough and each member has enrolled in the club-work for the purpose of work and not all play. The club being yet in its infancy, they have not accomplished much as yet, but, building for the future, they expect to do something beneficial in club-work. All the members are in unison of purpose and can say that, so far, the club has been a benefit to each one. They have an excellent presiding officer, and expect to retain her for another year. The last meeting of the club will be June 5, 1903. Then committees will be appointed to arrange programs for the coming year.

The programs are printed in neat booklet form in the club colors. The club work will begin again about October, 1903, and close in May or June, 1904. The "Cullus" numbers twenty-two members, and having no rooms of their own they meet at the homes of the members. All feel quite enthusiastic.

Our Great Cook Book Offer.



The White House Cook Book, 590 pages, comprehensive treatise on carrying. All kinds of cooking and baking. Everything from soup to nuts. Cooking for the sick. Health suggestions. Kitchen utensils. Family rec-

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\$25.90 BUYS OUR EMPRESS TOP BUGGY, exactly as illustrated, complete with top, back and side curtains, cushion back, carpet, anti-rattlers and shafts; a thoroughly reliable end spring top buggy. **THE VERY LATEST STYLE FOR 1903.**

\$28.75 BUYS OUR SUMMER BEAUTY LEATHER QUARTER TOP BUGGY, exactly as illustrated, full leather quarter extension top, full length side and back curtains, panel back, piano body, and springs. Sarven's patent wheels, everything complete, including shafts.

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\$31.75 BUYS OUR BIG ROAD KING COMBINATION HALF PLATFORM SPRING WAGON exactly as illustrated, complete with two seats, full spring cushions and backs, including shafts.

TEN DAYS' FREE TRIAL. WE SHIP VEHICLES ON TEN DAYS' FREE TRIAL, with the understanding and agreement that if you do not find them better in quality and lower in price than you could buy elsewhere, return the rig to us at our expense and you are not put to one penny's expense. Is one of the **OUR INDIANA BUGGY FACTORY LARGEST** IN THE WORLD, and our low prices on all kinds of vehicles, open and top buggies, road wagons, runabouts, surreys, phaetons, carriages and other vehicles will surprise you. Our Prices Barely Cover the Cost of Material and Labor, with but Our One Small Percentage of Profit Added. **WE CAN MAKE IMMEDIATE SHIPMENT OF ANY RIG.** **WE CAN** MAKE IMMEDIATE SHIPMENT OF ANY RIG, and our FREE VEHICLE CATALOGUE explains how we make the freight charges very low by shipping from Minneapolis, Omaha, Kansas City or Des Moines. **Address, SEARS, ROEBUCK & CO., Chicago, Ill.**

ipes. Toilet items. Dyeing and coloring. Measures and weights, etc. Prepared by the former chef of the Hotel Splendide, Paris. Regular price \$2. Our price with the KANSAS FARMER for one year \$2. The two for the price of one, delivered to you. Address, Kansas Farmer Company, Topeka, Kans.

Sugar-Beets for Feed or for Sugar.

For some years past there has been more or less interest taken in the possibilities of sugar-beet culture in Kansas and the Southwest. Aided by State bounties and by the climatic and soil conditions which have proved so favorable, many farmers in western Kansas and Nebraska have made somewhat extensive plantations of sugar-beets. The loose nature of the soil and the bountiful supply of sunshine have served to aid these beets in developing satisfactory size as well as a good sugar content, and have aroused hopes in the minds of the growers that big returns await them when they market their crops at the sugar factories. Inquiry in the dairy sections of Kansas, which may be included in the Sixth and Seventh Congressional Districts, develops the fact that the sugar-beets are extremely profitable as a crop, but most so when fed to their cattle. If it be necessary to market the beet crop at a sugar factory, the farmer finds himself up against a proposition which requires the hauling of heavy loads from a greater or less distance from his farm with a somewhat uncertain result when they are delivered.

Like any other proposition of this kind, the market for beets when furnished to a factory is sure to vary and the anticipated returns from their sale may not be realized. On the other hand, if these beets are fed to cattle, especially to milch cattle, the cash returns are good and sure. Farmers who have experimented along this line bear testimony that the interest in sugar-beet raising which has lately been excited has proved a good thing for them in showing them the immense value to be derived from sugar-beets when used as a winter feed for cattle.

These observations have lately been confirmed by the testimony of Prof. Ed. Webster, who, in pursuit of his duties as dairy expert for the Department of Agriculture, has traveled over western Oklahoma, western Kansas, and western Nebraska, and, judging from our own observations, confirmed as they are by those of Professor Webster, we express the belief that the sugar-beet has made for itself a permanent place in dairy husbandry which will grow more important as the years go by.

The Iowa Scholarship Prize.

Prof. C. F. Curtiss, Dean of Agriculture of the Iowa Agricultural College, notifies us that the State Department of Agriculture has taken a very commendable step in offering a \$200 scholarship prize to the winner of a proposed stock and corn-judging contest to be held in connection with the Iowa State Fair. The prize will be a cash payment made at the rate of \$25 per month until \$200 has been reached to

the boy under 21 years of age residing in Iowa who has not already matriculated in the agricultural course of the State Agricultural College and who will use his prize as a scholarship in that course. The rules governing the awards require that each contestant shall write his decision placing the first three animals and the first three samples of corn and giving his reasons therefor. The contestant's reports in the stock-ring will be graded on the basis of 100 points, 55 of which shall be allowed for placing, and 45 for reasons substantiating the placing.

In the corn contest it is required that each contestant shall bring one ear of corn and that he shall then be required to pass upon two varieties of corn of ten ears each, placing the ears, 1st, 2d, 3rd, etc., giving reasons substantiating the same. His work in the corn contest will also be graded on a basis of 100 points, 40 of which shall be allowed for correctness of placing, 30 for the best ear received from the contestants and 30 for reasons substantiating the placing; each contestant to be allowed twenty-five minutes for placing the animals or corn and for writing reasons therefor.

An entrance fee of \$2.00 will be charged each contestant and he will be required to judge two rings each of horses and cattle and not less than two samples of corn of ten ears each. The prize scholarship will be awarded to the boy receiving the highest aggregate standing on all classes judged and he will then be required to enter the regular agricultural course of the State Agricultural College within one year after the award is made in order to receive the \$200 prize.

In addition to this prize, a local clothing-house will donate a \$25 suit

FOR OVER SIXTY YEARS
An old and Well-Tried Remedy. Mrs. Winalow's Soothing Syrup has been used for over Sixty Years by Millions of Mothers for their Children while Teething with Perfect Success. It soothes the Child, softens the Gums, allays all Pain; cures Wind Colic, and is the best remedy for Diarrhoea. Sold by druggists in every part of the world. Be sure and ask for Mrs. Winalow's Soothing Syrup and take no other kind.
Twenty-five Cents a Bottle.

of clothes and a shoe-store will give the best pair of shoes in the store to the winner of the prize. It will thus be seen that the young man who wins the prize will be able to go to Ames with a brand-new suit of clothes, a new pair of shoes and \$200 of his expenses paid for him in taking what is undoubtedly the best course that is offered by one of the best agricultural colleges in the United States.

We may add here that we think this a very good example to be followed in other states and hope the management of some of our large fairs in Kansas may be able to do something along this same line.

Take a Trip

over the Nickel Plate Road and be convinced of its superior train service. Solid through daily express train between Chicago, Ft. Wayne, Findlay, Fostoria, Erie, Buffalo, New York City and Boston American Club Meals, ranging in price from 35c to \$1.00, served in Nickel Plate dining-cars; also service a la carte. Rates always the lowest. No excess fares charged on any train on the Nickel Plate Road. Chicago depot: Harrison St. and Fifth Ave. City Ticket offices 111 Adams St. and Auditorium Annex. John Y. Calahan, General Agent, 113 Adams St., room 298, Chicago. (2)

The world owes no man a living, but will pay him a good one if he earns it. To earn it easily study your business. Read that "Blocks of Two" proposition again.

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From Chicago and St. Louis proportionately low rates are in effect by lines connecting with the Union Pacific. For full information, call on, or address
F. A. LEWIS, City Ticket Agent, 525 Kansas Avenue. 'Phone 53.
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FROM TOPEKA TO GUTHRIE.

(Continued from page 553)

wood River, alfalfa and English blue-grass are making exceptional growth. The increasing acreage of alfalfa throughout Kansas tells of its appreciation by the owners of the big barns and fine herds. These three—alfalfa, big barns, and fine herds—seem to be congenial companions.

Oklahoma is a new country. Some of it seems new. In the farms about Guthrie there is an appearance of steady-going prosperity. The orchards and vineyards, the timber-lots, barns, and houses look as if they had come to stay. In the more recently opened country there is the usual appearance of wide extent and undeveloped possibilities. One gets the impression that an undue proportion of the farmers' attention is given to wheat. The red-looking soil is rich in the mineral elements of fertility and is of a texture which, notwithstanding the rather limited supply of humus, makes it very productive. Repeated cropping with grain necessarily tends to exhaust the humus and makes the soil more inclined to a mortar-like texture. It will be found less able than at first to resist the effects of a long dry spell. The surface mulch, which at first was natural and protected the soil-moisture from excessive evaporation, can be perpetuated only by renewing the supplies of humus.

The small areas of alfalfa show that this incomparable forage-crop does well in Oklahoma.

If the editor were asked to write a prescription for sure prosperity for the quarter-section farmer in Oklahoma, it would read about as follows:

"Sow alfalfa. Sow one acre if you can afford no more. Sow more alfalfa every year until 100 of the 160 acres are growing alfalfa.

"Feed the alfalfa on the farm.

"Save and apply all of the manure on the fields.

"Plow up ten acres of alfalfa each year and seed down ten acres of the tilled land to alfalfa.

"Rotate the crops on the tilled land.

"Have a good orchard.

"Build a good home with modern conveniences.

"Have a good school in the neighborhood.

"Go to church regularly.

"Help to organize a Grange and make it the center of culture and intelligence for the community.

"Have plenty of papers, magazines, and books in the home, and see that every member of the family has time to read them.

"Remember that 'the world was not made in a day.'

"Avoid all speculation, gambling, and the saloon.

"Enjoy life and everything in it as you go through it, remembering that you will never pass this way again."

With the opportunities which are plainly to be seen in Oklahoma, this prescription, diligently followed, is sure of good results in prosperity, happiness and good citizenship. The children who grow up in such a farmhouse are to be envied by all mankind. They will be able to carry forward their education in the best institutions in the land, and will have strength of body, mind, and purpose sufficient for every call.

In Oklahoma is being worked out a problem of the present age. The settlement of the country was sudden. True, an Indian population was there from time immemorial. But at the firing of a midday gun, there rushed into the comparatively unoccupied country three streams of humanity. From the North came a great stream of Anglo-Saxons, whose environment had made them sturdy, whose contest with the vicissitudes of the frontier had made them enduring. From the South came a rush of another branch of the Anglo-Saxon race—an impetuous, brave, masterful people. The third stream was that of the African who came from the South and from the North. Here, then, were four elements of humanity all engaged in the problem of peaceful, joint occupancy of a new country.

The Indian, though first on the ground, and though receiving unusual fostering from the Government, is scarcely a factor in the contest, the virility of his race having been weakened by the communal ownership of land, and by the paternalistic attitude of the Government. He is a disappearing element, somewhat troublesome while he lasts, but going by the rum-and-idleness route. Exceptions there are and these may leave a trace of Indian blood in the population of the future. As the train passed the Chillico Indian school, just south of the Kan-

sas line, it was observed that large areas of raw prairie had been recently plowed. A trainman was asked whether the Indians had done the plowing. "No the Indian won't work. The Government hires white men to do the work for the lazy louts." At Newkirk, some Indians were at the station. The trainman was asked further of the "noble red man." "They're a mean lot. They won't work, but they come to town and get drunk and then want to fight everybody. The women are worse to get drunk and worse to fight than the men. The Indian woman always has a knife, and when she gets drunk she will use it. She's dangerous to have a difficulty with."

For the first time since history began the negro came here into an open, new country as a free man and citizen, equal in rights, equal in opportunities, and about equal in possessions with his white contemporaries. He came in great numbers to a rivalry where individual initiative, energy, pluck, perseverance, frugality, sobriety—manhood—must determine the status. His Anglo-Saxon compatriots from the North believed in his ability and his right. The Anglo-Saxons from the South believed him essentially inferior, dependent, and entitled to little consideration except as a server. It is to be confessed that the Southron's view is rapidly spreading. The white Southron and his white neighbor from the North will tolerate and compromise their differences. Their children will intermarry and become one people. But the negro must remain a distinctive element for a long time at least. To the discredit of both races, the average of

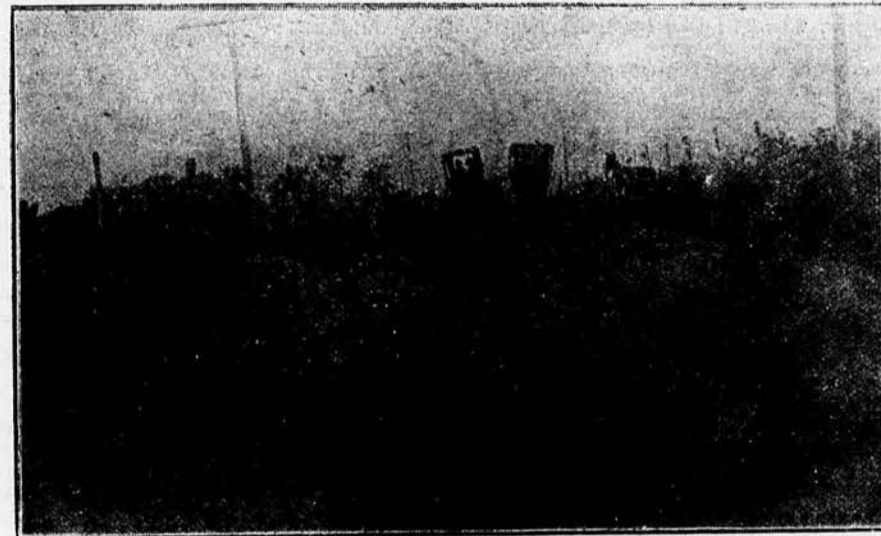
hay is ready to cut, spread it out in a building where the air can circulate around it so it slacks to a dust. Cut the hay when the first blooms appear; when half cured rake and commence to haul to stack, using lime on layers of two feet of loose hay in the proportion of two gallons to what would make one ton of dry hay. Use more lime rather than less; as the hay cures, use less lime—no danger of using too much. Hay treated in this way does not get musty; it gets very hot, but comes out bright and sweet, the leaves are all saved, and stock is benefited by use of lime. Calves fed on this hay do not die of blackleg.

"I have used this method four years with all kinds of cattle and horses. Have full fed cattle each year. Have 150 head of cattle on full feed now, ranging from calves to 3-year-old steers, and I have always made satisfactory gains.

"Certainly alfalfa hay properly handled with shelled corn is the nearest a balanced ration that a Kansas farmer can get for the cost of it."

KANSAS FARMER'S NEW WALL ATLAS.

The KANSAS FARMER has arranged with the leading publisher of maps and atlases to prepare especially for us a New Wall Atlas, showing colored reference maps of Kansas, Oklahoma, Indian Territory, the United States, and the world, with the census of 1900. The size of the New Wall Atlas is 22 by 28 inches and it is decorated on the outer cover with a handsome



Photograph of Mr. King's road showing smooth hard surface and convexity of the grade. This is a clay hill that has been dragged since 1896 with a split-log drag. During the winter of 1902 and 1903 this road could draw a fair load over it.

the negro's color becomes lighter, but a trace of African blood relegates him to the inferior position.

The study of the sociological forces at work in Oklahoma is an interesting one which can not be elaborated here. That a high order of people will result from the blending of the Northern and Southern elements is not to be doubted. How much this development is being hindered by the presence of the two dark races can not be determined from superficial examination.

KEEPING GREEN ALFALFA.

EDITOR KANSAS FARMER:—I would like some information in regard to stacking alfalfa hay green and giving it some treatment to prevent combustion or mold. Lime when used for this purpose affected gain of animals fed on this hay. I have read somewhere of some article other than lime which gave better results, but have forgotten the name of the article and the method of using it. I would like also to learn a method of handling sorghum so that it can be baled and kept for six months like hay without molding or souring. C. MYGMA.

Kansas City, Mo.

The editor does not remember to have seen any account of the use of any substance other than lime to preserve alfalfa when put into the stack green. If any reader knows of any such substance that is of practical value, or of any method of handling sorghum as suggested by this correspondent, he will confer a favor on the KANSAS FARMER and on several thousands of alfalfa-growers by sending a full account to this paper.

This inquiry was referred to Mr. S. M. Smith, of Wilson County, the first Kansas farmer to use lime in curing alfalfa. Mr. Smith writes of his experience as follows:

"I buy lime by the barrel before the

design composed of the flags of all Nations.

