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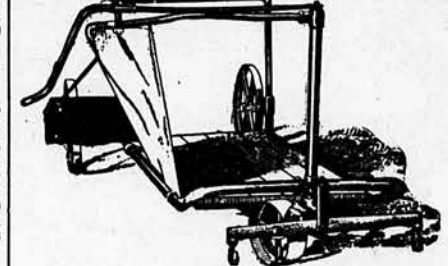
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Agricultural Matters.

SOIL FERMENTS IMPORTANT IN AGRICULTURE.

By H. W. Wiley, Chief of the Division of Chemistry, United States Department of Agriculture, from the Yearbook of the United States Department of Agriculture for 1896.

(Continued from last week.)

THE SUPPLY OF RAW MATERIAL FOR THE ACTION OF FERMENTS.

A field is as poor as its most deficient fertilizing principle. A plant, like an animal, demands a balanced ration. It cannot live upon phosphoric acid alone. In order to secure the most economic method of fertilizing, the peculiarities of each field must be carefully studied and its particular deficiency in plant food determined. In the case under consideration it may happen that a field will have an abundant supply of potash and phosphorus and be deficient only in nitrogen. In such a case its pristine fertility will be restored by the application of nitrogen alone, provided the other conditions in the composition of the soil are favorable to the development and activity of the ferments which oxidize nitrogen. Virgin soils as a rule are extremely rich in nitrogen. This arises from several causes. In the first place, such soils usually contain a large quantity of humus, and this humus is exceptionally rich in its nitrogenous elements. In the second place, a virgin soil is apt to be well protected from leaching. This is secured either by a forest growth or, on prairie land, by the grass. In the third place, there is a well-marked tendency in soils, especially those covered by grass, and presumably those also protected by forest growth, to develop ferments capable of oxidizing the free nitrogen of the air. When virgin soils are subjected to cultivation, it is found that their nitrogen content as a rule diminishes most rapidly as compared with that of the other leading plant foods. Hence it becomes necessary sooner or later, if maximum crops are to be maintained, to supply nitrogenous food. Attention has already been called to the use of the stores of nitrogen which have already been oxidized for fertilization. It is evident, however, that only a very small part of the nitrogenous needs of arable fields can be supplied in this way. Further than this, it must not be forgotten that in the use of a substance like Chile saltpeter there is added to the soil a material which can in no manner foster the growth and development of nitrifying organisms. To feed a soil with a food of this kind alone, therefore, would be to virtually produce a famine in respect of the nitrifying ferments which it contains.

It is therefore highly important that additional methods of supplying the nitrogenous foods of plants should be practiced. Stall manures and the refuse of cattle and poultry yards furnish considerable quantities of nitrogenous materials suited to the needs of the soil ferments, and useful after oxidation to the growing crop. In the growth of leguminous plants, as has already been intimated, another important supply of organic nitrogen may be secured, some of which, at least, is a clear gain from the atmosphere. Other important forms of nitrogenous materials are found in the pressed cakes left after the extraction of the oil from oil-producing seeds, such as flax and cotton seed. These cakes are exceptionally rich in nitrogenous matter, which may be secured for the field both by the direct application of the ground material to the soil or by first feeding it to animals, the part which escapes digestion in the latter case being still a valuable fertilizing material. In the case of cottonseed cake, moreover, it should not be forgotten that there is some danger in feeding it, especially to young cattle, on account of the poisonous nitrogenous bases (cholin and betain) which it contains. These poisonous bases produce no deleterious effects whatever in the soil, although it is doubtful whether they are attacked very readily by the nitrifying ferments. Other sources of nitrogenous foods for the soil ferments are found in the refuse of slaughterhouses. Dried blood is perhaps the

richest in nitrogen of any organic substance that is known, and is readily attacked by the soil ferments. The nitrogenous refuse of slaughtered animals, after the extraction of the fat, is dried and ground and sold under the name of tankage. It is a substance very rich in nitrogenous matter. The bones of animals are not only valuable on account of the phosphoric acid which they contain, but also have a large percentage of nitrogenous material which renders them particularly well suited for application to a soil deficient both in phosphoric acid and nitrogen. For this reason, burning bones before grinding them for fertilizing purposes, which is done in some localities, is extremely wasteful. For a similar reason, also, the composting of coarsely-ground fresh bones with wood ashes is not to be recommended because of the tendency of the alkali of the ashes to set free, in the form of ammonia, at least a part of the nitrogenous content of the bones.

RELATION OF DIFFERENT CROPS TO FERMENTATIVE ACTIVITY.

It is a well-established principle of farming that there are certain crops which cannot be grown continuously upon the same field, while in the case of other crops almost an indefinite growth can be secured. Broadly, it may be said that cereals may be grown upon the same field almost indefinitely and without fertilization. In such cases the large crops of cereals which are at first obtained rapidly diminish in quantity until they reach a certain minimum limit, at which point they tend to remain, with variations in yield due only to seasonal influences. On the other hand, root crops of all kinds, and especially leguminous crops, do not continue to flourish upon the same soil, even when liberally fertilized. The necessity for rotation, therefore, is far greater in the latter class of crops than with the cereals. It appears from the result of the scientific investigations attending this difference of behavior that the relations of these two classes of growing crops are different toward the soil ferments. In the case of the cereals the quantity of nitrogen which they require can be obtained from humus, or other sources, with little effort. In the case of the other class of crops, such as root crops, and those of a leguminous nature, it appears that the humus should be particularly rich in nitrogen, and that when by the activity of the soil ferments the percentage of nitrogen is reduced to a certain limit there is no longer a possibility of a sufficiently vigorous nitrification to meet the demands of the growing vegetables. There is thus a scientific basis, as well as practical reasons, for a frequent rotation of crops. Even in the case of cereals, which as mentioned above, can be grown with considerable success without rotation, experience has shown that a change from one crop to another is always beneficial.

THE RELATION OF HUMUS TO SOIL FERMENTS.