Tables showing products of the United States and the world, with their values, the growth of our country for the last three decades, and a complete map of the greater United States are given. This is an excellent educational work and should be in every home. The retail price of this New Wall Atlas is \$1.

Every one of our old subscribers who will send us \$1 for two new trial subscriptions for one year will receive as a present a copy of this splendid New Wall Atlas postpaid, free.

Any one not now a subscriber who will send us 50 cents at once will receive the KANSAS FARMER for five months and will be given a copy of our New Wall Atlas free and postpaid.

Publishers' Paragraphs.

If you have a poor, mangy colt or a run-down horse, get Rex Conditioner and feed it according to directions and it will improve. It is not an ordinary condition powder for general use. It is made especially for run-down, wormy and out of order stock. It helps them to shed, kills worms, gives new life and adds fifty per cent to the appearance of every animal you feed it to.

A Postal-card sent to Perry & Dowden, 200 1/2 Grand Ave., Oklahoma City, Okla., will bring some very interesting reading matter in regard to the opening up of the new town tracts along the extension of the Frisco Railway System south and west of Oklahoma City. The opportunities in this new country are little short of wonderful and the information furnished by Perry & Dowden is well worth anybody's postal-card.

It's Up to You.

to grasp the good things that come your way. Read up on the money-making possibilities in Missouri, Kansas, Indian Territory, and Texas. Let us send you "Business Chances," "Timely Topics," "Texas," "The Golden Square," and other interesting "Katy" publications pertaining to the Great Southwest. Address "Katy," 501 Walnwright, St. Louis, Mo.

Miscellany.

The What Next of the Good Roads Problem.

D. WARD KING, MAITLAND, MO., IN MISSOURI AGRICULTURAL REPORT.

The good roads problem is of National importance; it is receiving National attention. Nothing is too good for Missouri, and she will be no laggard in the earth-roads procession. East and West, North and South, Missouri's methods of good road construction are being studied. No State in the Union possesses better roads than can be found in this State, while, on the other hand, the earth-road within a mile of a Missouri hamlet is not worse than the earth road within a mile of Chicago, Cleveland, or Washington. At either place, under certain conditions, the best of teamsters will "stick in the mud."

It is my purpose to-day to consider as briefly as possible the dragging of the roads; earth roads; the wastes of our present system and stone roads.

ROAD DRAGGING.

The results that follow persistent dragging of the roads after each wet spell can not be pictured with words. I met Hon. S. M. Prather, of Tarkio, Mo., recently in St. Joseph, and as we shook hands he said: "I did not take much stock in your dragging idea at first, but I'll tell you you can not talk long enough or hard enough to a man to make him believe what it will do. The only way for him to comprehend is to build a drag and use it."

Mr. Chas. Hill, who lives about eight miles from Mexico, Mo., writes: "I have tried Mr. King's method of dragging and have found it a great success. I have dragged about three miles of road past my place this season. I have seen the time when other roads were cut up into two or three different pairs of ruts, and a man would be forced to travel in one of them. These ruts would come right up to each end of the dragged road which would be perfectly smooth."

In conversation with me, Mr. Hill remarked: "Why I could send a stranger over the road to-day, muddy as it is, and he would know within three feet of the place where I began to drag."

I have often told my friends that one could see a wide difference with the eye, but that they must ride over the two roads in a buggy before they could appreciate the dragged road. Now, however, I go further and insist that one must drive a loaded wagon repeatedly over the two before he can correctly estimate the benefit of dragging. I reached the latter conclusion while hauling wheat this fall. One can note at a distance the change in the "chuckle" of a loaded wagon when it rolls onto the dragged road from out of the ruts, but he must ride and drive if he would get the full effect of the lurching of the wagon and the whipping of the tongue.

WEEDS.

Until within eighteen months I did not fully comprehend the importance of low weeds as a factor in destroying roads. I mean low weeds and grass along the wheel tracks. They are an unobtrusive but powerful agent of destruction. There has been an active campaign against the tall weeds and we are compelled to mow them, but the little fellow has been getting in his work unnoticed. It is this way. In the spring the big machine smooths the road from ditch to ditch, then we all drive down the center. After the first shower the weeds spring up and in a few days are ready for business. Their business is a four-in-one combination, i. e., to prevent the rain water from running to the side ditches, thus holding it in the wheel-tracks, even when no ruts exist; in dry weather to catch and hold the dust; in wet weather to catch the mud that hoofs and wheels splash; and at all times to keep the surface moist and loose and therefore soft. Is it not clear that if one inch of dust and mud is removed from the center and caught by the wheels on the side, that their relative levels have been changed two inches? When we mow these weeds we aggravate the difficulty by adding their tops to the accumulation. Dragging kills the weeds in the seed leaf and allows the water to find its way unobstructed to the side ditch.

CLAY AND GUMBO.

When talking with roadmen in the river bottoms, they invariably bewail the lack of drainage, while the clay-hill folks envy the rivermen because they have no washes. Both classes are

quick to say: "If we lived on the black soil of the prairie we would have some faith in dragging, but here—" and words fail them. Now the truth of the matter is that either clay or gumbo will make a more substantial road than the soft prairie soil. The selfsame characteristics that make clay or gumbo so hard to get into good order, after it once gets exceedingly bad, will operate to keep it from getting into bad order after it is once put into exceedingly good order. It will stay good just as tenaciously under good methods as it stays bad under bad methods. True, it is sometimes with exceptionally favorable conditions a good road in spite of poor methods, and conversely, it is sometimes with exceptionally unfavorable conditions, a bad road, even under the best methods. By the way, a clay hill, a little over half a mile south of my house is the best piece of road of which I know, taking into account the short time it has been dragged. Before it was dragged, it was noted far and near as a tough proposition. At present, it is good, even in bad weather. Certain gumbo roads, dragged of course, were used last summer and summer before last as training-tracks by trotting horsemen and as speedways by the gentlemen drivers in the vicinity. Dr. C. N. Scott, of Mound City, says in a letter dated November 22, 1902: " * * * have traveled gumbo road to Bigelow very often in the past five years and never saw it so good as it has been since they began to drag it. I go there to speed my horses. It is as smooth as a race track. I have many times driven over this two miles at a three-minute clip," but he never did it before it was dragged. Mr. A. R. McNulty, of Mound City, has known this Bigelow road for thirty years, has been in the livery business for eleven years and has had mail contract for eight years. He usually goes over this road four times a day. Mr. McNulty writes: "The road between Bigelow and Mound City has been in better condition this summer since the dragging began than ever before."

Hon. John Kennish writes: "The (Bigelow) road is a United States star route and is much traveled when fit for travel. It is over gumbo soil and at times is impassible. This fall the road has been worked by the King system of dragging and has been in better condition than it has ever been in the twenty years in which I have traveled it."

Judge M. L. Nauman, of the Holt County Court in writing of this road says: "A portion of it has been so wet all summer that we could not make a start, but the other part never was so good before in the history of the road. The dragging is the making of it." It is but just to add that the season there has been wetter than any on the records or within the memory of the oldest inhabitants.

In this connection let me ask you, did you ever see a wagon-road through a swamp or over a gumbo slough which was dusty while at the same time there was plenty of water and soft mud within a few steps of the dusty wheel track? Did you ever drive over such a road and watch the path rise and fall under the horses' feet and see the mud and rushes shake for ten feet around? Did you ever see in such a road "chuck holes" that were from eight to eighteen inches deep with dust in the bottom? Dust in the chuck holes and water standing close by several inches above the average level of the ruts? Many times have I seen such conditions and it always seemed to me that I was driving over a raft or traveling along the length of a great narrow boat. Did it ever occur to you that a material that will make itself, make itself, mind you, into a huge boat over which one can drive below the level of the surrounding mud and water—did it ever occur to you, I say, that this same material would make a splendid road if we could just turn it upside down, turn the boat bottom-side-up, as it were, and then take care of the bottom, watching it closely to prevent holes or hollows forming in which water might lodge?

Col. Clay, of Mexico, Mo., tells me of a locality in the State of Mississippi where roofs of lumber are built over certain roads. Oil is used in some places to assist in making water-tight surface for the road. Asphalt would be without value if it leaked. John Loudon McAdam insisted on a firm, dry foundation to be covered with small stone so rolled and packed that travel would cement the surface and make it impervious to water. McAdam said: "The thickness of [the stone on] a road should only be regulated by the quantity of material necessary to form such impervious cov-

ering." The highest type of macadamized turnpike therefore is a solid roof made of small stone. We have seen gumbo roads that during a wet season reminded us of the boundary line between the United States and Canada because it was a chain of great lakes, and these miniature lakes are there because those dusty chuck holes hold water like so many big tubs. Gentlemen! it is more difficult to build a boat or a tub than it is to build a road. Hear me! If gumbo will manufacture boats and tubs without the use of brains, surely men with brains should be able to manufacture a road from the same material. Let us roof our roads with clay or gumbo by careful, regular dragging. A thoughtful, conscientious trial will convince the most incredulous.

WASTE.

Few of us appreciate the wastefulness of our present system. It is wastefulness in the extreme to work the road with a big machine and leave it untouched for two or three years thereafter. Especially is this true if the machine is used for the purpose of moving a mass of loose earth, weeds, trash, etc., into the center of the highway. Most of us realize this fact. Most of us have also seen the waste of time and money caused by breaking in one new team each day and by having two or three men idle while their teams are at work on the machine. But have we ever made a careful estimate of these wastes one by one and then footed them up? Let us do some ciphering. We will first consider the "green team" item. Many of us have seen new teams put on the machine in the morning that so disorganized the other six horses that the outfit did not get to working steadily until the middle of the afternoon. And we have seen balky teams and balky drivers that not only made the other animals do all the work but drag them along to boot. We are also acquainted with the lazy team driven by the shirk; their doubletrees are back against the wheel, they do no work, neither do they allow the team on the other side of the tongue to pull. Indeed the very best new team can not, for reasons obvious to every experienced teamster, do itself justice when it first sets in. May we not, then, conservatively estimate that the average "green team" does only half a team's work up to noon of the first day? That is to say, one-fourth of one day's work for a two-horse team is wasted by that team. But the other six horses have also lost time. We will estimate the loss of each of the other teams as being one-half the loss of the green span; that is, one-half to three-fourths, or three-eighths of a day, which added to the other one-fourth gives us a total of seven-eighths of a day for one team. If a team is worth one dollar per day, we have a loss of 87½ cents. Conservative road men will, I feel sure, agree that this is a low estimate to put on the difference between a strong, able team of eight horses accustomed to each other and to the work and, on the other hand, a picked-up team, no span of which works longer than a day and a half and which is being constantly changed and disorganized. Eighty-seven cents waste per day for breaking green teams! The men who drive and operate the machines waste time also by reason of the green team. Computing their loss on the same basis as before, each man will lose one-eighth day, equal to one-fourth day for one man or twenty-five cents, making our total, so far, \$1.12½. To this we must add the time of three other men, for one man can drive eight horses, four abreast, almost as easily as he can drive four horses, two abreast, so here is another item of loss amounting to \$3.00 per day for extra men, giving us a grand total loss for teams and men of \$4.12½ per day. More than this is spent on each mile of the road in a majority of our counties and twice as much in some of them. All this is on the presumption that the machine is doing heavy work. That is, cutting down banks, filling big ditches or making brand-new roads. If, however, it is being used with only four horses and merely for the purpose of smoothing the surface, then there is a still greater proportionate waste because the same work can be done with a well-made drag. Listen, the empty machinery makes a load for a team, too much of a load for the average farm team. Those of you who have moved a big machine five or six miles will support me in this statement. Listen again, if one team is necessary to move the empty machinery, then when we hitch to it with four horses, only two of those horses are moving dirt. We are then, in this case, wasting at three points, namely, first, a team hauling heavy machine; second, a man operat-

ing machine; third, by using an expensive implement when a cheap one would answer the purpose. An expenditure of \$4, and wear and tear on a (say) \$200 implement to accomplish a result that can be reached by an expense of \$2 and the use of a (at outside) \$5 implement. Moreover, the drag will do the best job unless the big machine goes over the ground twice, because the knife of the machine is adjusted by the wheels and each time a wheel goes over a bump or drops into a rut, the knife is raised or lowered. In order to do a smooth job, one must go a second time. On the other hand, the drag gets two whacks at the bumps and has two chances to fill the ruts and sticks close to the surface of the ground at all times.

ROCK ROADS.

I am persuaded that many localities in Missouri are enduring the worries, expenses and other disadvantages that adhere to mud roads because they honestly believe they are not able to better themselves. The conviction that progress is possible must first exist before any attempt at progress will be made. It certainly is unfortunate that the mistaken idea that macadamized roads are impossible prevails in so many communities. Some folks seem to have a notion that unless the fields are covered with stone, rock is too scarce for road-building. I will be dogmatic for a moment and assert, as a general proposition that a macadamized pike is a possibility wherever land is worth \$30 per acre and rock can be obtained within two and one-half miles of the proposed road. Not all the roads, of course, nor perhaps even half the mileage, but the main thoroughfares.

Permit me a few moments in support of my position. While visiting in Alabama last summer, I saw rock roads building at a cost of \$2,200 per mile where the best land was priced at only \$25 to \$30 per acre. Moreover, in my opinion, the road they were building was far heavier and wider than the travel demanded, and therefore much more expensive than necessary. But the people there have been educated to see the advantages of the stone road. Please do not think I am speaking of a radically progressive community. The old darkey still dons his tattered hat and steps off the side walk as you pass. Chain harness is the rule. The old style bull-tongue plow is in the majority, and these fine roads are traveled by ox teams. Not of the "New South" am I speaking, but of the genuine, old-fashioned, hospitable old South of the ante-bellum days. And now another statement. Although rock is superabundant thereabouts, still the contractor found it profitable to haul the crushed rock two and one-half miles before moving the crushing machinery. I submit, gentlemen, that these two facts prove that with rock less than two and one-half miles distant and land at thirty dollars per acre, macadamized roads are a possibility. And it would seem a natural sequence that where land is more valuable, the stone can be hauled farther.

And now let us consider an instance where a community might have rock roads if they just thought so. I have in mind two towns here in Missouri, lying about six miles apart. What is land worth? Well, land between these two towns has sold recently for \$30 per acre. Probably not an acre can be bought for less than \$50, therefore the land value is there. As for rock, if we start from one town to go to the other, we find rock within a hundred steps of the highway before we travel a mile. At two and a half miles, rock is less than one-half mile distant. At three and a half miles, only three-fourths mile away. At four and one-fourth miles from town but one-fourth mile to rock, while at five and one-half miles it is only one-half mile from the road to the quarry that is kept open constantly. Here is rock, quantities of it. Here is land worth much more than thirty dollars. Why don't these people have a stone road? Your answer? Is your answer ready? My answer has been given; the answer is found in the conviction of the people that rock roads are beyond their reach. The people have been educated to this belief by reading the walls that rise from our brethren in the rockless regions of our neighbor States. And all that is needed, gentlemen, to inaugurate an area of stone-road construction right here in Missouri is the removal of this mistaken conviction.

In conclusion: I pin my faith in the future betterment of our highways to these foundation truths:

1. Rock within two and one-half miles is available where land is worth \$30.

2. Six or seven feet of stone is sufficient for the average rural traffic.

3. Any community where rock is available is behind the times if it does not each year build a mile or more of stone road.

4. Where stone roads are absolutely out of the question and where, if they can be built, they are not yet an accomplished improvement, a dragged road is the best substitute.

If we hammer away at these four propositions, the desired results will in due time be obtained.

THE A, B, C OF ROAD DRAGGING.

The most difficult part of road dragging is getting at it. All the rest is so simple that one learns it in the doing. The first noticeable effect is the smoothing of the road surface, and this in turn allows the rain and snow water to flow off, and encourages the distribution of travel over the road from side to side.

Teams usually follow the beaten trail. Dragging destroys the old trail and the new trail, each time broader and less definite than before, is made on a different portion of the highway. By dragging while the earth is yet moist the road finally becomes a series of practically water-proof layers of puddled earth, each one of which is rolled and pounded by the wheels and hoofs of travel. Almost imperceptibly the center of the road is elevated until you discover you have made a smooth grade that is not easily effected by bad weather.

Dragging kills the weeds in the seed-leaf. It also does away with the bumps at each side of bridges and culverts. Regular dragging fills them and they become as solid as the rest of the road. As the wheel tracks are all wiped out the water does not run to the bridge after every little shower, as it used to do, so you can drive as swiftly over the culverts as over any other portion of the dragged road.

A peculiarity about road dragging is that you do not comprehend the steady improvement until after your neighbor begins. When he begins, then you will see how much you have gained. Of course you knew it was better than the common road, but you did not know it was so much better this year than it was last. But if your neighbor is a year behind you, the extra year's dragging your road has had will be apparent at every wet spell. Your road is a year drier, a year harder, and a year thicker than his. His road will cut up quicker and deeper and will not dry near so soon as yours.

At first you will have to drag when part of the road is too wet. But after a while it will dry evenly, and the first few times you drag it will be better for you to merely drive down one wheel track and back the other, moving the dirt toward the center of the wagon track. Gradually widen as you get a chance. This will give a solid foundation. If the wagon track is at one side of the highway begin right there anyhow. The rest will follow in time. Don't be in a hurry. Make haste slowly. Remember you cannot successfully give a house three coats of paint in twenty-four hours; nor can you make a fine crop by plowing the corn four times in one day. First, make a drag. Second, use it every time you can improve the road by dragging. Practice will make both you and the road perfect—almost.

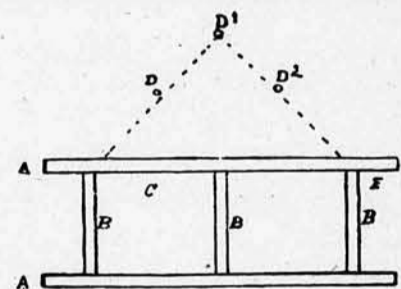


DIAGRAM OF D. WARD KING'S DRAG.

A, split log 9 feet long, 10 to 12 inches thick, set on edge, 30 inches apart, both flat sides to the front. B, strong oak or hedge bars, the ends of which are wedged in two-inch auger holes bored through the logs or slabs. Dotted line, chains or strong wire. D, D1, D2, rings to connect to double-tree clevises. Hitch at D1 and stand at C, on a plank laid on the cross-bars, for ordinary work; or hitch at D2, and stand at E for ditch cleaning or to make the drag throw more dirt to the left. To move dirt to the right reverse position of driver and last hitch. If working a clay road, put iron, old wagon tire, or something of the sort on lower edge of drag at the end of six months; for softer soil at the end of twelve months.

HOW TO MAKE AND USE THE DRAG.

For the purpose of giving more information about how to make and use the road-drag, we print the following extracts from the pages of the Thirty-fourth Annual Report, State Board of Agriculture:

"The drag is made by splitting a (Continued on page 670)

SHARPLES
TUBULAR
HAND
AND
POWER
DAIRY
SEPARATORS

The largest cream separator works in the world is unable to keep up with the demand for these superior machines. Thousands and thousands of Tubulars sold every year to dairymen in all parts of the earth. What does this demand mean? Why do the Tubulars sell better than other separators? Because they are better machines, and you will agree if you examine one. Write for free catalogue No. 105.

THE SHARPLES CO., P. M. SHARPLES,
Chicago, Illinois. West Chester, Pa.

In the Dairy.

Conducted by George C. Wheeler, Kansas Experiment Station, Manhattan, Kans., to whom all correspondence with this department should be addressed.

The Largest Official Butter-Fat Record of a Two-Year-Old Heifer in the World.

The Guernsey heifer, Dolly Bloom, No. 12770, A. G. C. C., Adv. R., No. 40, has just completed a most wonderful year's milk and butter-fat record. This record has been made under the rules and conditions of The Advanced Register of Guernsey Cattle which requires the supervision of an Agricultural Experiment Station. In this instance a representative of the Massachusetts State Station saw and sampled the milk of this cow each month and reported the results thus obtained. The inspector also reported various weighings of milk as check weights. The owner reported the detailed weights of milk for each day and statement of feed and care.

Dolly Bloom, calved March 22, and started her record March 26, 1902, when 23 months old and completed it March 25, 1903. During this time she gave:

	Milk, lbs.	Butter-fat, per ct.	Butter-fat, lbs.
March 26 to 30.....	149.00	4.25	33.81
April.....	795.50	4.56	39.66
May.....	893.81	4.40	40.08
July.....	846.69	5.23	44.28
August.....	795.25	5.17	41.11
September.....	703.15	5.90	39.38
October.....	688.50	5.90	36.49
November.....	681.44	5.55	38.37
December.....	694.50	5.60	38.89
January.....	641.63	5.80	37.21
February.....	543.69	5.73	30.61
March 1 to 25.....	512.75	5.40	27.69

Pounds of milk, 8,841.58; pounds of butter-fat, 453.86; average per cent of butter-fat, 5.13.

The requirement for the admission of this cow to The Advanced Register was 6,000 pounds milk and 250.5 pounds butter-fat. Her production greatly exceeded this requirement. The record made is the largest record of a year's production of butter-fat by any two-year-old heifer in the world that can be found recorded, and at the same time supervised by any representatives of a public institution or an organization.

The following statement from the owner as to the daily feeding of his cow during her record will be of interest.

March, 1902.—After calving, her feed for the rest of the month was gradually increased until it reached 5 pounds shorts, 15 pounds ensilage and clover hay ad libitum.

April.—6 pounds shorts, 1 1/4 pounds old-process oil-meal 1 1/4 pounds, gluten, 20 pounds, ensilage and clover hay ad libitum.

May.—Some grain as in April with the addition of 1 pound corn-meal, clover hay until the 15th, when she was turned to pasture and fed peas and oats in the barn.

June.—Same as in May except green clover in place of the peas and oats
July, August and September.—Same grain, with the omission of the corn meal. Pasture and green clover continued.

October.—Same grain. For course food, in addition to the pasture millet and a little clover hay was given.

November to March.—Same grain, 20 pounds ensilage, 40 pounds roots (mixture of 1 pound carrots to every 2 pounds mangles) and clover hay ad libitum.

During the summer she was out in the pasture until the heat of day and at noon was fed green stuff in the stable. If weather was hot she was turned out at night and stabled in day-time. She had the same care and feed as the other cows of her age in

the herd with regard to general way of handling. She was milked only twice a day and stood in a standing stall. Dolly Bloom was bred by Mr. Ezra Michener of Michener, Pa., and dropped April 14, 1900. Her sire was Divan 5846, and her dam Questa 11385. Their breeding goes back to such noted animals as Bonny Boy, Fernwood Lily and Imp. Pacific.

Dolly Bloom is owned by Mr. F. Lothrop Ames, of Boston. Mr. Ames takes great pride in his small but choice herd of Guernseys at his beautiful estate, "Langwater," in North Easton, Mass., and the work of this cow is a great pleasure to him.

The heifer bears unquestionable testimony to the capabilities of a Guernsey cow. She is one of forty Guernsey cows that have made official yearly records of butter-fat and been admitted to the Advanced Register. The records varying from 296 pounds to 602 pounds (equivalent to 346 and 702 pounds butter).

WM. H. CALDWELL, Secretary.
Peterboro, N. H., April, 1903.

A Dairy Suggestion From Denmark.

As our readers are all well aware, the Dane is the advanced dairy-man of the world. In a comparatively short time, by close attention to dairying under the best scientific guidance, he has transformed his little country from a grain-selling country, growing poorer all the time, to a grain-buying country, growing richer all the time.

One of the minor methods by which he has attained the highest position in production, in quality, and in price obtained on the market, is that of having an inspector in each neighborhood of whose business it is to visit each farm at stated intervals, weighing and testing the milk of each cow and keeping a record of the same, and weighing also the feed given to each cow and keeping a record. The groups which employ these men number from twelve to twenty farmers or dairymen, and each group or society is affiliated with the Royal Danish Agricultural Society, which bears half the expense. The cost to the dairymen of this test of the cow and weighing of the feed is about half a cent for each visit and the visits sometimes once a week and sometimes twice a month. The result of this has been the rejection of poor cows and a greater increase in the yield of milk and of butter-fat. It has proved a very profitable investment.

In reading of it, the question has occurred to us: Will it not pay every creamery in connection with the patrons to employ a dairy student at the Agricultural College to spend his time at least in the winter season, in visiting each patron, testing their cows for them, and making suggestions as to the improvement of the ration? There are very few farmers that will go to the trouble of testing each cow and ascertaining her butter-fat producing capacity. In fact, it would be cheaper for them in the long run to pay their proportion of the expense of some bright young fellow accustomed to this kind of work and who has also a practical knowledge of feeds.

Judging from the inquiries that come to us each winter, we assume that but about one man in ten is feeding his cows a properly balanced ration. Nearly all of them are feeding too little protein; that is, too little clover hay, bran, and shorts, and the foods necessary to provide the cow with the raw material for milk. A bright young man could demonstrate to them very soon why it is that their sort of dairying does not pay. He could also point out the cows that cannot with any kind of feeding be made to pay. In a creamery furnished with 10,000 pounds of milk per day, the expense of employing a young man to do this work would be very light; the creamery would very well afford to pay half of it, and the farmers, we are sure, would find the other half about the best investment of money they had made for many years.—Wallaces' Farmer, May 1, 1903.

The Rank of Kansas as a Dairy State.
C. L. THOMPSON.

In the early fifties, as a large portion of the eastern population of the United States was wending its weary way to the land of gold, a few were so captivated by the fertile soil, fresh flowing waters and luxuriant pasture of this State that they decided to make it their home. At this time the cattle were buffalo and the plains were literally covered with them; but they were speedily killed off and gradually replaced by the more profitable domestic cattle.

For many years the dairy industry

HEY, THERE! JUNK MAN!

I want to know how much you will give me for one of those separators that claim to be "just as good" as the

DE LAVAL CREAM SEPARATORS

I put in one of them last year because the agent claimed it was "just as good" as a DE LAVAL machine and was \$10.- cheaper. I have looked about and gotten some separator experience since then and I find now that I could have bought a DE LAVAL machine of greater actual capacity for less money in the first place, while I have lost money every day through the imperfect skimming of this machine, aside from hard running and trouble of all kinds from infernally poor construction.

I am going to have a DE LAVAL machine now if I have to "junk" this old one for scrap-iron. I know it will save its cost the first year of use and should be good for twenty years. I find all well-informed dairy farmers are using DE LAVAL machines and that there are over 400,000 of them.

A De Laval catalogue may save this experience:

CHICAGO PHILADELPHIA
SAN FRANCISCO
MONTREAL
TORONTO
WINNIPEG

THE DE LAVAL SEPARATOR CO.
General Offices:
74 CORTLANDT STREET,
NEW YORK.

An Army Invades Kansas.

A year ago a few modest, delicate, unobtrusive Empire Separators went into Kansas with glad tidings of joy to the patient dairymen who had waited for years to receive the reward promised them, but which reward has never come. This little group of silent workers met some "bullies" and were told to go back from whence they came. When this noisy bluff failed, they were laughed at and made all kinds of fun of. They were told they were too little, too insignificant, too weak, and every now and then some great big duffer, who imagined himself proof against any kind of exposure would douse this little visitor with ice milk. But this little band of crusaders (who soon won favor with that element in whom everybody is interested—the women and children) continued to carry their silent message of a better way to handle milk, and they sent back to their old home for more help to tell this beautiful story of less work, less expense, better calves and above all a market from 25 to 50 per cent better than the old one. Each silent appeal brought a helper until at the expiration of the first year. There are 3000 of these little simple, silent workers preparing (in their easy way) the cream from 100,000 cows to be shipped to the Blue Valley Creamery Co., of St. Joseph, Mo where the highest price is paid. Do you want to know more? If you are interested write us.

YOURS FOR BETTER RESULTS,

Blue Valley Creamery Co.

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REPLENISH YOUR POCKETBOOK

by purchasing a
U. S. CREAM SEPARATOR

The U. S. Gets More Cream than others, which means more money to the user;
With the U. S. the calves and pigs thrive on the warm sweet skimmilk, which means still more money to the user;
The U. S. Wears Better and Longer, which means more money still to the user.

These and other points of superiority described in our catalogues make
THE U. S. SEPARATOR THE MOST PROFITABLE TO BUY.

Vermont Farm Machine Co., Bellows Falls, Vt.

279

For Western trade we transfer our Separators from Chicago, Minneapolis, and Omaha. Address all letters to Bellows Falls, Vt.

received little or no attention, beef cattle being more easily handled on the plains, and the market for dairy products being very meager. However, in the last decade, the farmers of Kansas have opened their eyes to the wonderful resources of the State along dairy lines. With the introduc-

tion of alfalfa, the greatest of the tame forage plants for dairy purposes, the State is steadily forging its way to the front. With land that will produce from three to five tons of alfalfa, which is almost equal in feeding value to its weight in bran, per acre; with the introduction of refrigerator cars, which brings us within easy reach of the market, the Kansas dairyman has advantages such as are enjoyed by few others. The rapid strides which the dairy business is taking shows that he is to a certain extent improving his opportunity.

The creamery business has been carried on in the State but little more than ten years. To-day we have over 600 creameries and skimming stations in operation. In 1900 the total value of the State's dairy product was over \$11,000,000, with a large increase the past two years. The largest creamery in the world is operated by the Continental Creamery Company at Topeka, its output last year reaching 35,000 pounds of butter daily, with prospects of 50,000 pounds the coming summer. The Hesston Creamery Company has also done a large business for the past two years, and the Braden Company at Winfield is now building up a large trade.

At present the hand-separator is becoming a great factor in the Kansas dairy and is crowding out the skimming station. The milk is skimmed on the farm, the cream shipped to the creamery and the fresh skim-milk fed to the calves. This mode of handling the cream has many advantages over the old way. In the first place the calves always get the warm sweet skim-milk, thus giving them a great advantage, and if properly cared for they will do fully as well as if allowed to follow the cows. Then the marketing of the product is much easier as it is now condensed and the milk from fifteen to twenty cows can be easily hauled to the station in a light spring wagon or buggy.

The inauguration of the Babcock test makes it possible for the farmer to know exactly what each individual cow is doing, thus enabling him to improve his herd in such manner that all of his cows will be making him a profit. It has been demonstrated time and again that success in the dairy lines depend as much, or more, on the kind of cows kept, as on any other one thing. The average cow of Kansas

is a very poor dairy animal and we must pay more attention to the selection of our herds.

By breeding our best cows to a pure-bred sire of some one of our dairy breeds, and of a good strain of milkers and keeping the female progeny, taking the best care of them, we can in a few years have the nucleus of a good dairy herd.

The dairy industry is one that must be carried on by men who are not only thinkers, but men who carefully do the best they know and are continually on the alert looking for something better. The farmers of Kansas are awakening to the fact that the tillers of the soil must have an education and are sending their boys to school. A great many of these boys are taking special work along dairy lines, and the prospects are that in the near future Kansas will stand in the foremost rank as a dairy State.

A Kansas Record.

The last months' record of our first seven fresh cows might interest readers of the KANSAS FARMER:

MILK.	Lbs.
Average total yield per cow.....	1,070
Average daily yield per cow.....	35.6
CHEESE.	Lbs.
Green.....	680.9
Cured (10 per cent shrink).....	612
Value at 1c per hundred.....	\$67.32
Per cow.....	\$9.61

AVERAGE DAILY RATION.

Silage.....	Lbs.	40
Corn-meal.....	6	
Kafir-corn.....	2	
Oil-meal.....	2	
Oat hay.....	Ad libitum.	

We built two silos last summer and like our countryman, Schwertfeger in Hoard's "Dairyman" think "Silo-Hilee-Hilo!"

FRED SCHAAF.

Bern, Kansas.

Prices Abroad.

It appears that high prices are quite as much the rule in England as in the United States at the present time. Prof. Sauerbeck's annual statement, "Prices of Commodities," published in the Journal of the British Royal Statistical Society, for March 31, 1903, just received by the Treasury Bureau of Statistics, show high prices in food-stuffs, in iron, and in textiles, during the year 1902. The statement begins with a series of "Index number" tables, showing index prices for groups of articles from 1893 to 1902. The index number for the group designated "vegetable food" stands at 63 for the year 1902, against 60 in 1890 and 53 in 1896; that for "animal food" stands 87 in 1902, against 77 in 1898 and 73 in 1896; that for "minerals" stands at 82 in 1902 against 70 in 1898 and 62 in 1895; that for "textiles" stands at 61 in 1902 against 51 in 1898 and 52 in 1895; and the index number for the group designated "sundry materials" stands at 71 in 1902, against 63 in 1898 and 62 in 1897. Commenting upon these figures the statement says: "Meat was dear during the greater part of the year, and beef ruled in June and July higher than at any time since 1883. * * * Scotch pig-iron rose for 49s. per ton to 58s. 4d. in September, and dropped to 53s. 3d. at the end of the year. * * * Flax was higher in the summer, but lost the advance later on. Jute was dearer in the second half of the year; fine wool advanced 25-50 per cent. Silk ruled also higher. Tallow, palm-oil, and nitrate were dearer."

Commenting upon commercial conditions, the report says: "The exports from the United Kingdom were somewhat larger which was principally due to the American demand for iron and some other commodities, and to the greater exports to South Africa. The shipments, on the other hand, to India, Australia, Japan and Argentina were smaller. In Germany, Austria and Russia the depression continued throughout the year, and France was affected by a coal strike in the last quarter. The corn crops of the world were large, and the supply of some other commodities, particularly sugar, coffee and cotton, was very heavy."