The term humus is applied to those constituents of the soil which have been derived chiefly from the decay of vegetable matter. In this decay the original structure of the vegetable has been entirely lost, and the residue, in the form of vegetable mold of a black or brownish color, is left distributed in the soil. In the processes of decay the organic matter of the vegetable is converted largely into acids of the humic series and the nitrogenous principles of the plant become changed from an albuminoid to a more inert form, in which it is more readily preserved. It is this practically inert form of nitrogen on which the soil ferments exercise their activity in preparing it for the uses of the plant. It has been a commonly accepted theory in the past, especially since the time of Liebig, that the organic principles of humus of every description suffer entire decomposition under the action of fermentative germs before being absorbed as plant nutriment. Recent investigations, however, tend to show that in some instances the organic elements of humus itself may serve as food for plants without undergoing entire decomposition. Whether or not the nitrogenous principles of the humus can thus be employed has not been deter-

mined, but that the humus itself, or some constituents thereof, can be absorbed by the plant I have myself often noticed, especially in the case of sugar cane grown upon a rich vegetable mold. The juices expressed from such canes contain the organic matter of the humus to a certain extent unchanged, and the sugar and molasses made therefrom are distinctly impregnated in the raw state with this organic matter.

These facts have a tendency to raise again the question concerning the purely mineral character of plant food, which for many years was considered as definitely settled. Recent progress in synthetic chemistry has shown that there is no impassible barrier between organic and inorganic classes of compounds. By the union, for instance, of lime and carbon under the influence of the electric arc, a substance is obtained—calcium carbide—which, when thrown upon water, evolves the gas, acetylene, which was formerly supposed to be wholly of organic origin. In hundreds of other instances the barriers between organic and inorganic substances have been broken down in the laboratory, and organic bodies as complicated in their nature as sugars have been formed by pure synthesis. The chemistry of the vegetable organism is admittedly superior to that of the chemical laboratory, and while there is no doubt of the fact that the vast preponderance of vegetable food is of a mineral nature, it would not be safe to deny to the vegetable the ability to absorb to a certain extent organic compounds.

There is, however, at the present time but little evidence to show that organic compounds of a nitrogenous nature are ever absorbed by plants, and therefore, even in the case of humus, we must still contend, at least for the present, that its nitrogenous constituents only become available for plant food after having been fully oxidized by the action of the soil ferments.

DETERMINATION OF THE ACTIVITY OF SOIL FERMENTS.

It is evident from the preceding pages that a study of the soil for agricultural purposes is incomplete which does not include a determination of the character and vigor of the ferments which it contains. This necessarily introduces into the practice of soil analysis the processes of bacteriological examination. It is not the purpose at the present time to describe these processes, but to give only to the general reader as clear an idea as possible of the principles which underlie the analysis of soils for the purpose of determining the activity of their nitrifying ferments.

PRECAUTIONS IN SAMPLING.

First of all the method of sampling must be such as to secure for examination portions of soil which certainly contain no other organisms than those locally found therein. The methods of securing the samples are purely technical and will be fully described in a special bulletin from the Division of Chemistry of the Department of Agriculture.

THE CULTURE SOLUTION.

Many readers of these pages who are not bacteriologists will be interested in knowing the character of the solution which is used for testing the nitrifying vitality of the ferments in the soil. A solution which we have found very useful for this purpose is composed of the following constituents: Potassium phosphate, 1 gram; magnesium sulphate, half a gram; ammonium sulphate, two-tenths gram; calcium chloride, a trace, and calcium carbonate in excess of the amount which will be necessary to combine with all the nitric acid produced from the ammonium sulphate present. The above quantities of materials are dissolved or suspended in 1 liter (about 1 quart) of water, and one-tenth of this volume is used for each culture solution. This quantity is placed in an Erlenmeyer flask, which is then sterilized, after stoppering with cotton, by being kept at the temperature of boiling water for an hour on three successive days. The flask itself, before using, should be thoroughly sterilized by heating to 300° F. for an hour.

The calcium carbonate employed in the above culture solution should not

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be prepared by finely grinding marble or chalk, but in a chemical way by precipitation. It is best thoroughly sterilized separately and then added to the flask immediately before seeding. The sterilized spoon which is used for seeding holds, approximately, half a gram of the soil. This spoon is filled from the contents of one of the freshly-opened sample tubes, underneath a glass hood, the plug of cotton is lifted from the sterilized flask, and the contents of the spoon quickly introduced and the plug of cotton replaced. While the above details are well known to the practical bacteriologist, they are not appreciated, as a rule, by the general reader. From the numerous inquiries concerning this process which have been received at the Department it is believed that the above brief outline of the method of procedure of securing samples of soil and seeding sterilized solutions therewith will be useful.

NOTING THE PROGRESS OF NITRIFICATION.

It will be seen from the above description that the object of the tests in question is to determine the activity and strength of the nitrous and nitric organisms alone, inasmuch as the process begins with an ammoniacal salt. At the end of five days from the time of the first seeding a portion of the solution is withdrawn in a sterilized pipette for the purpose of determining whether or not the process of nitrification has commenced; and if so, to what extent it has proceeded. This may be accomplished by either determining whether any ammonia has been destroyed or whether any nitrous or nitric acids have been produced. These processes are of a purely chemical, technical nature and therefore would not be properly described in this place. In the case of an active and fertile soil the nitrifying process begins promptly, and as a rule continues with unabated vigor until the whole of the nitrogen present in the ammonium salt is converted into nitric acid. In very favorable circumstances this object will be accomplished in about six weeks. When the organisms in the sample are few in number or deficient in vitality the nitrification does not begin for a long time, and then goes on with great slowness. By tracing the progress of the fermentation, as described above, it is seen how easy it is to compare various samples of soil in respect of their nitrifying power. If after four or five weeks no trace of nitrification has been found, the soils are regarded as being practically deficient in nitrifying ferments. This often happens with samples taken at a depth of three or more feet, or even in the case of surface soils or others subjected to conditions inimical to fermentative life.

(To be continued.)

The Stock Interest.

THOROUGHbred STOCK SALES.