Commenting upon conditions in the United States, the report says: "The United States have again occupied an exceptional position. If a year ago fears were expressed that the state of affairs there were not free from danger, it must now be admitted that they were premature, as the marvelous prosperity has continued unabated to the present day. American securities had another boom, and though a reaction followed, the last prices still occupy a high level. It is estimated that the iron production of the States reached the enormous total of 17,000,000 tons,



Davis Cream Separators

**BEST IN THE WORLD
EASIEST CLEANED
MOST DURABLE
CLOSEST SKIMMER**

CATALOGUES

DAVIS CREAM SEPARATOR CO.,
54 to 64 North Clinton Street,
CHICAGO, ILL.

Save time and freight by ordering from

PIONEER IMPLEMENT CO.
Council Bluffs, Iowa.

and even this was insufficient for the requirements."

Commenting upon the prospects for 1903, the report says: "The prospects for the present year are, if anything, a little more hopeful. Adverse points in this country are high taxation, undigested government loans, and high prices of meat; but the corn crops of the world were plentiful, the development in South Africa will no doubt be important, the condition in Australia is improving, and it is not improbable that the trade to the East and also to the Argentine Republic will increase. In Germany the period of liquidation seems to be coming to an end, and a return of confidence may be near at hand, but the recovery after the serious depression will naturally be a slow one. Much will depend upon the United States. Continued activity will benefit Europe as well, while a sudden break would cause a stoppage of American demand and perhaps a flood of American products into Europe."

COLONIZATION OF THE SOUTH-WEST.

Aid and Inducement Offered by the Missouri Pacific Railway.

The Missouri Pacific Railway is bending every effort towards developing the agricultural, mineral, and industrial resources of the West and Southwest. To attain this end, it asks the aid and cooperation of every farmer, miner, merchant, and professional man along its lines.

The development of the products of any section of the country means just so much more capital to be spent in that section. Prosperous neighbors make a prosperous community, especially if they live and have their interests at home.

It is this class of persons that the Missouri Pacific Railway asks the patrons along its lines to invite to their sections. You furnish the names and addresses, and we will furnish the necessary descriptive and illustrated literature to induce them to settle in your community.

We wish to colonize the West and Southwest and offer every inducement

in the way of excellent transportation facilities and low rates to all prospective settlers and homeseekers.

H. C. TOWNSEND,
General Passenger and Ticket Agent,
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Great Colonist Movement.

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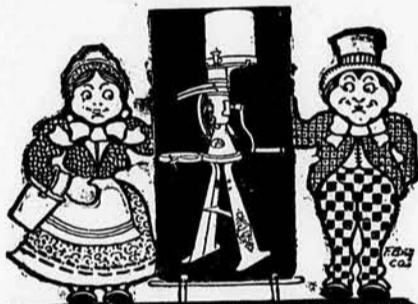
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New Factory Building Just Purchased By INTERNATIONAL STOCK FOOD CO., Minneapolis.
It is the famous Exposition Building built by the city of Minneapolis on the bank of Mississippi River and overlooking St. Anthony Falls. It is now to be used for manufacturing of their celebrated "International Stock Food." The building is 300 by 300 and has an addition 75 by 150. It is the largest manufacturing building in the Northwest and contains over 600,000 feet of space. It cost the city over \$400,000.

The Poultry Yard.

Lice.

The so-called "red mite" is really not red at all except when filled with the blood of the fowls. Individual treatment of poultry will not affect these pests, as they are nocturnal in their habits and the work must be done on the house. During the day they are found in the cracks of the poultry-house, in the sockets in which the roosting-poles rest in the nest-boxes or between these boxes and the walls, in fact, in any and all out-of-the-way places where they can hide. They must be very numerous indeed, if you find them on the fowls during the day, except on the sitting hen. I have heard of cases where an entire change of clothing was necessary after each visit to the poultry-house. In another instance I knew them to infest a dwelling-house and make life miserable for the inhabitants thereof. In the latter case the poultry-house, being on a town lot, was small and the owner painted the entire inside and its contents with a good lice-killer (undiluted) and killed them instantly. Cleaning the house thoroughly is good, but these mites are very hard to get rid of, and spraying with whitewash or even gasoline, turpentine or kerosene, are too slow methods if your house is badly infested. The following method is recommended by one who has tried and found it successful in severe cases: First, remove every chicken from the coop, stop all openings, close doors and ventilators. Procure from your druggist sulfur candles (use according to directions which will tell you the quantity for so many square feet of space), and ignite these candles in the morning, and about two hours before roosting time open the coops and ventilate thoroughly. Now procure a spray and with a solution of bichloride of mercury, one to 2,000 (which means one grain to 2,000 drops of water), and spray the roosting-poles and particularly under the side of them, also every crevice and wherever the mites are likely to secrete themselves. In about one week repeat this operation of fumigating and spraying. Usually two or three such operations are sufficient. Afterwards follow with any of the ordinary preventives. See that the coop is thoroughly cleaned daily, and the dropping-boards well dusted with road dust or ashes. The bichloride solution is very poisonous and must be handled with the utmost care, and not allowed to get into the food boxes or it will prove fatal to your stock.

The use of sulfur candles is advisable if your fowls have been afflicted with any disease. They are a powerful disinfectant and if properly used will kill all germs and prevent a spread of the disease. Sometimes treatment like the above is necessary where the owner never suspected the presence of mites until his sitting-hens died on the nests and he found the eggs covered with them. If your hens refuse to stay set, or if compelled to stay on the nests, stand and break the eggs, or die, look for mites, and if you find the eggs covered with mites do not expect the hens to cover both. If you are giving your hens good care, plenty of green food, grit, fresh water, green bone and other grains besides corn during the winter season, and are getting no eggs, look for lice or mites. If your fowls seem to be apt to contract diseases you will probably find they are enfeebled by the ravages of lice. The following are some of the methods used by people of my acquaintance to prevent lice from multiplying too rapidly. In every case the house must be thoroughly cleaned, as these are the only preventive measures. One lady places a moth-ball in each nest with the eggs before setting the hen. She also uses ashes sprinkled with kerosene for a dust bath, usually only a little kerosene, and uses this same preparation to dust her little polts. Another lady sprinkles her eggs with ashes and thinks this is a good lice-preventive. I only used moth-balls once and that was several years ago when I put one in a nest with some turkey eggs for which I had sent to a noted breeder. Only one turkey hatched and I blamed the moth ball, thinking the fumes too powerful, but this may not have been the case, as in my experience at least, eggs sent some distance by express do not hatch as well as if kept at home. As this one turkey above mentioned lived and proved to be a very nice hen she was worth much more than she cost me, although I paid a high price for the eggs. I have sprinkled the nest boxes with a liquid lice-killer but discontin-

ued its use, as eggs laid in these nests and left there only a short time were unfit to eat, as they tasted of the lice-killer, and that being the case the fumes would surely be too strong for the hatching chick. The method in use on our farm now is to not set hens in the house where other hens roost and lay, and to give each hen a practically clean nest with fresh straw, or whatever nest material is used, to dust the hen with a good insect powder before setting her and after the hatch is off, and to put some of the powder in the dust-bath, which of course, is provided for her. I dwell so much on the sitting-hen because here is the starting-point of the lice. The users of incubators and brooders are not apt to have chicks killed by lice if they use ordinary care. It is well to not store the brooder in any poultry-house or shed occupied by fowls, as they have become infested with mites from carelessness in this respect. Where you have been watchful of your chicks and never allowed lice to get too numerous, you can "louse" them all quickly and well by removing the hens from the broods after they have retired for the night and springling them with lice-powder. If you remove the hen quietly the chicks will not be frightened and will stay huddled together so that a couple of shakes from the pepper-box covers them. Some of the broiler farms never have a hen on the place and so escape lots of work in fighting lice.

If your chicks or older fowls sneeze or shake their heads and have no disease of the mouth or throat or roup, it is probable that they have what are called the air-sac mites, so called because they invade the air-passage. When present in great numbers the fowls seem to have a disease of the air-passage. They grow thin and pale and lose flesh. There is difficulty in breathing, sneezing and sometimes a rattling sound in the throat. Look carefully in the discharge of the mucus from the mouth and nostrils and you will probably find small, round, white, or yellowish mites. They can not always be seen with the naked eye, being very small. The following treatment is recommended: Use a good condition powder in the mash, then disinfect the poultry-house thoroughly, using a good liquid lice-killer freely about the roosts and dropping-boards just before the fowls are ready to go to roost. Use a half teaspoonful of napreol in a bucket of drinking water. This may not cure the disease, but will often prevent its spreading.—Margaret C. Daly, in the Poultry Farm.

Yarding Turkeys.

We sometimes hear people give as an excuse why they do not raise turkeys that they are very much inclined to wander away and bother neighbors and for that reason they forego the pleasure of having turkeys of their own raising for Thanksgiving and for sale. Of course if one is only to have turkey at this fashionable date it will scarcely pay to raise them. But since turkeys are good any season of the year and are profitable to raise we take it that almost every farmer could keep a few of them.

The villager is very much of the opinion that it is an impossibility for him to keep turkeys and yet it is possible to raise them in confinement. We believe it to be a mistaken idea that turkeys do not thrive in confinement. Some of the best fanciers of turkeys practice yarding and they report very good success. Of course the places where the turkeys are enclosed should not be too small. It will require from one to three acres for moderate sized flocks.

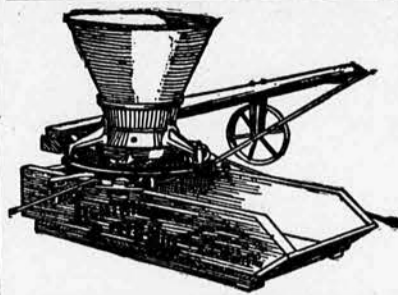
There are some advantages in yarding over the old plan of giving them all the range necessary. One is that the eggs will be easier gathered and found. Another is that it affords protection of the poults against predatory animals.

Turkeys will not fly over anything upon which they cannot alight. By reason of this habit poultry-netting will be found very excellent for fencing in turkey-yards. Those who have tried this plan say they have seen turkeys walking along a poultry-netting fence for a long time seeking a place where they may get out and never attempting to fly over.

Should any turkey show a disposition to fly out it can be prevented by tying a shingle by means of broad strings so that it will come under the wings. They will not try to fly with a shingle under one wing.

When kept in confinement they should be provided with many things they would get when on the range. Grit should be provided in abundance.

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They should have some meat food to take the place of insects they would get while out on a range.—Poultry Farmer, Des Moines, Iowa.

Feed and Care of Young Turkeys.

R. W. DAVISON, NEW JERSEY.

After the young are thirty-six hours old remove all to a good-sized coop and place the coop where there is plenty of grass. If the grass is long, mow it off. For early in the season be sure to have a movable board bottom to the coop and clean this off and sand every day. Dampness and filth mean death. After the weather settles and the ground warms up place the coop in the ground or grass and clean by simply moving it to fresh ground. Lice are the cause of nearly all the ills of turkeydom and kill more young ones than all else combined. Get rid of the lice on the old birds first by dusting them every week, while sitting, with insect powder and place green cedar leaves and branches in the bottom of the nests.

The first feed should be dry bread. Take one quart each of corn-meal, middlings and bran and one pint of sifted ground oats. Season with salt, add a little pepper, mix up with water or sour milk and add enough saleratus to raise it. Bake until done. Enough can be baked at one time to last several days. After the poults are several days old moisten the hard crusts in sweet milk, squeeze out dry and feed. Give a little every two hours. Feed on a clean board and be sure that none is left over to sour.

Feed everything as dry as possible, as sloppy or uncooked food is injurious. After the turks are a week old the feed may be scalded. The saleratus and sour milk should be left out and a little meat added, or cook a piece of fresh lean meat and feed a little of it once a day. Ground bone may be put in the food at all times if it is sweet and good. When the poults are 10 days old commence to feed whole wheat for supper and when a month old feed cracked corn for supper and wheat at noon. During all this time keep on with the scalded feed between the times when wheat or corn is given. After 4 weeks old feed only four times a day. When 4 months old twice daily is sufficient and the feed may consist of whole grains, which should be kept up until at killing time, if you want to have the stock large. Feed very little corn unless you want to fatten them for market. After turkeys "shoot the red," or



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A. H. Duff, Larned, Kans.

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EGGS—For hatching at half former price. To still farther introduce my White and Barred Plymouth Rocks, I will sell eggs at \$1 per 15 from White Rocks scoring 94 to 96% and Barred 90 to 93. Circular free. You can have only one setting. Order at once. Herbert Johnson, Live Stock Auctioneer, Chanute, Kans.

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COCKERELS—Indian Games and Black Langshans, farm-raised, price \$1 each, if taken soon. H. Baughman, Wymore, Neb.

SILVER LACED WYANDOTTES—Exclusively the American Beauties. Choice birds. Sixteen years a breeder. Eggs \$1.50 to \$1 per 15. D. Tennyson, Frankfort, Kans.

BARRED PLYMOUTH ROCK EGGS—From fine flock Hawkins strain, 15 for \$1.50; 45 for \$3. Annie Wynkoop, Bendena, Doniphan Co., Kans.

EGGS—At \$1 per setting from our White Plymouth Rocks or White Wyandottes that will produce fine stock. W. L. Bates, 1829 Park Ave., Topeka, Kans.

SNOWFLAKE POULTRY FARM—R. G. W. Leghorns, W. Wyandottes, W. Guineas. Eggs \$1.50 per 15. Mrs. Winnie Chambers, Onaga, Kans.

EGGS FROM GEM POULTRY FARM are sure to hatch high-scoring Buff Plymouth Rocks. No other kind kept on the farm. 15 for \$2; 30 for \$3.50. Satisfaction guaranteed. M. B. turkey eggs, 11 for \$2. C. W. Peckham, Haven, Kans.

WHITE WYANDOTTES EXCLUSIVELY—Eggs—15, \$1.50; \$2.50; 100, \$5. MRS. E. F. NEY, Bonner Springs, Kans.

WINNERS—White and Barred Rocks. Send for circular. Burton's Poultry Yards, Fort Scott, Kans.

COLLIE PUPS AND B. P. ROCK EGGS—I have combined some of the best Collie blood in America; pups sired by Scotland Bay and such dams as Handsome Nellie and Francis W. and others just as good. B. P. Rock eggs from exhibition stock; none better; 15 years' experience with this breed. Eggs \$1.50 per 15. Write your wants. W. B. Williams, Stella, Neb.

SCOTCH TERRIERS—Finest bred in this country. Heather Prince, the champion of Scotland, and sire of Nosegay Foxglove, out of the champion imported Romney Ringlet, best service at our kennels. G. W. Bailey, Beattie, Kans.

Rose Comb Brown Leghorns—Exclusively. Farm raised. Eggs per setting of 15, \$1. Incubator users write for special prices in 100 lots. P. H. MAHON, R. D. No. 3, Clyde, Cloud Co., Kans.

Sunny Summit Farm Pure-Bred Poultry. Silver Spangled Hamburgs, American Dominiques, S. C. and R. C. Brown Leghorns, Barred and Buff Rocks, S. C. Black Minorcas, Mammoth Bronze Turkeys. Eggs \$1 per 15; turkeys \$2 per 9.

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TWO GIRLS

hatch 2,183 chicks; one woman 716; one man over 2,000. New System again beats incubators. Booklet free. F. GRUNDY, Harrisonville, Mo.

are full feathered, they will largely take care of themselves, but before that they will require constant watching. Build a little pen, with some short boards, in front of each coop and don't let the little fellows out of this for the first 4 or 5 days. After that time they may be let out on every fair day—after the dew is off. Also let the hen out with her brood after the seventh day. Always know where your turkeys are and if a shower comes up get them under cover as soon as possible.

Story of an Egg.

If a fertile egg has been incubating for even twenty-four hours, a small speck is visible, but it is not discernable in thick or dark-shelled eggs; but if the egg were broken open, it would be perceived that the vesicle had enlarged, and radiating from it would be a number of minute blood-vessels.

On the third day these blood-vessels will have completely surrounded the yolk, and the small dark spot in the center will have developed into the eye or brain. The brain is the first part to take definite form.

On or about the fourth day a respiratory membrane is formed, and the egg gradually increases in opacity until after the seventh day it is not practicable to form any judgment of the progress of the chick by means of light.

By the tenth day the bones of the skeleton have begun to assume consistency, the internal organs have a decided shape, the heart is formed, and all vital parts are complete. On certain parts feathers are growing and all development from hence is rapidly carried on.

On the twelfth day heat is given out, and this is easily demonstrated to those who use incubators, as less heat is required to keep up the temperature, and it is generally necessary to move back the weight.

The chick reaches its perfect form on the fifteenth day, and from thence grows in size, until, on the nineteenth day, respiration through the lungs takes place.

Up to within a few hours of the exit of the chick from the shell, the egg bag lies outside the bird. Immediately before hatching it is absorbed into the intestines, and forms sufficient sustenance for the chick for twenty-four hours. Therefore, people should avoid attempting to cram the little birds until this time has passed, when, if they are healthy, they will help themselves readily enough.

If all has gone well the eggs will begin to chip not later than the twentieth day, and the chick leaves the shell unassisted in from twelve to eighteen hours from after the first appearance of the bill.—Massachusetts Ploughman.

England's Bread.

A never-ending discussion is now active in England on the important question of the "English Food-Supply in Time of War." A glimpse of this discussion may be interesting. Following is a brief letter which appeared in the Millers' Gazette (London) of May 6:

"In your issue of April 15 you refer to a letter from Mr. W. P. Wood in the Times, on 'Our Food-Supply in Time of War.' Mr. Wood justly condemns National granaries, filled with wheat reserves, as an intolerable interference with merchants engaged in bringing to this country the foreign wheat we require, but he proceeds to suggest a return to protective taxation. That would extinguish British traders in foreign wheat, including Mr. W. P. Wood, the present president of the London (Foreign) Corn Trade Association. Mr. Wood wants the already over-burdened inhabitants of the United Kingdom to make their bread dearer to an unknown extent by excluding foreign wheat, and raising the price on English wheat sufficiently to induce English farmers to grow annually some far larger quantity of it. Many of your readers may be surprised to learn that just before proffering this suggestion, Mr. Wood had added his signature to a manifesto, warning all concerned that English wheat rose to famine prices during war times, when we heavily taxed foreign wheat, grew a self-supporting quantity of English

wheat, and held complete command of the sea. Mr. Wood's proposed remedy utterly failed to raise wages, or to prevent famine prices. Mr. Wood asserts that protection is defense of English trade and English labor. I assert that free trade gives profitable employment to a much greater number of Englishmen than was, or could be, employed under the protective policy advocated by Mr. Wood. If we again place our wheat supply under the control of English landlords and English farmers, if we again subsidize them to grow a very big crop of wheat, can anybody comprehend how this would benefit Canadian farmers, on whose behalf Mr. Wood rightly waxes eloquent? Last Friday, May 1, the Tory Prime Minister, publicly informed Messrs. Chaplin, Wood & Co. that they can not effectually protect English farmers without seriously injuring the English community. I cordially agree with those who feel confident that we are safer than ever now that free trade has created for us inexhaustible sources of supply abroad. Food is not contraband of war, and would reach us as freely in steamers under neutral flags, supposing, with Mr. Wood, that our magnificent navies proved inadequate. But this I do not suppose. Of course we should have to pay dearly, but not nearly so dearly as we should have to pay if foreigners had ceased to grow wheat for us, and we had again become dependent upon English farmers, and the uncertainties of the English climate."

Forest Reserve in Kansas.

Secretary Hitchcock will soon issue an order withdrawing 73,000 acres of land in Finney, Grant, Kearny, and Haskell Counties, Kansas, from homestead entry. The order will be made in compliance with a request from Secretary Wilson of the Department of Agriculture. The bureau of forestry has completed its plans for the establishment of a forest reserve of 94,000 acres in southwestern Kansas and, immediately upon the order from the Secretary of the Interior, will begin its work.

The boundaries of the reserve are irregular. The tract will include 73,000 acres of Government land, 4,500 acres of school land, and 16,000 acres of private land. The northeastern boundary of the tract will run to within one mile of Garden City. The nursery will be near Garden City in the irrigated district. The effort will also be made to cultivate the red cedar, which is now found in several localities in Kansas.

Two forest reserves were established last year in Nebraska, aggregating 210,000 acres. One is in Thomas County in the central part of the State and the other in Cherry County, in northern Nebraska. Former experiments on a small scale had positively demonstrated the success of tree-culture in these sections of the State.

The Cost of Threshing.

The Threshers' Protective Association has issued a schedule of prices for work for the coming wheat harvest, agreed on by the threshers of the wheat-belt. This is the price-list that farmers will have to pay, as every thrasher practically in the wheat counties has joined the combine, the figures being by the bushel: Wheat, with hands and teams, 10 cents; with hand and cook-shack, 7 cents; with hands 6 cents; without hands, 4 cents; oats, with hands and teams, 5 cents; with hands and cook-shack, 4 cents; with hands, 3½ cents; without hands, 2½ cents; rye, 1 cent above wheat; millet, 9 cents with hands; alfalfa, with hands, 75 cents and \$1; Kafircorn, 3 cents. Farmers are to haul coal.

In some neighborhoods farmers are forming cooperative threshing companies and are buying their own outfits, thus being independent of the threshers' association.

If one could only trade troubles with someone how happy we should be! Read the KANSAS FARMER and have no troubles to trade.

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The Western Swine Breeders' Journal, of Lincoln, Neb., is a very valuable publication for Western swine-raisers. The price is 50 cents a year. The Kansas Farmer is \$1 a year. For a limited time we make this great offer: To any of our subscribers who will send us two new subscribers for one year and enclose a dollar bill, we will make them a present of the Western Swine Breeders' Journal one year free, thus giving \$2.50 in value for only \$1. Address Kansas Farmer, Topeka, Kans.

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Miss Alice Bailey, of Atlanta, Ga., tells how she was permanently cured of inflammation of the ovaries, and escaped the surgeon's knife, by the use of Lydia E. Pinkham's Vegetable Compound.

The universal indications of the approach of woman's great enemy, inflammation and disease of the ovaries, are a dull throbbing pain, accompanied by a sense of tenderness and heat low down in the side, with occasional shooting pains. On examination it may be found that the region of pain will show some swelling. This is the first stage of inflammation of the ovaries.

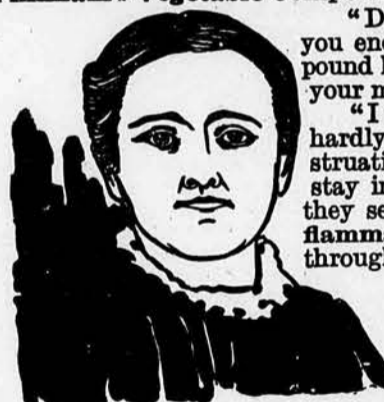
"DEAR MRS. PINKHAM:—I wish to express my gratitude for the restored health and happiness Lydia E. Pinkham's Vegetable Compound has brought into my life.

"I had suffered for three years with terrible pains at the time of menstruation, and did not know what the trouble was until the doctor pronounced it inflammation of the ovaries, and proposed an operation.

"I felt so weak and sick that I felt sure that I could not survive the ordeal, and so I told him that I would not undergo it. The following week I read an advertisement in the paper of your Vegetable Compound in such an emergency, and so I decided to try it. Great was my joy to find that I actually improved after taking two bottles, so I kept taking it for ten weeks, and at the end of that time I was cured. I had gained eighteen pounds and was in excellent health, and am now.

"You surely deserve great success, and you have my very best wishes."—MISS ALICE BAILEY, 50 North Boulevard, Atlanta, Ga.

Another woman saved from a surgical operation by Lydia E. Pinkham's Vegetable Compound. Read what she says:—



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"I will tell you how I suffered. I could hardly walk, was unable to sleep or eat. Menstruation was irregular. At last I had to stay in my bed, and flowed so badly that they sent for a doctor, who said I had inflammation of the ovaries, and must go through an operation, as no medicine could help me, but I could not do that.

"I received a little book of yours, and after reading it, I concluded to try Lydia E. Pinkham's Vegetable Compound, and I am now a well woman. I shall praise your medicine

as long as I live, and also recommend the same to anyone suffering as I was."—MRS. MINNIE OTTOSON, Otho, Iowa.

All sick women would be wise if they would take Lydia E. Pinkham's Vegetable Compound and be well.

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The What Next of the Good Roads Problem.

(Continued from page 565.)

log, placing the two pieces about thirty inches apart (with the flat sides both facing in the same direction), and pinning them together. The lower edge of the front piece is protected with iron; an old wagon-tire will do. The log should be ten or twelve inches thick and about ten feet long. Fasten a chain or heavy wire a foot or eighteen inches from each end by which to haul it. Hitch the team so the drag will move the dirt toward the center of the road. The hitch is next in importance to the time at which the dragging is done. The right time is just as the road dries after a rain, or when it is thawed on top during the winter and spring, and it should be dragged every time.

"Of course a smooth surface for travel is thus produced, but a more valuable result is that the road will shed the next rain instead of absorbing it. This is the reason why the road should be dragged every time, so that it always will be ready for the next rain. If I do not say anything else here today that is remembered—and if the people in this association do not get any other thought that they can carry home with them, I want them to get that idea—the way to make a good dirt road is to keep it so that the next rain will not go into it. This means dragging only about once a month on an average. I have kept track of it in order that I might be able to speak with authority as to the amount of time, and I find that the average is twelve times a year, that is only once a month; not much to secure a good road. I drag from own front gate to my neighbor's front gate, a half mile. It takes about twenty minutes. I don't make very many trips to town before I have regained the time I expended in dragging, to say nothing of the gain to my neighbors and the general public.

"This method is very simple, as I have said, but to no one who is familiar with the ordinary dirt road under all conditions of season and weather, the results are little short of marvelous. Teams pass here at a sweeping trot when other roads are almost impassable. When the other roads are in such condition that loaded teams must be rested every few rods, the same loads are moved over this road at a *loc* walk and without resting.

More dirt can be moved and more of a show can be made dragging the road during thaws in winter weather than in any other season. At such a time the soil is crumbly and mealy and pushes to the center very easily. If the road is dragged two or three times in March or April it will show the effect all summer. That statement seems rather improbable and yet it is true that where I have succeeded in getting a neighbor out in April, May, or even March to go over his road just once or twice, that all through the summer you could tell it had been dragged. The weeds do not grow up on the edge of the road with a slant toward the inside as they do on a road that has not been touched after winter travel. But if one wants a road such as I have tried to tell you about he must live up to the motto, 'Keep your road ready for the next rain,' and to secure full satisfaction he must carry out the idea for several years. However do not allow this to discourage anyone—but make a start.

"Nor is an iron-faced instrument absolutely necessary. I began with a drag made of an old post and a frost-bitten pump-stock, held together by two or three short pieces of inch board nailed on top. It pulled to pieces at the beginning of the second year. And at first I simply drove a team straddle of one wheel-track, going, and of the other wheel-track coming back, merely breaking the rim of earth that rises on each side of the wheel-track and leaving the road in good condition for teamsters to 'straddle the rut.' After smashing both ruts I remember I used to look down the road approvingly, pat myself on the back and think I had the nicest road in the country; and while I did at that time, it would look very rough to me at present. These days if my road does not look as smooth as a quarter-stretch I expect people to criticize it. I hope you will not think I am exaggerating. Mr. Waters was there and saw it and he will bear me out when I say the road in front of my house and for half a mile south to my neighbor's is in as good condition as any quarter-stretch at your fair-grounds, and it is that way most of the time—of course not while it rains—it is not that way until the mud dries up; but just as soon as it dries, and it dries a day or two before the other roads,

I get over it with a drag just once and have another quarter-stretch. If I don't get over it the neighbors are after me to know why I don't. This shows the power in such a condition of education. The people are accustomed to finding the road so that they can drive over it as fast as they wish, and if they can not do so they want to know 'what's the matter with King.'"

Importance of Good Roads in War and Peace.

At a good roads convention held at Charlottesville, Va., the chairman introduced General Nelson A. Miles as follows:

We have here the General commanding the armies of the United States. It is a most honorable position, and it is a very great satisfaction to us all to find a gentleman occupying that eminent position who takes an interest in the public policy of the counties, cities, and States in our Union. The question of good roads may become momentous even to our friend General Miles, because one of these days it is possible we may get into war with a great nation, and we shall want good roads to move our soldiers and artillery out to our borders, and possibly to move them back again in case of any little trouble at the front. [Laughter.] General Miles has had great experience in all that work. He knows how to build an Indian path; he knows how to make a wigwag; and he knows how to build roads on which to move troops and supplies. I know I represent the sentiment of the people here to-day when I bid him welcome to Charlottesville and to the county of Albemarle. [Great applause.]

General Miles said: "I am gratified to be with you on this occasion and to enjoy a day of pleasure and recreation and rest from the duties and cares and anxieties and perplexities and responsibilities of life at the Capitol. I am delighted to come out into this beautiful country, to breathe again the pure air of Virginia and find myself here in this beautiful country on this spring day. In fact I may say that I always loved Virginia, for I remember a long time ago, myself and some companions struggled for four long years to see more of your country. We tried to get down here in this part of the country, but we encountered two almost insurmountable obstacles. One was the wretched condition of your roads, especially at a certain season of the year. I remember they were almost impassable for horses, mules, or wagons, or for those of us who were walking. It was almost impossible to make any progress, for the oftener we put down our feet the more of your real estate we took up.

"And then we encountered another obstacle. There seemed to be a certain prejudice against strangers [laughter], especially those coming from the section from which we came. I thought the people of Virginia at that time were the most exclusive people I ever saw.

"But notwithstanding that great contest, in which Americans were pitted against Americans, finally a mantle of peace was spread over the great theater of war and left a feeling of respect and admiration for the courage and fortitude and sacrifices of these Americans contending for what they believed to be right; and I rejoice today to meet here in this delightful part of Virginia, a body of Americans interested in one of the noblest enterprises that can attract the attention of Americans, and also to find representatives from different States in the United States interested in the same great enterprise.

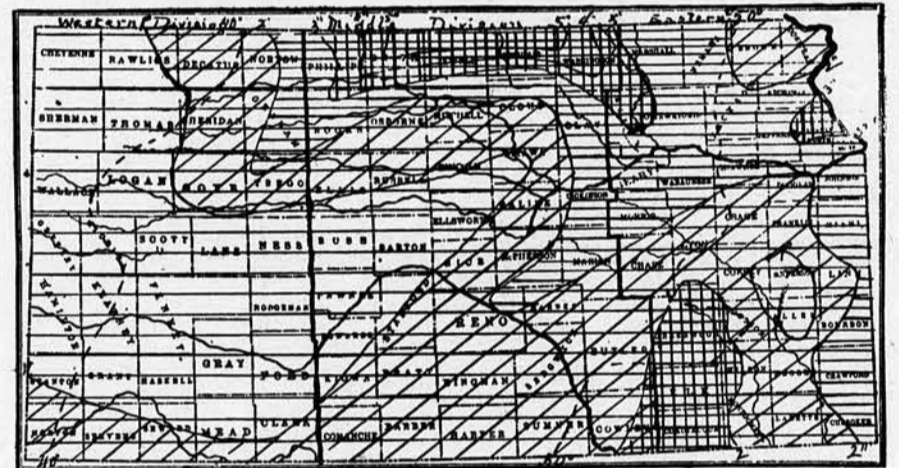
No more fitting place could be found for a convention of this character than here, at the home of one of Virginia's most prominent statesmen, a man who did so much to block out and frame the great Constitution, the great principle of government which we all enjoy, which our fathers before us enjoyed, and which we hope to transmit to our children and our children's children. [Applause.] Not only was that one of his great works, but he contributed largely to acquiring that invaluable western section of the country that is now a part of our National domain. It was through his wisdom and statesmanship that we are now enabled to look upon that section as our own and one of the most important parts of the United States. It is also quite fitting that this convention should assemble here near the birthplace of two of the greatest explorers and pioneers that our country has produced; those two men, who under the direction of Jefferson, paved the way of civilization across the continent. I refer to Lewis and Clarke. [Applause.]

"It is the explorer and the pioneer that studies the trend of the mountains, the currents of the rivers, the topography of the country, and blocks it out and maps it. Then follow the saddle routes and the rude roads of the pioneer and the home builder. These are followed by the more extensive and more important lines of communication and commerce, and finally there has been built up a system of railways exceeding anything that is known on the globe. We excel all countries in that respect, and our wonderful system of railways probably almost equals those of all other countries combined. Capital, genius, and enterprise have been devoted to building these great lines of communication. Now it is important to turn the attention of our people to improving the roads that are feeders to these great trunk lines. It is estimated that at least 95 per cent of products have to be moved over the common roads before they reach the railroads or the lines of steamboat communication.

"The United States Government has appropriated \$480,000,000 for rivers and harbors during the last seventy-two years, and only about \$8,000,000 for the improvement of the country roads. Now it appears to us that it is a fitting time to draw the attention, not only of the people that are immediately interested, but of your representatives, both in the United States and the State legislative bodies, because it is one of the projects that is bound to contribute to your welfare and happiness. If there is one thing that indicates the intelligence and civilization of a people it is their means of communication. We find in the ancient cities of the old countries, such as Greece and Rome, the roads there indicate the high intelligence of those people.