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

SEPTEMBER 2—Bert Wise and Frank Daechner, Poland-Chinas.
SEPTEMBER 4—J. S. Magers, swine, Springfield, Mo.
SEPTEMBER 10—W. E. Gresham and L. Nation, Poland-Chinas, Hutchinson, Kas.
SEPTEMBER 17—W. H. Wren, Poland-Chinas, St. Joseph, Mo.
OCTOBER 1—E. E. Axline, Poland-Chinas, Oak Grove, Jackson Co., Mo.
OCTOBER 23—Gudgell & Simpson and J. A. Funkhouser, Herefords, Independence, Mo.
OCTOBER 30—J. R. Killough & Sons, Poland-Chinas, Richmond, Kas.

CORN STALK DISEASE.

From Bulletin No. 58 (June, 1896) by N. S. Mayo, M. S., D. V. S., Professor of Physiology and Veterinary Science, Kansas Experiment Station.

(Continued from last week.)

OUTBREAKS REPORTED.

The season of 1895 was noted on account of the unusually large corn crop in this State and there appeared to be a marked increase in the prevalence of the corn stalk disease. The following reports will give some idea of the circumstances and conditions under which the disease occurs.

Mr. C. S. Jobs, of Attica, Harper county, writes, under date of November 30, 1895, as follows:

"I had an outbreak of the disease in my herd this week. I had 225 head up feeding them on cane, which was cut and cured in August last and has laid in shock ever since. They had been fed on this cane for two weeks or more. On last Monday they broke out of the lot and went at once into stalk field; they were not out to exceed one hour. On Wednesday morning two animals were found dead and by afternoon of Thursday fifteen more died. I was away from home at the time and did not wire you, as I should otherwise have done. Neither can I give you the symptoms minutely. The first stomach seemed normal in nearly all cases, the second stomach (omasum or manifoles) was very hard in almost every case. I saved one of the latter and will send it to you. My foreman is firmly of the opinion that the wet, sleet-covered cane which they ate on Monday and Tuesday is responsible for the trouble, while I was equally confident that the stalks did the work. However, I have two steers that go where they please; they are constantly in these cane stalks and have suffered no inconvenience and are doing splendidly. There has been, I think, close to 100 or more head of cattle lost within a radius of five to seven miles of my place, all chargeable to corn stalks."

Mr. Jobs very kindly sent a manifold from one of the dead cattle and also a bundle of corn stalks which he thought caused the trouble.

The omasum (manifolds) was filled very full of partially digested food and was extremely hard and dry. It was impossible to make a dent in the manifolds by pressure with the fingers. It should be stated that this manifold had been removed from the animal six days before, and had probably dried out somewhat. It must also be remembered that the natural consistency of the omasum or "manifolds" is about that of a bag of putty. The partially digested food taken from the manifolds was examined chemically for the presence of alkaloids or nitrogenous bases, by extracting the food both with alcohol and acidulated water and testing with the common reagents. A faint trace of a reaction occurred, but this was probably the result of the decomposition of the animal tissue of the manifolds. This partially digested food was also tested to determine the presence of potassium nitrate (saltpeter), but none was found.

The bundle of corn stalks received from Mr. Jobs was also examined for the presence of potash but no appreciable amount was discovered.

The next outbreak to be reported was by Mr. E. F. Gregory, of Garnett, Anderson county. Mr. Gregory is Secretary and Treasurer of the Enterprise Cattle Company, a close observer and of large experience in handling cattle. He writes as follows:

GARNETT, KAS., December 4, 1895.

Dr. N. S. Mayo, Kansas Experiment Station, Manhattan, Kas.—Dear Sir: In compliance with your request published in the KANSAS FARMER, I report to you what we think to be a case of corn stalk disease.

About ten days ago seventy-five head of

steers were turned into an eighty-acre stalk field. Cattle were supplied with plenty of water and salt, and due care taken in putting them onto that kind of feed. The second or third day after sleet encased almost every particle of food and cattle could get but little, so some shock corn was hauled out to them. About the fifth day or soon after ice melted, some of the cattle were noticed getting stiff, particularly in hind parts, getting up with difficulty, etc., but as dung showed quite a little corn and they had not been used to any, it was thought that slight founder was the trouble or that rotten corn might have something to do with it. As the cattle had been pretty well over the field and the supply of good and rotten corn was pretty well exhausted it was decided to let them remain. The trouble did not cease, however; each day more steers showed stiffness, often falling down and unable to regain their feet without help. Some of the first and worst cases got better without medical aid, but as the number of ailing ones was increasing and some cases getting worse all the time, it was decided this morning that it was genuine corn stalk disease and cattle were taken from the field, leaving one dead, one dying, four unable to get up, and amongst those brought away half a dozen were reeling in their tracks.

I say it was "decided" a case of corn stalk disease, but mean only that in the writer's judgment it was such—think there is not much doubt of it as it certainly is not from impaction in stomach and there was not much corn in the first place, with little or none during the last four or five days.

On December 6, 1895, I visited Mr. Gregory's place and found the condition of the cattle as stated in Mr. Gregory's letter. The cattle affected were three-year-old range cattle, known as "nester" cattle. ("Nester" cattle are those raised by men who have small ranches, or "nests," in the big range country. They are not so wild as range cattle but otherwise do not differ.)

The stalk field was a mile or more from the ranch and feed lots, where all the cattle were, except six that had been left in the stalk field. Of those brought to the feed lot three were down and five or six were noticeably affected, as shown by uncertain gait, lack of co-ordination and knuckling of hind legs. The steers that were down had been hauled to sheltered places and were nibbling at millet hay and eating a little corn that was given them. Their temperatures were 102.1-50° F., 102½, 102.1-50°. The respirations and pulse were faster than normal, but this was probably caused by the excitement of drawing them upon a sled. There was paralysis of the hind quarters.

Of the steers that were necessarily left at the stalk field, one was dead and six had been hauled out of the stalk field and placed on the south side of the hay stack in an adjoining meadow. Two of the six had been able to regain their feet during the night and had wandered away. Of the remaining four, three presented the same appearance and condition as those at the feed lot, except their temperatures were slightly lower, being 101.3-5, 102, 102.1-5. Their bodies had been covered by hay, of which they ate a little, and also a little corn that was given them. If approached they would shake their heads and make efforts to rise, but were unable to do so on account of paralysis of the hind parts. All of these steers were lying in normal position upon the sternum or "brisket."