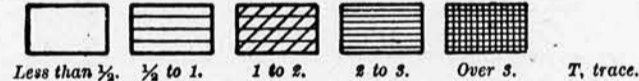
"I shall not undertake to go into the subject of road-making, or what the

Rainfall for Week Ending May 16, 1903.



Minimum temperature shown by broken lines.

SCALE IN INCHES.



advantages of it may be to this audience. All that can be much better explained by gentlemen who have preceded me and who may follow me, but yet I will say that I do not know of any question that has been so much neglected or that is entitled to more consideration than this. The safety, the welfare, and the perpetuity of our Republic of eighty millions of people depend largely upon the intelligence of its citizens, and there is no one thing that contributes more to the intelligence and patriotism of a nation than the communication and dissemination of intelligence through the postal department of our Government. It brings the daily intelligence of the world, it brings to your door the history day by day of the affairs, not only of your own country, but of the entire world; it brings to your door the modern literature, the books and periodicals of the world; it brings to you business communication that is so important for an intelligent, enterprising country. Now it is believed that some measure can be adopted by which to promote the construction of better public roads, and thus postal communication and commerce may be still more and more improved.

"I thank you for the opportunity of being with you, and wish you all prosperity and happiness. [Applause.]"

There is Nothing Better.

Layton, Utah, March 25, 1902. I used Watkins' Vegetable Anodyne Liniment for bad corks, and I think there is no better medicine in the country than that. I take it in the following manner: Just take a teaspoonful in about a third of a teacupful of warm, sweetened water before going to bed; it soon commences to do its work. I break out in a sweat and I am all right in the morning.—J. E. Wiggill.

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WEEKLY WEATHER-CROP BULLETIN.

Weekly weather-crop bulletin for the Kansas Weather Service for the week ending May 19, 1903, prepared by T. B. Jennings, Station Director.

GENERAL CONDITIONS.

The temperature has been more nearly normal this week, with abundant rains in all parts of the State and excessive in many portions, decidedly so in the central northern counties where it ranged from three to over five inches.

RESULTS.

EASTERN DIVISION.

Wheat continues in good condition; it is well headed in Chautauqua and Allen and is heading in Wyandotte and beginning to head in Leavenworth. Rye has headed well in Allen. Corn planting has been delayed by rainy weather this week, though some planting has been done; corn is coming up but the ground is too wet to cultivate it and weeds are appearing. Oats have grown rapidly and are doing well. Grass has grown finely and pastures are very good. Alfalfa is doing well, has made good growth, and in the south is about ready to cut. Potatoes and gardens are growing rapidly. Clover is blooming in Montgomery. Flax is doing well in Crawford. Grapes are putting out new shoots on which new clusters are appearing. Strawberries are fine and abundant in the south and promise a

large crop in the central counties. Many apples are on the trees in Coffey.
Allen—A week of cloudy and misty weather; very little farmwork done; rye and wheat headed with good prospect; grapes are sending out new shoots and blossoms.
Anderson—Ground very wet and field work at a standstill; corn not yet half planted; most that is planted is up but of bad color and with an irregular stand; sunshine needed.
Atchison—Only about half the corn planted; ground too wet to make progress; fruit nearly all dropping; grass growing finely; oats, potatoes and garden truck growing rapidly; no heavy rains to wash the ground.
Bourbon—Corn planting delayed by rain; none planted the past week; oats and grass growing rapidly.
Brown—Crops in good condition; too wet to plant corn; no damage done by heavy rains.
Chase—Farmwork much retarded by wet weather; no corn planted during the week; corn coming up slowly with fairly good stand; potatoes and vegetables growing well but behind the season; alfalfa fine; wheat normal.
Chautauqua—Very wet week; only one day of sunshine; wheat doing well and is well headed; oats doing well but not a large crop; corn doing well considering the rainy weather; most of replanting done; Kafir-corn now being planted; alfalfa will make a good crop.
Cherokee—All farmwork stopped by wet weather; one-third of corn to plant yet; corn that is planted is becoming weedy; oats doing well; wheat improving.
Coffey—Very little farmwork done during the week on account of rain; much corn yet to plant; fruit not so badly injured as was feared; plenty of apples on trees; raspberries and blackberries beginning to bloom, with fine prospect.
Crawford—Crops doing well for such wet weather; corn not all planted; flax seems to be doing well; large crop of fine strawberries; alfalfa about ready to cut; wild grass grows slowly.
Doniphan—Wheat looking better since the rain; oats looking fairly well; grass growing rapidly; corn planting delayed by rain; will be some fruit.
Douglas—Too wet for any farmwork.
Elk—Sunshine and dry weather badly needed; no farmwork done this week.
Franklin—Much corn now planted; tame grass sown this spring is doing well; ground generally in fine order.
Greenwood—Too wet for farmwork; much corn yet to plant; corn that is planted is coming up; vegetation generally is growing slowly.
Jackson—Corn planting retarded by wet weather; some corn to be replanted on low ground; wheat and oats doing well; grass growing rapidly; scarcely any fruits in the orchards.

Jefferson—A rainy week; ground too wet for work.
 Johnson—Too wet for farmwork; no complaints except too much rain.
 Leavenworth—Wheat looks well and is beginning to head; gardens and corn damaged by cut-worms; cabbage plants suffering the most; too wet for farmwork; pastures good.
 Linn—Rains have stopped corn planting and all farmwork; corn about half planted; grass growing rapidly.
 Marshall—Too wet for farmwork; corn coming up well but there is much yet to plant; wheat and oats are doing well; pastures are good; ground now in good condition and corn planting will be pushed; prospects for fruit are better.
 Montgomery—The week was cloudy and rainy, delaying corn planting and the cultivation of the early planting; wheat, oats and grass made good growth; clover blooming.
 Morris—No work in the fields till last of the week; alfalfa making good growth; grass doing well; corn that is planted grows slowly; gardens growing well; grapes showing some fruit buds again.
 Osage—Corn up and looking well except in low lands, where much rotted in the ground; ground too wet to work; very little cane and Kafir-corn planted.
 Pottawatomie—Alfalfa doing well; pastures better than usual at this time; the rains have delayed corn planting but have been favorable for sweet-potato setting which has progressed rapidly; strawberries will be plentiful.
 Riley—Continued rains have interfered with corn planting; all crops are doing well.
 Shawnee—Too much rain; corn planting delayed; oats growing rapidly; pastures good; cattle doing well; potatoes up; gardens fine.
 Woodson—Too wet for farmwork; all crops doing well; alfalfa about ready to cut; corn is for the most part at a stand; most of the planting is done; home-grown strawberries are on market.
 Wyandotte—Too wet for any farmwork; wheat heading; corn a good stand; pastures fine.

MIDDLE DIVISION.

Wheat, generally, is in fine condition, though the Hessian fly has appeared in some fields in Crowley, Reno, Harvey and McPherson. It is heading in the South and has begun to head in Osborne; corn needs sunshine; there will be much replanting in the northern counties where the heavy rains occurred; Oats are in good condition and doing well; rye is heading; alfalfa is growing well; grass is generally ready to cut in several counties; grass is generally doing well; potatoes are growing nicely again and grapes are putting out new shoots and new buds; apples are not promising; cherries and plums promise light crops; peaches and apricots give some surprise; gardens are growing finely; strawberries are in bloom in Clay.
 Barton—Ground in fine condition; wheat grows but slowly; corn not doing well, on account of cool weather; alfalfa nearly ready to cut; pastures fair, and stock in fairly good condition.
 Clay—The river bottoms were flooded; corn that was planted late and pastures are doing well; strawberries are in blossom; grapes are recovering from the freeze and show some bloom; there will be a few cherries and plums, but apples are not so promising.
 Cloud—Upland wheat in fine condition, but that on low land was under water for nearly three days; much corn washed out.
 Cowley—The wheat in some localities is being damaged by some insect; corn needs sunshine; grass fine; alfalfa about ready to cut; there promises to be a moderate crop of fruit.
 Harper—Wheat generally doing well, some fields reported damaged; oats good; corn still very backward.
 Harvey—Corn, generally a good stand but grows slowly; fly working on much of the wheat; some fields look quite yellow; alfalfa very good, beginning to bloom; gardens and potatoes growing well; fruit badly damaged.
 Jewell—Excessive rains have delayed corn planting; considerable that was planted has been washed out; alfalfa, wheat and rye doing well; oats backward.
 Kingman—Rye and May wheat heading and in good condition; corn backward; pastures fine; apricots and peaches promising fair yield; ground wet.
 Lincoln—A wet, cool week; no farmwork done during the week; much corn to replant; alfalfa and wheat doing well; stock of all kinds looking well, but pastures are not good yet.
 McPherson—Fine growing weather; everything looking better, except some fields of wheat infested with fly.
 Osborne—Wheat heading out; weather of past week very beneficial to all crops; new leaves starting on the trees; corn alfalfa and garden stuff growing vigorously; too wet in some places to plant corn.
 Ottawa—Highest water in Solomon river since 1878; some damage to crops on low lands; wheat, oats, alfalfa and grass fine; corn planting progressing; poor stand in some of the early planting; rye heading; potatoes and gardens growing nicely.
 Phillips—Wheat in fine condition; corn planting being rushed; most of the early planting will have to be relisted.
 Reno—Wet and cloudy week; poor growing weather; wheat damaged by the fly and does not look well; corn all up but grows very slowly; oats look well; apples, cherries, plums and apricots will make very light crop; peaches not so badly damaged; grapes putting out new fruit buds.
 Republic—Too wet to work in fields except in sandy bottoms; early planted corn on slowly; good weather for wheat and oats.
 Russell—Vegetation needs sunshine; no corn planted during the week; corn coming up slowly; potatoes and gardens look fine; pastures doing well.
 Saline—Wheat making too rank a growth; early planted corn generally coming up well, but there is much to plant yet; apples dropping badly.
 Sedgewick—Wheat looks fine; oats, rye and corn are doing well; the warm showers have caused a rapid growth of all vegetation; with the exceptions of grapes the fruit prospects were but little damaged by the April freeze.
 Smith—Crops much damaged by floods; most of the corn on rolling ground needs replanting; alfalfa and wheat growing rapidly, the latter jointing; pastures good; potatoes up; no fruit this year.
 Stafford—Ground just dry enough for all kinds of farmwork; all crops growing and doing well.
 Sumner—Wet, cloudy weather; water still standing in some corn-fields; cut-worms are working on the corn; oats doing well; early wheat heading; hard wheat good color but much of it will be short; damage by fly is reported in the eastern part of the county; alfalfa growing well.
 Washington—Ground too wet to work; poor stand in early-planted corn; much corn washed out; small grain and alfalfa doing well; millet coming up nicely; wild grass growing slowly; stock doing well; garden truck backward; fruit of all kinds a failure.

WESTERN DIVISION.

Wheat has made fine growth during the week, is in good condition, and in Thomas is jointing; oats and barley are doing well; corn is coming up, but it needs sunshine; planting is delayed by rains; rye is heading in the northern counties; Alfalfa is doing well, though late, in Finney; it is slightly below the average in Ford; it is doing well in Hodgeman and Lane; grass grows slowly in the South, but is good in the North and cattle are doing well; Finney is promised fair crops of

rasberries and late strawberries with a few grapes.
 Clark—All crops looking well, but need warm sunny weather.
 Decatur—All crops doing well; rye heading; ground dry enough to work latter part of week; corn planting being pushed; early planting up.
 Finney—Barley, oats and wheat doing well; alfalfa coming out well but will be two weeks late; range grass becoming good; cattle and horses beginning to thrive; fruit all falling from the trees; prospects for a fair crop of late strawberries and raspberries; a few grapes.
 Ford—A cool, cloudy week; grass growing very slowly; wheat generally in fine condition; corn a good stand, but needs sunshine; barley fair, but needs warmer weather; first crop of alfalfa will be slightly below average.
 Grant—Grass growing nicely; ground too wet for cultivation; weather too cool for crops to grow.
 Hodgeman—Most all farmwork at a standstill; much prairie is being broken up this spring; wheat looks fine; alfalfa is doing well; corn is very slow.
 Kearney—Heavy rains over the greater portion of the county; weather cool; crops growing slowly.
 Lane—Too cool and cloudy; corn coming up, but looks yellow; alfalfa starting up from the ground since the freeze; farmwork delayed by wet weather.
 Morton—Not much plowing or planting yet.
 Ness—Wheat, much fine growth; feed planting in progress; stock doing well.
 Sheridan—Corn planting retarded by recent rains, but it is nearly all in; wheat and grass in fine condition; alfalfa damaged some by the freeze.
 Sherman—A good week for work; corn and alfalfa doing fine; winter wheat in fine condition; a little cool for vegetables; oats and barley growing slowly; stock doing well on grass.
 Thomas—Wheat jointing; rye beginning to head; corn planting progressing rapidly; very large acreage; early-planted coming up; barley fine; range grass becoming plentiful.
 Trego—Corn backward; alfalfa is falling and turning yellow in spots; wheat making a rank growth except fields that were not properly put in; potatoes and gardens looking well.
 Wallace—All vegetation recovering from the cold spell; still rather cool for gardens; prospects for some apples and cherries; alfalfa looking well; barley, rye and wheat fine; planting cane and Kafir-corn for forage; range grass good; cattle doing well.

J. W. Rippey, the enterprising secretary of the Missouri State Fair, has issued one of the most beautifully illustrated pamphlets reporting on the fair of 1902 that we have ever seen published for such a purpose. It is illustrated with cuts showing the principal buildings and contains a complete report of the proceedings of the board and of the State Fair for 1902, followed by newspaper comments, at the head of which stands those made by the Kansas Farmer. By reference to page 1239 of our issue of December 18, 1902, our opinion of the management of this, the only clean State Fair within our knowledge, may be had.

THE MARKETS.

Kansas City Live Stock and Grain Markets.

Kansas City, Mo., May 18.
 Cattle receipts here to-day were only 4,500 head, a light run, but Chicago got 29,000 head and set the pace for other markets to follow, recording as she did a decline of 10@15c. The local trade was slow and prices were 5@10c lower. Tops brought \$5.05. They were marketed by C. G. Muehler Hanover, Kan. The bulk of the fat steers sold at \$4.40@4.00; heifers, \$4.00@4.60; cows, \$3.25@4.25. Hogs were in good supply, the run aggregating 6,000 head. Five points had 6,300 head too big a supply to sustain prices. Values fell off 10c. Tops brought \$6.47 1/2 and the bulk of sales was at \$6.20@6.40. Sheep receipts to-day were the heaviest of the year, amounting to 12,019 head, mainly Texans. Lambs were in good supply and broke 10@15c top Colorados selling for \$7.35. Muttons sold off about 10c. The horse run was right at 600 head and the first big break of the season was recorded, the market declining \$5@10.
 Towards the close of last week heavy cattle sold dangerously near the low point of the year. Lighter grades of steers and heifers held up fairly well, however. In a short time grass stock will be due and then there is expected to be a sharp discrimination between the corn-fed and grazed stock. Among those marketing the highest-priced cattle last week were: Faris Bros., Carneiro, Kas., \$5.25; Jos. H. Wiley, Alma, Neb., \$5.20; John I. Burgess, Louisville, Kas., \$5.20; George Blood, Sedgwick county, Kas., \$5.20; Ed. Blood, \$5.00; W. S. Bryan, Horton, Kas., \$5.00; Rogers & Percy, Odessa, Mo., \$5.15; J. B. Fruger, Junction City, Kas., \$5.15; J. A. Wilson, Benton, Kas., \$5.10; John Standish, Nortonville, Kas., \$5.10; Dave Korkill, Nortonville, \$5.00; G. H. Wight, Antelope, Kas., \$5.00; J. W. Wilcox, Sylvan Grove, Kas., \$4.72 1/2; heifers; William Cassidy, Beattie, Kas., \$5.05; steers; J. D. Filler, Mayview, Mo., \$4.80, cows, and J. L. Samuels, Manhattan, Kas., \$4.90, heifers. Receipts at this market for the week were 26,400 head against 20,000 a year ago. Five points got 144,700 compared with a run of 93,800 the same time in 1902. The general decline for the week amounted to 10@15c. Best beeves are now selling around \$4.75@5.00.
 Hog receipts last week were the heaviest of the year, the supply amounting to 64,200 head, a gain of 22,000 over last year. Other markets showed lighter increases. In the face of fairly good receipts killers again hammered the market and clipped off 20@30c for the week. All traders are now predicting continued liberal supplies and further breaks in the market. The close saw good heavy packing hogs bringing \$6.35@6.57 1/2. Among those topping the swine market during the week were: James Houghton, Breckenridge, Mo.; Hancock & Co., Belvue, Kas.; W. M. Holmburg, Agenda, Kas., and W. M. Knox, Greenwood County, Kas.
 Sheep gave a variety of markets trade opening strong, breaking towards the middle of the week and then finishing with the loss regained. Very few native sheep are coming to market at present but dealers are anticipating better supplies of local grass muttons by the middle of June. Texas sheep are arriving in large numbers and it is a wonder that values hold as high as they do. Best southern grassers are worth \$4.50@4.85, and medium kinds, which are a little lower than ten days ago, are ranging from \$4.00@4.25.

Topsy spring lambs are commanding \$7.50 but fairish kind from \$6.00@7.00.
 Horses held up well during the week, choice 1,700-lb. drafts bringing \$200@225 and coacher selling as high as \$300. These high prices are apt to drop off at any time, but no serious break is apprehended for the near future. Mules are in better request than they are in supply.
 The grain markets vacillated but little during the week. This was remarkable, too, in spite of the exceedingly flattering reports of the growing wheat. Cash wheat at Kansas City is worth: No. 2, 68@70c; No. 4, 64 1/2@65 1/2; No. 2 corn, 43@44c; No. 4, 40@41c; No. 2 oats 35@36c; No. 4, 32@33 1/2c; rye, 44@46c; alfalfa, \$5@11; tame hay \$7@13; prairie, \$4@10.
 Firmness characterized the poultry and produce markets during the week. Eggs are worth 13c; hens, 9 1/2c; (turkeys easier, hens, 9 1/2c; gobblers, 8 1/2c) geese, 50c; ducks, 10c.
 H. A. POWELL.

South St. Joseph Live-Stock Markets.

South St. Joe, Mo., May 18.
 The trend of cattle prices was lower the greater part of last week, which was due mainly to the liberal marketing at all points, labor strikes all over the country and the consequent lessened demand for beef and the uncertainty un-easiness in money circles. The decline was generally 10@15c for the finished grades and 25@35c for all other kinds. The good class of fat cows were scarce and sharply competed for and values held fully steady, but other kinds and heifers declined 10@15c. The movement to the country was restricted by the bad weather and accumulations in the hands of regular dealers were comparatively liberal under which conditions all kinds of stock cattle declined 25c.
 The course of the hog market was downward on practically each day of the week, which was due to the liberal marketing and lower prices at other points. The demand was good for the offerings at the low range of prices. The general quality of good average and weight ran strong. The tops to-day were at \$6.55 with the bulk of sales at \$6.30@6.45.
 A heavy proportion of the week's offerings in the sheep department ran to Colorado-fed lambs and grass Texas sheep. The demand was strong from all the buyers and market had a good, healthy undertone on each day, although prices showed no material change either way for the week. To-day offerings were principally grass Texas sheep, included in which a big drove of the Smith & Hamilton wethers going at \$5.25.

New York Butter Market.

New York, May 18, 1903.
 Creamery firsts.....22c

Special Want Column

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

CATTLE.

FOR SALE—Recorded Hereford bull, 23 months old, weight 1,400 pounds. Write for further information. J. H. Benick, Leeds, Mo.
 FOR SALE—Registered Aberdeen-Angus cattle fifteen bulls of serviceable age, 9 from 18 to 24 months old, also my herd bull for sale or exchange, and a number of young cows with calves at side. I am making special prices to reduce herd on account of shortage in pasture. A. L. Wynkoop, Bendena, Kas.
 RED POLLED BULL for sale, 4 years old, dark red, good individual, gentle, sure breeder, weight 1800 pounds, price \$125. A bargain for some dairyman. Charles Morrison, Phillipsburg, Kas.
 FOR SALE—Five good 1-year-old registered Hereford bulls. Will be sold low if taken soon. Come and see them; they will suit. H. B. Clark, Geneseo, Kas.
 FOR SALE—Two Scotch-topped bulls, from 10 to 18 months old, and a few cows with calves by their side. J. P. Engle, Alden, Rice County, Kas.
 FOR SALE—Red Poll bull, 3 years old, gentle, good all around, weight 1,650. Young stock at all times. D. F. Van Buskirk, Blue Mound, Kas.
 FOR SALE—2 good red Shorthorn herd bulls. Ebb Turner, Faucett, Mo.
 FOR SALE—10 head of registered Hereford bulls, 6 to 20 months old, good individuals, and in good condition. Visitors met at trains if notified. Farm 20 miles southwest of Wichita. A. Johnson, R. F. D. 2, Clearwater, Kas.
 FOR SALE—A few choice Shorthorn heifers and young bulls. M. C. Hemenway, Hope, Kas.
 FOR SALE—A few young Hereford bulls from the Evergreen Farm herd, headed by Lee 121232. Address Pearl I. Gill, Great Bend, Kas.
 FOR SALE—Guernsey bulls from best registered stock. J. W. Perkins, 423 Altman Building, Kansas City, Mo.

SEEDS AND PLANTS.

TOMATO PLANTS at \$2 per 1,000 by express; 50 cents per 100 by mail. A. G. Landis, Lawrence, Kas.
 SOY-BEANS and medium early yellow. \$1.40 per bushel. F. E. Uhl, Gardner, Kas.
 SOY BEANS—(Early yellow), \$2.25 per bushel. Sacks included. George Wheeler, Tyro, Kas.
 FOR SALE—Siberian millet seed, 50 cents per bushel, new sacks 15 cents extra. L. A. Abbott, Wamego, Kas.
 500,000 Yellow sweet potato plants for sale at \$1.25 per 1,000 by A. G. Landis, Lawrence, Kas.
 FOR SALE—50 cents per bushel, 1000 bushels first class Siberian millet. Sacks 15 cents. E. D. King, Burlington, Kas.
 FOR SALE—Golden Yellow popcorn, very productive, excellent for popping, very tender. Packet 6 cents; 7 pounds 50 cents. J. P. Overlander, Highland, Kas.
 200,000 FRUIT TREES! Wholesale prices; new catalogue. Baldwin, Nurseryman, Seneca, Kas.

FARMS AND RANCHES.

FOR RENT—160 acres, s. w. 1/4 of 6, 18, 36, near Leoti, and 160 acres n. e. 1/4 of 9, 18, 36, near Selkirk all in Wichita County, Kansas. Make offer to U. L. Schwarz, Anacortes, Washington.
 STOCK AND WHEAT RANCH—480 acres, one-half mile from Watonga, Blain County, Oklahoma; 320 Indian land, 160 deeded, all fenced. Two wind mills, three tanks. 50 head of good cows and calves. All for \$4,500. E. L. Hutchkiss, Watonga, O. T.
 SNAP No. 18—320 acres of nice, laying land; 100 acres cultivated, black loam soil, small improvements. Price \$4,000. This is hard to equal. Write us. Garrison & Studebaker, Florence, Kas.
 CASH BUYERS FOR FARMS—Six home-seekers have asked us to find farms for them. They have from \$4,000 to \$20,000 each in cash to invest. What have you to offer? Central Realty Agency, John G. Howard, Pres., Room 4, Hall Bldg., Kansas City, Mo.
 A SNAP—115 acres choice land with fair improvements, located about 8 miles from Union Depot, Kansas City, Mo., one and one-half mile to railroad station. 60 bottom land, balance slope and upland, fine spring water, good orchard, 4 acres grapes. This place will make money for you. Central Realty Agency, John G. Howard, Pres., Room 4, Hall Bldg., Kansas City, Mo.
 FOR SALE—A 400-acre farm, two and one-half miles of Maple Hill, Wabunsee Co., Kans. good improvements, 130 acres in cultivation, school house adjoining. Address E. Worsley, Maple Hill, Kans.
 SUBURBAN HOME FOR SALE—Forty acres adjoining city limits. Beautiful grounds, fine orchard, large brick house in good condition. Olin Templin, Lawrence, Kas.
 FOR SALE—130 acre ranch, mile of river front, 1 1/2 mile from Syracuse; 140 head of stock, 28 mares. Will sell altogether or separately. Address P. W. Duvall, Syracuse, Kas.
 FOR SALE—Wheat and stock farm, well improved, 400 deeded and leases to 1,560 acres. Address J. D. Hayes, Colby, Kas.
 FREE—State map, farm descriptions, reliable information about eastern Kansas. Buckeye Agency, Agricola, Kas.
 RANCH FOR SALE—1200 acres, 1120 acres of creek bottom, with model improvements, 140 acres alfalfa, 600 acres pasture, balance number one farm land. For further information address G. L. Gregg, Real Estate Dealer and Auctioneer, Clyde, Kas.
 SOME BARGAINS in farm lands in Anderson County, Kansas, in farms ranging from 80 acres up, S. B. Hamilton, Weida, Kas.
 FOR SALE—Farms and ranches in central and western Kansas. We have some great bargains in western ranches. Write us. R. F. Meek, Hutchinson, Kas.
 SWINE.
 POLAND-CHINA PIGS—Eligible for registry, 2 months old, \$5 each; 3 months or older, \$10 each. P. H. McKittick, McCracken, Kas.
 FOR SALE—Two choice Duroc-Jersey boars and five gilts bred. A. G. Dorr, Osage City, Kas.
 FOR SALE—Duroc Jerseys, November males, good color, low build; also sow pigs. M. H. Alberty, Cherokee, Kas.
 FOR SALE—Choice Poland-China males and gilts of fall farrow; first class breeding, some show pigs. Wm. Maguire, Haven, Kas.
 FOR SALE—A few nice young boars of October farrow, sired by Kansas Chief, a son of Chief Tecumseh 3d. C. M. Garver & Son, Abilene, Kas.
 FOR SALE—Duroc-Jersey boar, ready for service. He is from the famous Blocher-Burton stock. J. P. Lucas, 113 West 23rd St., Topeka Kas.
 MISCELLANEOUS.
 NOTICE—Men earn \$4 per day and expenses. For particulars, address with stamp enclosed, Lock Box 5, Oxford, Idaho.
 FARMERS' WIVES—We can help you earn money right at home easily and honestly, no canvassing. Columbus Weaving Co., Columbus, Ohio.
 ANOTHER LITTER of those fine working Collies, bred by A. P. Chacey, North Topeka, Kas. Males \$6, females \$4. Rural Route No. 1.
 TWO more litters of those high-bred Scotch Collie pups, only one week old, but you will have to book your order quick if you want one. Walnut Grove Farm, H. D. Nutting, Propr., Emporia, Kas.
 WANTED, FARMER—Practical farmer to take charge of a farm of 640 acres situated between Carbondale and Overbrook in Osage Co., Kas. Must be familiar with stock raising and feeding, and be able to give the best of references. Address for further particulars, Archibald Colter, Builders and Traders Exchange, Cincinnati, Ohio.
 WANTED WOOL—Send us samples of your whole clip, we will pay market price. Topeka Woolen Mills, Topeka, Kas.
 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, Kas.
 CREAM Separators Repaired at Gerdon's Machine Shop 820 Kansas Ave., Topeka, Kas.
 WANTED—Money to get patent on a quick-selling toy. Will give 25 cent of what it sells for. Henry Bolte, Webster, S. Dakota.
 HORSES AND MULES.
 WANTED—To buy or trade, a Clydesdale stallion for a span of good mules. H. W. McAfee, Topeka, Kas.
 PROSPECT FARM—CLYDESDALE STALLIONS, SHORTHORN CATTLE and POLAND-CHINA HOGS. Write for prices of finest animals in Kansas. H. W. McAfee, Topeka, Kas.
 PATENTS.
 J. A. ROSEN, PATENT ATTORNEY.
 418 Kansas Avenue, Topeka, Kansas.
 Patented and Unpatented Inventions Bought and Sold. Lucas & Co., St. Louis, Mo.
 POULTRY.
 SUNNY NOOK POULTRY YARDS—S. C. B. Leghorn eggs, from vigorous, good layers, \$1 per 15, John Black, Barnard, Kas.

Miscellany.

The Yearbook for 1902.

The Yearbook of the U. S. Department of Agriculture for 1902 is in press and will be issued early in June. It is a volume of about 900 pages, of which 124 pages are devoted to the annual report of the Secretary of Agriculture, 534 to miscellaneous articles, 200 to the Appendix, and about 30 to the Index. It is illustrated with a frontispiece, 71 half-tone and 16 colored plates, and 62 text figures.

The miscellaneous papers which cover a wide variety of subjects are as follows: "Climate of the Forest-Denuded Portion of the Upper Lake Region," by Willis L. Moore; "Practicability of Forest Planting in the United States," by William L. Hall; "Dairying at Home and Abroad," by Henry E. Alvord; "The San Jose Scale: Its Native Home and Natural Enemy," by C. H. Marlatt; "The Contamination of Public Water Supplies by Algae," by George T. Moore; "Wet and Dry Seasons in California," by Alexander G. McAadie; "Audubon Societies in Relation to the Farmer," by Henry Oldys; "Industrial Progress in Plant Work," by B. T. Galloway; "Some Engineering Features of Drainage," by C. G. Elliott; "Top Working Orchard Trees," by G. Harold Powell; "The Educational Value of Live-Stock Exhibitions," by Geo. M. Rommel; "Some of the Principal Insect Enemies of Coniferous Forests in the United States," by A. D. Hopkins; "Analysis of Waters and Interpretation of the Results," by J. K. Haywood; "Distribution and Magnitude of the Poultry and Egg Industry," by George Fayette Thompson; "The Influence of Forestry Upon the Lumber Industry," by Overton W. Price; "The Agaves: A Remarkable Group of Useful Plants," by E. W. Nelson; "Chemical Studies of Some Forest Products of Economic Importance," by William H. Krug; "Bacteria and the Nitrogen Problem," by George T. Moore; "Systems of Farm Management in the United States," by W. J. Spillman; "Improvement of Cotton by Seed Selection," by Herbert J. Webber; "The Cost of Food as Related to Its Nutritive Value," by R. D. Milner; "Grape, Raisin, and Wine Production in the United States," by George C. Husmann; "Flaxseed Production, Commerce, and Manufacture in the United States," by Charles M. Daugherty; "Use of Mineral Oil in Road Improvement," by James W. Abbott; "Selecting and Judging Horses for Market and Breeding Purposes," by W. J. Kennedy; "Promising New Fruits," by William A. Taylor; "Progress in Secondary Education in Agriculture," by A. C. True; "Plants as a Factor in Home Adornment," by L. C. Corbett; "Practices in Crop Rotation," by George K. Holmes; "Tests on the Physical Properties of Timber," by F. E. Olmsted; "Improvement of Corn by Seed Selection," by C. P. Hartley; "Fertilizers for Special Crops," by A. F. Woods and R. E. B. McKenney; "Crops Used in the Reclamation of Alkali Lands in Egypt," by Thomas H. Kearney and Thomas H. Means; "Some Practical Results of Experiment Station Work," by W. H. Beal; "Cultivation and Fertilization of Peach Orchards," by M. B. Waite; "Rainfall and Irrigation," by Edward A. Beals; "Foot-and-Mouth Disease," by D. E. Salmon.

The Appendix contains a list of names and post-offices of persons prominent in agricultural work in all its branches. It presents some views of agricultural progress in several directions and a statement of public lands open for settlement. The statistical tables with which the Appendix closes present the production, prices, and movement of the principal crops and farm animals, and the deficiency occurring in these figures last year is now supplied, making comparisons possible.

The edition of the Yearbook is 500,000 copies, of which only 30,000 are assigned to the Department for its use, which precludes are miscellaneous distribution by the Department itself, for its own regular correspondents and others cooperating with the Department or rendering it some service being far more numerous than the number of Yearbooks at its disposal. The bulk of the edition, 470,000 copies, is reserved for the use of Senators, Representatives, and Delegates to Congress, or about 1,000 copies to each member of Congress.

All persons, therefore, other than crop correspondents, desiring copies of the Yearbook, must make application to their Senators and Representatives in Congress instead of to the Department.

LOSS TO WORKMEN

A PROMINENT LABOR LEADER DISCUSSES AN ISSUE.

Gives His Own Experience as an Employee in the Railroad Shops—Couldn't Afford to be Sick.

Mr. A. C. Holmes, of Oneonta, N. Y., an employee of the railroad shops at that place is well known in labor circles and his own experience, recently related, "deserves the attention of every workingman who has lost time and money on account of sickness. Mr. Holmes said:

"Two years ago I had a severe attack of grip which left me in a bad condition. I was so weak that I frequently had to lay off for two or three days at a time during a period of four or five months. I could not very well afford to do this but there was no help for it—I simply was not able to work. I lost flesh, got nervous, had awful headaches and felt worn out all the time.

"I had read of some remarkable cures made by Dr. Williams' Pink Pills for Pale People in cases like mine and so decided to try them. A few boxes helped me and I took ten altogether. They drove all traces of the disease out of my system and made me feel like a different man. I have told many of my acquaintances about Dr. Williams' Pink Pills and what they did for me."