Another steer more seriously affected was lying upon the right side, and was quite badly bloated. This bloating probably caused from indigestion induced by lying in one position on the side. Tapping the rumen gave temporary relief. This steer appeared to be in no pain. The eyes were congested and were discharging some muco-purulent matter. His temperature was 101.3-5. The dung of all the sick steers was very dark colored and foetid, yet containing quite a little undigested corn. The remaining (seventh) steer was dead. Had been dead two days, but as the weather had been cold decomposition was not marked. The steer was lying in a depression or "draw" that contained some standing water and was quite miry. An autopsy revealed congestion of the brain and lungs, the latter severe. Rumen was partially filled with well-masticated corn stalks. There was no impaction of the omasum (manifolds); the abomasum or true stomach was empty of food but congested and contained a quantity of mucus. Small intestines were congested. Large intestines congested and filled

with dark, foetid manure, mixed with considerable mucus. The heart was congested. The liver, spleen and kidneys appeared normal. After this steer was taken ill he was exposed to a cold sleet and snow storm and his death probably resulted from a combination of disease and exposure.

Inoculations of agar were made from blood of heart, also from spleen and liver. Smear cover glass mounts were also made, but no bacteria but those of decomposition were found.

A hasty examination of the stalks in one corner of the field failed to find any noticeable abnormal conditions, although Mr. Gregory mentioned that there had been considerable rotten corn in the field. Under date of December 21 Mr. Gregory wrote as follows:

"As promised, I now give you results of disease amongst our cattle supposed to be corn stalk disease and investigated by yourself.

"At the time of your visit here, if I remember rightly, there were five steers down in the field, one dead, and at the farm those that fell were being hauled up and made comfortable in the lot.

"This continued until some sixteen in all were badly affected, and three or four others evidently sick with the disease were left in the corral. We did not interfere with any able to keep their feet, and these last named, after being helped up once or twice managed to pull through without further assistance.

"Of the five you examined at the hay stack, two got up during the night, reeled about for a few days, and have now recovered, or nearly so. The remaining three died right where they were, but the animal I was about to let you kill for examination (as being most hopeless) lived longer than any of the rest, and it was eight or ten days after your visit before he died.

"Of ten others hauled up to the lot, six died, two are unable to get up, and two have regained their feet and will probably recover. Thus it stands, of the seventy-five steers, twenty or more were visibly affected, of which number sixteen were down and absolutely helpless, ten of these died, four may be said to have recovered, and two yet in doubt, with chances that one will die and one recover.

"In case of the first steer that died, and on which you made a post-mortem examination, I am now, in the light of more extended experience, satisfied that death was hastened by exposure in a helpless and wet condition, he having fallen in a bad place and remained there some time before found during severe weather. At least all others have lingered from a few days to two weeks or more. Nearly all the dead have been examined by Dr. Lytle, a local veterinary surgeon, and conditions found about the same as those you found but more intense, which is probably accounted for by death being hastened by exposure in the animal you examined. In all cases the several stomachs of the animals have been in a condition nearly normal, and in much better shape than any of the other organs unless it was the urinary organs. Heart and lungs always badly congested (lungs completely filled). Brains and spinal cord congested to a greater or less extent in five or six cases. In one case this appeared normal.

"In every case the disease first became apparent by animal's want of control of hind parts, sometimes holding neck as if stiff and head frequently carried unnaturally. Eyes and ears looked all right, and dung, while not just what it should be, was about what might be expected from animals grazing on dry stalks.

"When the animals were able to keep their feet, or to put it another way perhaps, when the disease did not get hold enough to prostrate, they got over it without assistance or medical aid, but amongst those that 'got down' it was quite fatal. In a number of cases it was two or three days after the cattle had been taken from the field before they were sufficiently affected to show it to an ordinary observer.

"Most of them bled at the nose, for which the condition of lungs after death would account. After being hauled up and made comfortable, most of them ate and drank quite well. Those that got well improved in this respect right along, while those that died gradually gave way, taking less and less nourishment. Their respirations became more rapid and shorter, until just before death the mouth was held open, tongue protruding and respirations only a gasp. The animals in every case reached death by suffocation, through failure of lungs, but presume while it was the direct cause of death it was only secondary.

"We treated some of the cases a little, giving first a cathartic drench, adding both a heart and nerve stimulant; supplemented same with injections and cleared out rectum. After that we used nux vomica for a constitutional treatment, either by drench or hypodermic injections of strychnia solutions, but did no good.

Merit

Is what gives Hood's Sarsaparilla its great popularity, increasing sales and wonderful cures. The combination, proportion and process in preparing Hood's Sarsaparilla are unknown to other medicines, and make it peculiar to itself. It acts directly and positively upon the blood, and as the blood reaches every nook and corner of the human system, all the nerves, muscles, bones and tissues come under the beneficent influence of

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The One True Blood Purifier. All druggists, \$1.

Hood's Pills cure Liver Ills; easy to take, easy to operate. 25c.

"Now may I ask a favor, and by way of explanation will state that my partner laughs at the idea of any corn stalk disease except impaction; has seen stalks grazed all his life, etc. I would like something to convince him that if he gets into the wrong field that 'salt, sulphur and water' will not cure his cattle. I don't pretend to know anything about it myself, but I do know that the cattle became diseased in the stalk field and that it was not impaction. As you have been personally looking the matter up, will you kindly give me result of conclusions?"

This outbreak at Mr. Gregory's is a very interesting and peculiar one. It is evidently not the ordinary corn stalk disease, or if it is the corn stalk disease it differs radically in the following particulars:

The disease came on slowly. A well defined paralysis of the hind quarters. Severe congestions of the lungs. Absence of reflex nervous symptoms, such as delirium, etc., and no impaction of the manifolds.

The history and symptoms as exhibited by these cattle would indicate that they were affected by some poisonous substance, which had a paralyzing action upon the nervous system as shown by loss of control of hind parts, and congestion of lungs, which indicates a weak action of the heart.

The source of this poisonous substance, if such it be, may be in the rotten corn; something of the nature of a ptomaine or nitrogenous base formed in the decomposing corn.

(To be continued.)

Breaking Prairie—Crop the First Year.

EDITOR KANSAS FARMER:—In your issue of August 6 is an inquiry by Mr. J. L. Heisey, in regard to breaking prairie sod, answered by C. J. Norton. I will give you the experience of one of my neighbors in Iowa, somewhere about twenty-five years ago, an account of which was published in the New York Tribune at the time.

Like Mr. Heisey, he wanted to raise a crop without waiting a year for the sod to rot, and so proceeded as follows: He first turned a four-inch sod and followed in the same furrow with stirring plow and turned six inches of dirt on top of the sod. The next sod was turned into the bottom of the furrow and another furrow on top of it, and so on to the end. The piece was then planted to corn, and he never put plow or hoe into it after planting, and he had the biggest crop of corn in the county, and scarcely a weed to be found in it. The next spring he plowed the land and sowed to spring wheat, and had one of the best crops he ever raised. And he said the ground, for the whole ten inches turned, was just like an ash-heap, with scarcely a trace of sod to be found in it.

Topeka, Kas. S. S. BOZARTH.

To restore gray hair to its natural color as in youth, cause it to grow abundant and strong, there is no better preparation than Hall's Hair Renewer.

Union Pacific Route.

What you want is the through car service offered between Denver and Chicago via the Union Pacific and Chicago & Alton railroads, which is unexcelled by any other line. Magnificent Pullman sleepers, dining cars and chair cars, run through daily without change, Denver to Chicago via Kansas City.

Irrigation.

REDEMPTION OF THE PLAINS.

In an excellent paper by the late Prof. Robert Hay, published after his death in *Harper's Weekly*, occurs the following able summary of the possibilities:

"Without going further into details it may be affirmed that the visible water of the streams, with the underflowing beneath their beds and under the adjacent bottom lands, is sufficient to irrigate in the great valleys of the plains an area probably larger in proportion than is accomplished in the irrigated districts of California or Utah, and that without carrying water far. These great valleys may become permanent gardens in the desert. This is also true of the smaller valleys to a great extent. The Running Water, the Chugwater, the Lodgepole, the Frenchman, the Republican, the Prairie Dog, the Smoky Hill, the Cimarron, the Medicine, the Canadian, and the Red river will all have long lines of permanent fertility assured by the artificial application of water. Much of this will be done by lifting the water with ordinary pumps, centrifugal pumps and water elevators. It is shown that it can be done. There are examples in nearly all these valleys. It is a marked feature of the Arkansas valley in western Kansas.

"But the sum total of these areas, though perhaps amounting to 25 per cent. (a very large proportion) of the bottom lands and second bottoms, rescued thus from frequent dearths would be, after all, inconsiderable as compared with the whole plains region. The high prairie of the interfluvial spaces, notably from the 100th to the 104th meridian, can be supplied with water only from wells from eighty to 300 feet deep. Fortunately the districts where they are over 200 feet are not extensive. There are areas where for scores of miles the wells are less than 100 feet deep; there are others where the depth is between 100 and 200 feet. Engineers of repute confidently state that mechanical difficulties in the way of lifting water sufficient for five or ten acres from these depths are all overcome, and that at a cost that will leave a margin of profit for the careful cultivator. There are isolated experiments showing this in many parts of the plains region, but in the spaces included between the forks of the Republican and its tributaries the work done is a demonstration. In Sherman county, Kansas, and the neighboring part of Colorado, there are upwards of a hundred acres of irrigation, from a few rods square to several acres, a few of ten acres or over. The water is lifted by wind-pumps into reservoirs from fifteen to twenty feet in diameter to 150 feet square. The reservoir on the top of the ground has its contents run rapidly over one or two acres, is refilled, and next time is emptied on other land. Where the pump is large, and the wind engine has been made purposely for irrigation, the result is also large, and peculiarly successful. Where the pump and windmill are what were put in merely for domestic purposes, and only a garden patch has been irrigated the result is also highly satisfactory. In the dry season of 1894 such small irrigated gardens were the sustenance of the family. Such examples have led to a very large increase in the number of reservoirs put in and strong windmills built. The State of Kansas, by an irrigation commission appointed last year, is putting in a number of experiment stations, using different kinds of pumps, different motive powers—gasoline, steam and wind—in different situations, with wells of different depths, to carry further the demonstration already made that a number of acres of an upland farm can be irrigated from the water that is beneath it.

"These two questions involved in the irrigation of the plains uplands are now practically answered in the affirmative. Can water be lifted 200 feet at so low a cost that it will pay to irrigate with it from that depth, and is there water enough below the surface to irrigate any proper proportion of

the large area of the semi-arid uplands? Saying yes to both of these queries, it may also be said that where water is even at greater depths enough may be raised with comparatively small expense to irrigate so much land as in dry years will be a material addition to the means of subsistence of the farmer's family.

"The writer has no doubt of there being enough water [in the tertiary formation previously mentioned to irrigate 5 per cent. of the land of large parts of the Western plains. The mechanical devices for raising the water are becoming better and cheaper every year. There was never before such activity among the manufacturers of water-lifting appliances as is the case at the present time. The volume of water and the means to lift it being assured, the redemption of the plains from the stigma of aridity is also certain.

"In saying this it must not be understood that irrigation of the uplands means the irrigation of large bodies of lands in solid areas. It is absolutely true that under present conditions a family can obtain a good living from three acres of irrigated land. If a family can within itself supply the labor for the irrigation of ten acres, or even hire some help, competence and comparative wealth will be certain in a comparative short period. The owner of 160 acres, irrigating from three to eight acres, will always produce a living and some surplus. The rest of his acres for pasture, for timber, for some grain, will give additional surplus in the good years, and his family will always have the means and leisure to give attention to mental improvement and be certain of increase of home comforts and some of the luxuries of life.

"The position and volume of the subterranean waters point to the desirability of numerous pumping plants scattered over the plains—not large ones with expensive machinery. Wind is the cheapest motive power. It is abundant on the plains. These facts all suggest that small holdings, say the standard 160 acres as the maximum, worked by the owner and his family, are those that will most economically operate in the redemption of the plains.