After an attack of the grip there are always left behind some troublesome effects. Often these are worse than the disease itself and seem to baffle all efforts of physicians. Health is shattered—the blood becomes poor, the flesh falls away, the sufferer grows nervous and irritable, and even slight exertion causes shortness of breath. These are dangerous symptoms and indicate that the system is in a state that invites pneumonia, bronchitis, or even consumption. Dr. Williams' Pink Pills for Pale People, however, will not only quickly restore the health after an attack of the grip and expel the lingering germs but, working upon the blood, will render the system proof against the disease. In hundreds of cases just as remarkable as that of Mr. Holmes it has been shown that Dr. Williams' Pink Pills have surely accomplished this result. Dr. Williams' Pink Pills for Pale People are sold at all drug stores or sent postpaid, on receipt of price, 50 cents a box, six boxes for \$2.50, by the Dr. Williams' Medicine Company, Schenectady, N. Y.

Kansas Prison Twine.

The binding-twine from the State binding-twine plant in the penitentiary will go on the market this year at 9½ cents a pound at Lansing in lots of 5,000 or over, and at 10 cents in lots of less than 5,000 pounds. These figures are of great interest to every farmer because binding-twine represents one of the chief items of expense in the harvest, and the price of State twine will virtually fix the price of all twine. This is a reduction of 1 cent from the prices in force last year, but

it allows the State a small margin of profit for the wear and tear of the machinery, in addition to interest on the investment, and a narrow margin to replace the cost of the plant. The prices established by the twine trust, or the International Harvester Company, are 10 cents for less than car lots, f. o. b. Chicago, or 10¼ cents a pound in car lots. The freight rate from Chicago to Kansas City is 30 cents. This makes the price for trust twine at Missouri River points a trifle more than a cent a pound in excess of the price charged for the State twine on small lots and four-fifths of a cent a pound more on large lots.

Advertising, like love-making, is much like fishing. To succeed you must persevere and change your bait. Advertise in the KANSAS FARMER.

\$19.00 to Boston and Return \$19.00 with membership fee of \$2.00 added, account of annual meeting of National Educational Association. Tickets will be on sale via the Nickel Plate Road July 2d to 5th, inclusive, good returning from July 8th to 12th inclusive, without being deposited with Joint Agent. Additional limit to return not later than September 1st can be obtained by depositing return portion of ticket with Joint Agent and payment of 50c per execution. Superior train service and excellent dining-car meals, on American Club Plan, ranging in price from 35c to \$1.00; also a la carte service. Write John Y. Calahan, General Agent, 113 Adams St., room 238, Chicago, for time of departure of trains from Chicago and other detailed information. (3)

BINDER TWINE. FARMERS wanted as agents. AUGUST POST, Moulton, Iowa

Superfluous Hair Removed Forever. I discovered a treatment which removes hair from face, neck, arm, or any part of the body instantly and permanently. Don't judge my treatment by unsuccessful attempts of others. Failure absolutely impossible. Skin left unharmed. Plain, simple, and safe. Don't suffer longer when relief is yours for the asking. Don't send any money, but write to Madame Kee-Nan, 240 West 42d St., New York City

FARMERS who wish to better their conditions are advised to write for a descriptive pamphlet and map of Maryland, which is being sent out free by charge by THE STATE BUREAU OF IMMIGRATION OF MARYLAND. Address Mr. H. Badenhop, [Secretary, Merchants' Nat'l Bank Bldg., Baltimore, Md.

YOU MAY HAVE A MILLION DOLLARS but if you are as badly afflicted with constipation as I have been, I am richer than you. Send me 25 cents and I will tell you how I cured myself permanently without the use of a cent's worth of medicine. Your name very plain. H. ENDSLEY, Lock Box 13, Ellensburg, Washington.

STARK TREES best by Test—78 Years LARGEST Nursery. FRUIT BOOK free. We PAY CASH WANT MORE SALESMEN STARK BROS., Louisiana, Mo.; Huntsville, Ala.; Etc

TREES kept dormant till May 15th. Peach trees one year from bud, 1 and 2 cts. each. Also pear, quince, Japan plums. Circular free. R. S. Johnston, Box 17, Stockley, Delaware.

ROSELAND SORGHUMS The latest government improved Sweet Sorghums for forage and molasses. Greatest fodder plants in existence. Printed information. THOS. D. HUBBARD, Kimball, Kans.

PATENTS Obtained. Low Fees, Easy Payments, Free Advice William F. Hall, 1003 F St., Wash., D.C.

CALIFORNIA

\$25.00 One Way. \$45.00 Round Trip.

If you expect to go to California, why not go when the railroad fare is low? From now to June 15, 1903, you may go there for \$25.00. You may buy a round-trip ticket May 3 or May 13 to 18, inclusive, for \$45.00, a considerable reduction from current rates. These round-trip tickets will be limited to July 15, and liberal stopover privileges accorded.

The one-way tickets will be accepted for passage in free chair cars carried on fast trains. If sleeper is desired, tickets will be accepted for passage in tourist sleepers on payment of customary Pullman charge. The round-trip tickets will be honored on any Santa Fe train.—Pullman space extra. SANTA FE ALL THE WAY.

A profusely illustrated folder issued by the Santa Fe describes the trip to California, and also contains complete schedules of the special trains to be run for those who avail themselves of the low rate made for the General Assembly of the Presbyterian Church and the General Convention of Master Plumbers. Sent free on request. Address

T. L. KING, C. P. & T. A., A. T. & S. F. Ry., Topeka. Or T. M. James, 830 Kansas Ave., North Topeka.

IT WILL PAY YOU to write for the prices we are PAYING for BUTTER and CREAM. We furnish packages FREE, guarantee accurate weights and tests, and buy any quantity any day in the year. CHANDLER'S CREAM SEPARATOR is all right and easy to wash and care for. I am making TWO POUNDS MORE BUTTER than when I used the centrifugal separator. MINNIE M. STEEL, Gridley, Kans., April 30, 1902. Its qualities are too numerous to enumerate here. Price and description furnished upon application. AGENTS MAKE MONEY selling them. W. Rasmussen, American, Kans., sold four the first day. No experience necessary. "Talking Points" free. Write to-day. O. F. Chandler Creamery Co., 410 West Sixth Street, KANSAS CITY, Mo.

The "Cream" of Them All

We can PROVE that the Plymouth Cream Separator has more points of excellence than any other. Here are a few: Milk not mixed with water. Removable inner can. Inner can has center tube which is also water receptacle. Water distributed EQUALLY around and under inner can; also through center tube, giving greatest possible cooling surface. No water required five months in the year. New and original faucet; impossible to leak or sour. You'll be sorry if you buy any other before investigating this. We prepay express charges. Send for catalogue. Plymouth Cream Separator Co., [Plymouth, Ohio.]

Cut All The Cream that is in your milk, quicker and with less trouble than by any other method, by using Superior Cream Extractor (Does not mix water with milk.) It effects a complete separation in an hour by a circulation of cold water in an outer jacket. Every can guaranteed. Thousands in practical use. Why pay high prices for separators no better? Write today for catalogue. Superior Fence Machine Co., 189 Gd. River Ave., Detroit, Mich.

A FREE CHURN

This offer is made to quickly introduce the ECONOMY TWO-MINUTE CHURN in every community. We would ask that you show it to your neighbors who have cows, knowing that when they find how simple and durable it is, also that it will make butter from sweet or sour milk in two minutes' time, they will order one. Send us today your name and name of your nearest freight office. ECONOMY MFG. CO., 174 W. 7th, Kansas City, Mo.

4 REASONS WHY

The Indian Territory is a good agricultural country; A Bale and a Half of Cotton per Acre. Sixty Bushels of Corn per Acre. Thirty Bushels of Wheat per Acre. Pasture the Year 'Round. An attractive pamphlet about the Indian Territory will be mailed on request. Address "KATY," St. Louis, Mo.

RUPTURE Cured in 10 days

by the world renowned Rupture Specialist, Dr. O. H. Riggs. No knife. No ligature, no danger. The patient is required to come to the doctor's office, and by a novel process the rupture is closed and in 10 days he can return home sound and well. Call or write and enclose 2c stamp for booklet. Address DR. O. H. RIGGS, 205 Altman Bldg., Cor. 11th and Walnut Sts., Kansas City, Mo.

VARICOCELE

A Safe, Painless, Permanent Cure GUARANTEED. 30 years' experience. No money accepted until patient is well. CONSULTATION and valuable BOOK FREE, by mail or at office. DR. C. M. COE, 915 Walnut St., Kansas City, Mo.

Hay Fever and Asthma

Cured to stay cured. Never return. Causes expelled. Entire health restored. Absolutely different from all FREE smokes, sprays and "Reliefs." Over 52,000 patients. Influential references everywhere. BOOK FREE with reports of many interesting cases. Address DR. HAYES, Buffalo, N. Y.

BED WETTING CURED. TRIAL FREE.

Scamato Co., Sta. E. Milwaukee, Wis. LADIES My Regulator never fails. Box FREE. DR. F. MAY, Box 31, Bloomington, Ill

BED-WETTING CURED. Sample FREE. DR. F. E. MAY, Bloomington, Ill

DRAFT STOCK FOR SALE.

500 draft-bred Mares, Geldings, and Mules for sale, in car-load lots, from 1 to 8 years old; good bone and colors. Scott & Rhodes, Deer Trail, Colo.

MALTESE MILK GOATS

FOR SALE. Revenue derived from dairy, 10 goats, \$1,072 in 24 months. 20 pages information free. B. VANRAUB, San Antonio, Tex

WINDSOR-CLIFTON HOTEL

Monroe and Wabash Ave., Chicago. Centrally located; has 250 rooms \$1.00 up; also First-Class Restaurant at popular prices. CHRIST NEIPP, Prop'r

Grange Department.

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

Conducted by Ed. Blair, Cadmus, 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, John Trimble, 514 F St., Washington, D. C.

KANSAS STATE GRANGE.

Master..... E. W. Westgate, Manhattan
Overseer..... J. C. Lovett, Bucyrus
Lecturer..... Ole Hilmer, Olathe
Steward..... E. 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.

Henry Rhoades..... Gardner
J. T. Lincoln..... Olpe
A. P. Beardon..... McLouth

Coming Visit of the National Lecturer.

Gov. N. J. Bachelder, of New Hampshire, lecturer of the National Grange, finds it impossible to devote more than one week to Grange work in Kansas. He will be in the State July 20 to 25, inclusive and will visit no locality in which he spoke two years ago.

The exact place for his first visit has not been definitely decided upon. His first night, Monday, July 20, will be opened in Topeka, Tuesday is assigned to Madison, Wednesday to Lone Elm, Thursday to Bucyrus, Friday to Wellsville, and Saturday to Olathe.

It is regretted that we could not have him for three or four days more. Several granges will be greatly disappointed at being left out of his circuit. If we had a special train at our command we could make more of six days, but one open meeting a day is all that can be provided. E. W. WESTGATE, Master.

Growth of the Grange.

For the last twenty years, the year 1902 was the banner year for growth in number of new Granges and increase in membership, but more new Granges were organized from October, 1902, to April, 1903, than in the corresponding time in any year. Two new granges have been formed in Osage County since the meeting of the State Grange in December, and several granges have received large additions to their membership. One very pleasing feature noticed in the new granges is the number of young people enrolled.

We were surprised a short time ago at the reception of a letter from the U. S. consul at Auckland, New Zealand, asking in behalf of the prominent grangers there a copy of the constitution and by-laws of the Kansas State Grange. We were not aware that the Grange had already swept around the world. Again, more recently a letter came from the secretary of Board of agriculture in Oklahoma, stating that he had always known of the Grange though never a member of it; that he had just received a copy of our Secretary Coburn's quarterly report and was much interested in the account therein given of Grange achievements and possibilities; that his board had charge of the institute work in the Territory, and that he was impressed by the remark of Prof Cottrell quoted therein as to the effect of the Grange upon the institutes in Kansas, and wished to open correspondence with us, hoping to introduce the Grange in the Territory. With men and means to take the field, grand work might be accomplished in our State and Oklahoma. E. W. W.

"Where Rolls the Oregon."

AARON JONES, WORTHY MASTER NATIONAL GRANGE, AT EUGENE, ORE., APRIL 1, 1903.

I know your mind and heart are always directed along Grange lines to advance the cause of our order and to improve the social and financial condition of our members.

I have been ten days in Washington and ten days in Oregon visiting with and attending meetings called to meet the State and National representatives of our order and hear of the work in the State and Nation. I find an increased interest and an earnest desire on the part of all members and a large proportion of the progressive farmers to learn of the progress and success of the order. The splendid work, the magnificent record, and the grand achievements of our order, cheer our members, and cause a desire on the part of those outside our gates to seek

further knowledge by making application to be enrolled with us.

As a result of our meetings, many good granges will be greatly strengthened and a great many new members be added to our rolls. And we further believe several new granges will be organized.

It seems to be universally conceded that the farmers can no longer be indifferent to their interests and neglect to organize; and hence the desire for exact knowledge of the aims and purposes and the opportunities of the Order of Patrons of Husbandry. Sometimes we have not been quite sure that the public speaker and public addresses were as valuable as the printed page; we fully believe the printed page needs also the clear and forceful speaker to arrest the attention of the average farmer to a thoughtful reading and a full and complete understanding of our literature and valuable grange papers. At all events, where possible, both avenues should be used to build up our order and make it strong and unify the work.

The high character of the membership of our order gives standing to the Grange and in a large degree is the cause of its wonderful growth and popularity.

If our members in the East and the older States could realize how much more it costs in time and effort to attend grange meetings in a new State where population is sparse and roads new and at many seasons of the year very bad, they would more fully comprehend the devotion to the principles of our order of the membership in the new States, and would give a helping hand to make the Grange more and more beneficial to them.

In Washington and in Oregon the Grange is being conducted along lines that meet the full approval of all good men and women, whether residents of farm or city. In both States an active cooperation is maintained with public schools and higher institutions of learning. In Washington we visited the State Agricultural College, and the president and all the professors expressed a desire to more actively cooperate to improve agriculture. In Oregon we visited not only the Agricultural College but the State University and the Normal Schools of the State, and found the presidents of all these schools active members and warm advocates of the Grange. We also find the professional and business men of the States friendly to the Grange, recognizing that the best interests of all are vastly improved by a prosperous and successful agriculture and a high order of citizenship among the farming population.

I noted with pleasure the fertile lands, the pleasant homes, the splendid scenery, the healthful and agreeable climatic conditions of both Washington and Oregon; and I can but predict a great future for these States.

Success does not consist in never making a mistake, but in never making the same one twice. Advertise in the KANSAS FARMER and you will succeed.

The lack of knowledge on so vital a subject as that of heart disease is most surprising. It is now many years since the investigations of leading heart specialists led them to announce that weak hearts are as common as weak stomachs, eyes, kidneys, lungs, etc.; that statistics prepared by the leading medical societies of the world prove that one person in every four has a weak heart and that heart disease is the most common cause of sudden death.

One might have a weak heart for many years and not know it. The symptoms are baffling, being frequently mistaken for those of the affection of some other organ, such as lungs, stomach, kidneys, liver, bowels, etc.

A weak heart never cures itself, but, unless promptly and carefully treated, it will surely though slowly undermine the general health as well as become chronically deranged.

Fainting spells, shortness of breath, fluttering or palpitation of the heart, sudden starting in sleep, morbid fears, dreaming, indicate a weak heart and should be treated at once.

A weak heart, besides retarding the circulation, impairing digestion and impoverishing the blood is unable to overcome the laws of gravity. This results in the watery portion of the blood oozing out of the vessels and settling in the lower parts of the body and is called dropsy. Dropsy can be cured. Heart disease can be cured. You can stimulate the digestion, purify and enrich the blood, strengthen and regulate the heart's action, improve the circulation, invigorate the nervous system and prolong life by using the great heart and blood tonic, Dr. Miles' New Heart Cure.

By its stimulating effects on the digestive organs it assists assimilation of the food, producing rich, red highly vitalized blood. It is the essence of the elements and principles that feed, nourish and reconstruct.

Dr. Miles' Remedies are sold by all druggists and a positive guarantee that first bottle benefits or money refunded. Book on Heart Disease free. Dr. Miles Medical Co., Elkhart, Ind.

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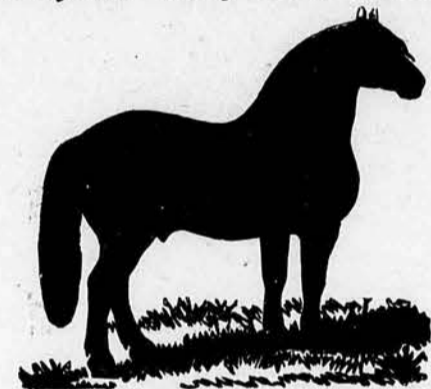
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