"There is, however, much land on the plains owned by great corporations—railways, mortgage loan companies, townsites companies, and by individuals who have bought the land for speculative purposes. It is notorious that most of these would be very glad of an opportunity to unload. The general desire to redeem the plains, and the recent investigations and experiments which have demonstrated the possibility of the redemption, give these corporations and individuals the opportunity they desire. They have, however, a duty in the matter. It is their business on their own lands to complete the demonstration. Let them show water used for irrigation on one quarter section and purchasers will not only offer for that land, but the neighboring lands similarly circumstanced. Thus, from nuclei thus established, irrigation areas will slowly extend over all the plains. It is only fair to say that some corporation with enlightened self-interest have begun to work in this direction.

"In referring to the irrigation of the plains by water lifted by mechanical appliances I have not been unmindful of the desire for obtaining water from artesian wells. There are areas where the conditions are favorable, and where the driller has been rewarded by a splendid outflow of water. In the central portion of the Dakotas there is an area of ten or twelve thousand square miles where, from several hundred feet deep, water comes to the surface with great pressure and in enormous volume, forming permanent lakes, turning mills and irrigating thousands of acres. A similar area of deep artesian wells of great volume is found in the Fort Worth-Waco part of Texas. The Dakota area will probably be extended west of the Missouri river, and the Texas area may also have a western extension, but there seems to be no other such areas on the plains. In the valley of the Red River

of the North there are artesian wells of small depth, having their supply of water in gravels of the glacial age. In Yellowstone valley, of Montana, there are also some shallow flowing wells from sandstones of late cretaceous age. In the Arkansas valley, and also a little further south, near the 102d meridian, there are a few feebly flowing wells from early cretaceous rocks at from 200 to 600 feet deep. There is also an area of barely twenty square miles in Meade county, Kansas, in which a good supply of running water is given to a large number of wells from fifty to 150 feet deep. The water is used for irrigation. This is the only area, so far known, where the water of the tertiary rocks of the plains exists in artesian conditions. The deeper seated rocks have been drilled to various depths at Oberlin, Kas., Cheyenne Wells (1,770 feet) and Akron, Col., without giving encouragement to the expectation of finding deep-seated artesian water on the plains. The main reliance of the semi-arid uplands must be on pumping the abundant sheet water of the plains tertiary formations.

"Where the slopes from the uplands to the valleys are steep there is abundance of material and numerous sites for the construction of dams to retain water in reservoirs. The eastern part of the arid region has more facilities of this sort than west of the 101st meridian, and the rainfall is greater. In this region the storage of storm waters in reservoirs will be an important factor in the irrigation of slopes and valleys.

"From these sources of supply and these methods of application of water—the use of stored storm water, the use of such artesian wells as exist or may be found, the mechanical lifting into reservoirs on the surface of the deep sheet waters of the uplands, the lifting of the underflow of all the valleys, diversion into ditches of the waters of the springs and streams—from and by all these as large a proportion of the area of the plains can be irrigated as that of any irrigated country in the world, and so it may support a large population that before many decades of the twentieth century have run out will be counted by decades of millions. There will be prosperous and happy and civilized rural communities, many thriving towns on every meridian, and several large cities, in all of which all the forces of civilization will have full play, and the States of the plains will be the focus of the power and wealth of our country. The Eastern States will not be less wealthy nor populous than now, but the western slope of the great central valley will be vastly more so."

A Big Sale of Berkshires.

The first public sale of Berkshire hogs, held at Springfield, August 12, 1896, by Messrs. N. H. Gentry, Sedalia, Mo.; A. J. Lovejoy & Son, Roscoe, Ill.; M. K. Prine & Son, Oskaloosa, Iowa, and W. E. Spicer, late of Nebraska and now residing at Bushnell, Ill., was very satisfactory. The sale was held during the most protracted heated season in history, and notwithstanding the rain which continued from early morn until night on the day of the sale, the attendance was good and the spirit of enthusiasm manifested for the Berkshire was all that could be desired. The Berkshire breeders of the following States were present in person or represented by mail bids, viz.: Illinois, Indiana, Iowa, Kentucky, Louisiana, Mississippi, Missouri, Nebraska, Ohio, Pennsylvania, Texas, Vermont and West Virginia.

It will be seen below that the stock was sold to breeders residing in the States of Illinois, Indiana, Iowa, Kentucky, Missouri, Nebraska, Ohio, Pennsylvania and Texas. The amounts of the sales to the breeders of the several States are as follows: Illinois, \$1,090; Missouri, \$645; Iowa, \$405; Texas, \$305; Indiana, \$171; Kentucky, \$154; Pennsylvania, \$60; Ohio, \$50, and Nebraska \$25. The average price per head paid by the breeders of the several States is as follows: Texas, \$153; Iowa, \$135; Missouri, \$107; Ohio, \$50; Illinois, \$47; Indiana, \$43; Kentucky, \$39; Pennsylvania, \$30, and Nebraska, \$25. The highest price paid for a boar was \$190, for Wood Dale Duke III. 40745. The highest price paid for a sow was \$205, for Riverside Belle XXVII. 37014, and the same price was paid for Duchess CXL. 40704. The lowest price paid for a boar pig was \$14 and the lowest price paid for a sow pig was \$19. The average price paid for seventeen young pigs was \$34.41. The average price of all the other boars and



Bathing the baby is one of the joys of young motherhood. The mere sight and touch of the soft, sweet, cooing, crowing little creature is a solace for many sorrows. This happiness is missed if either mother or child be sickly, weak, nervous, cross. If either is so, it is the mother's fault. She has failed to keep herself well and strong during the period of gestation, and the neglect shows in her baby.

All the peculiar ills of womankind are cured by Dr. Pierce's Favorite Prescription. It relieves pain, allays inflammation, stops debilitating drains, strengthens and vitalizes the organs involved. It so perfectly prepares a woman for the time of parturition that pain and danger are practically eliminated. By its use perfect health is assured for both mother and baby. It is the most marvelously efficient medicine ever devised for this purpose and the only one that may be absolutely depended upon.

Mrs. Amanda Ellison, of No. 2100 Boonville St., (Station A), Springfield, Mo., writes: "I am happy to say that I followed your advice and took your 'Favorite Prescription' before my fourth child was born, and I got through all right. My first three were still born. Your advice was to take the 'Favorite Prescription' and I had a much more easy time than when my first children were born. Now I have two boys living and they are as fine boys as there are in Springfield, Mo. I am the happy mother of these two boys."

Dr. Pierce's 1008 page book, Common Sense Medical Adviser is full of useful knowledge from title-page to *finis*. It may be had in paper covers for the bare cost of mailing. Send 21 one-cent stamps to World's Dispensary Medical Association, Buffalo, N. Y. For 10 cents extra (31 cents in all), the book will be sent in fine French cloth binding.

sows in the sale was \$80. Nine head sold at an average of \$153.33. Two head sold at an average of \$205. The average of the entire lot sold was \$63.16. Every animal brought to the sale was sold without reserve and there was not the slightest expression or cause for doubting the good faith in the seller or that the buyer was not well pleased with his purchase.

Messrs. Gentry, Lovejoy, Prine and Spicer have selected Thursday, February 4, 1897, for their next sale, to be held on the Illinois State fair grounds, at Springfield.

Very low rates will be made by the Missouri, Kansas & Texas railway, for excursions of August 18, September 1, 15 and 29, to the South, for Home-seekers and Harvesters. For particulars, apply to the nearest local agent, or address G. A. McNutt, 1044 Union Ave., Kansas City, Mo.

Ho! for St. Paul.

Be sure to find out about the official G. A. R. train that will leave Kansas on the Great Rock Island Route, Sunday, August 30, and run directly through to St. Paul, arriving Monday noon. Address

T. J. ANDERSON, Asst. G. P. A.,
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To St. Paul and Minneapolis via Burlington Route.

Two splendid through trains each day from Missouri river points to the north via the old established Burlington Route and Sioux City line. Day train has handsome observation vestibuled sleepers, free chair cars, and dining cars (north of Council Bluffs). Night train has handsome sleepers to Omaha, Council Bluffs and Sioux City, and parlor cars Sioux City north. Consult ticket agent.

L. W. WAKELEY, Gen. Pass. Agt.,
St. Louis, Mo.

To Colorado, Montana, Hot Springs, Puget Sound and Pacific Coast via Burlington Route.

Take the shortest and most desirable line to the far West; complete trains from the Missouri river. Daily train leaves Kansas City at 10:40 a. m., arrives Billings, Montana, 1,050 miles distant, 6:45 next evening; free chair cars Kansas City to Billings; sleepers Kansas City to Lincoln; through sleepers Lincoln to Billings. Connects with fast train beyond to Montana and Puget Sound. Ten to twenty-five hours shorter than other lines from Kansas City.

Through sleepers and chair cars Missouri river to Denver; Rio Grande scenic line beyond for Colorado, Utah and California. Ask agent for tickets over the established through lines of the Burlington Route.

L. W. WAKELEY, Gen. Pass. Agt.,
St. Louis, Mo.

Weekly Weather-Crop Bulletin.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending August 24, 1896, prepared by T. B. Jennings, Section Director:

GENERAL CONDITIONS.

The Kaw and Smoky Hill rivers apparently divide the State for temperature this week, the south side ranging from 1° to 4° above the normal, while the north side ranges from 1° to 4° below, yet extremely hot weather was general on the 20th and 21st. An irregular line drawn from Labette northwest to Wallace divides the State for rainfall, the north side receiving an excess, the south side a deficiency. The rainfall amounts to from three to five inches in the northern tier of counties east of Rawlins, extending south into Allen in the eastern counties, culminating in a six and a half inch fall in Johnson.

RESULTS.

EASTERN DIVISION.

The conditions this week, except Thursday and Friday, have been very favorable to all growing vegetation. Late corn has brightened up again, pastures revived, meadows from which the hay has been taken greened up, and the stock water replenished and refreshed, except in the southwestern counties. The early corn is being shocked and fall plowing pushed. Haying is completed in some counties, not yet finished in others; quality and quantity good.

Allen county.—The rain has revived all vegetation; corn is all out of the way of frost; apples and peaches are abundant but quite wormy; fall pastures good and stock water abundant.

Chautauqua.—Haying, corn-cutting and plowing for wheat are progressing under quite favorable circumstances;

Shawnee.—This rain assures an immense corn crop; some corn out.

Wilson.—Hot winds two days, like coming from a furnace; the light showers revived things, but we need more for permanent benefit; haying and corn-cutting pretty well along; fall plowing about stopped—ground hard.

Woodson.—Late corn more or less damaged by the drought—that planted June 1 will not make anything, that planted earlier a fair crop; frost would do no damage except to Kaffir; Kaffir corn stood the drought better than anything else.

MIDDLE DIVISION.

The rains have put the ground in the northern half in shape for fall plowing and greatly benefited pastures, uncut hay, late corn and the forage crops. In the southern portion rain is very badly needed, yet cattle, stock water and the forage crops are in very good condition after a month's drought.

Barber.—An intensely hot, dry week, the mean of the maximum temperatures being 104°, yet the mean night temperature was but 66°; hot winds 15th, 20th, 21st; rain badly needed, range dry but cattle in good condition.

Barton.—Terrible hot wind on 21st burned up pretty nearly everything; no danger for frost; corn will be very light; .60 inch rain night 21-22 stops threshing but not enough for plowing; potato crop light.

Butler.—Corn-gathering and cutting in progress; pastures needing rain; much fine hay being put up.

Clay.—Corn doing fine, has not suffered a day since planting; hay and pastures good; ground in excellent condition for plowing.

Cloud.—Cool, rainy week; an immense corn crop now assured.

Cowley.—Another dry, hot week;

winds; corn fields all dried up; the corn crop will be greatly damaged.

Summer.—Saturday's shower first in five weeks; corn dry enough to crib; Kaffir mostly ripe; pastures drying up; sorghum hay out; all danger from frost past.

Washington.—Fine week on corn; plenty of rain and a "bumper" corn crop, but the rains delayed threshing and haying.

WESTERN DIVISION.

Reports are short from the southern counties, but conditions are favorable in the northern for late forage crops. Alfalfa and the range grass are in very good shape, and in Wallace the third alfalfa crop is ready to cut. In Trego the heavy dews, followed by cloudy mornings, have prevented haying to any extent.

Decatur.—Much cooler, but practically dry until the 21st; much of the corn fair to good and much damaged from slight to total loss, but withal will have a good crop.

Ford.—Alfalfa doing well; corn safe from frost; stock on range in fine condition.

Hamilton.—Good rains in central part of county, but little in western; grass good in places, but burnt up in others.

Rawlins.—Much cooler than preceding week (which had burned up everything); several prairie fires started on the 21st by lightning but rain soon put them out.

Sheridan.—Wheat, oats and barley light crop, with threshing about done; corn much injured; forage crops good; fall plowing begun.

Sherman.—The rains have greatly benefited the forage crops, the range and stock water.

Thomas.—The rain of the 21st was general, but very little corn will be benefited by it, though it will put the ground in fine shape for fall work.

Trego.—The early corn was past the danger point when the warm wave struck; the late was damaged by hail in places, a few report large yields, others just fodder; cloudy mornings with heavy dews—poor hay weather but good for late fodder crops.

Wallace.—Fine week for maturing crops; threshing in progress; early corn past frost; third crop of alfalfa ready to cut; range grass good; grasshoppers still at work.

Publishers' Paragraphs.

CORN CRIBS.—The Western Manufacturing Co., of Kansas City, Mo., this week advertise a corn crib that will be very much in demand, owing to its cheapness and practical value. It met with a wide sale in the West last year, and with the improved features this season it should have an enormous sale.

One of the most promising speed programs in the West this season is the St. Joseph fall meeting, on September 8-11, 1896. This is race and carnival week at St. Joseph, and half-fare rates are open to everybody living within 200 miles of this attractive city. For further information concerning this race meeting, address Palmer L. Clark, Secretary, St. Joseph, Mo.

The Illinois State fair will be held at Springfield, from September 28 to October 3, and the premiums offered amount to \$45,000. This association has one of the best-equipped fair grounds in this country, and the State Board of Agriculture has spared no pains in the past in making the Illinois State fair the "greatest fair on earth," and will put forth every effort to make the coming fair greater than any of its forty-two predecessors.

THE ELI BALING PRESS—Is one of the handsomest and best built presses on the market. Its forty-six-inch feed opening gives it great capacity. It not only permits of the feeding of enormous charges of hay or straw, but, as the condenser works automatically with the plunger, the operator is saved the trouble of lapping and forming the charges in the press hopper, this being accomplished by the machine. The charge is placed in the large condenser when it is wide open, then, as the plunger rebounds, the condenser contracts and the charge is condensed to about one-half its original size. The charge is then pushed into the pressing chamber by a single stroke of the fork, where it receives its final pressure from the plunger. The condenser is a peculiar feature of this press, which makes it very popular. The "Eli" is handled in Kansas City by the Kansas City Plow Co. Write it or the Collins Plow Co., Quincy, Ill., for prices, etc.

Young men or old should not fail to read Thos. Slater's advertisement on page 15.

Remember that you can get the KANSAS FARMER and the Kansas City Daily Star, both for one year, for \$4, or the KANSAS FARMER and the Kansas City Weekly Star, both for one year, for \$1.20.

FARMERS

DO YOU WANT TO BETTER YOUR CONDITION? If you do, call on or address: The Pacific Northwest Immigration Board, Portland, Oregon.

List of Kansas Fairs for 1896.

Following is a list of fairs to be held in Kansas during the present year, their dates, locations and Secretaries, as reported to the State Board of Agriculture and furnished by Secretary F. D. Coburn:

Allen County Agricultural Society—H. L. Henderson, Secretary, Tola; September 8-12. Anderson County Fair Association—George Patton, Secretary, Garnett; September 1-4. Brown County Exposition Association—E. H. Hoyer, Secretary, Hiawatha; September 15-19. Chase County Agricultural Association—H. F. Gillett, Secretary, Cottonwood Falls; September 15-18.

Cloud County—Concordia Fair Association—Homer Kennett, Secretary, Concordia; September 29-October 2.

Coffey County Fair Association—J. E. Woodford, Secretary, Burlington; September 15-19.

Douglas County—Sibley Agricultural Association—Wm. Bowman, Secretary, Sibley; September 16-18.

Finney County Agricultural Society—D. A. Mims, Secretary, Garden City; October 6-9.

Franklin County Agricultural Society—Olas. H. Ridgway, Secretary, Ottawa; September 22-26.

Greeley County Horticultural and Fair Association—J. B. Newman, Secretary, Tribune; September 8-9.

Jackson County Agricultural and Fair Association—S. B. McGrew, Secretary, Holton; September 14-18.

Johnson County Co-operative Fair Association—C. M. Dickson, Secretary, Edgerton; September 15-18.

Johnson County Fair Association—W. T. Pugh, Secretary, Olathe; August 25-28.

Linn County Fair Association—Ed. R. Smith, Secretary, Mound City; October 6-10.

Miami County Agricultural and Mechanical Association—Geo. P. Leavitt, Secretary, Paola; September 29-October 3.

Montgomery County—Southeast Kansas District Fair Association—D. W. Kingsley, Secretary, Independence; October 13-16.

Morris County Exposition Company—E. J. Dill, Secretary, Council Grove; September 22-25.

Nemaha Fair Association—John Stowell, Secretary, Seneca; September 8-11.

Neosho County Agricultural Society—H. Lodge, Secretary, Erie; September 8-11.

Neosho County—The Chanute Agricultural, Fair, Park and Driving Association—R. O. Rawlings, Secretary, Chanute; September 1-5.

Ness County Fair Association—Sam G. Sheaffer, Secretary, Ness City; September 17-19.

Osage County Fair Association—G. W. Doty, Secretary, Burlingame; September 1-4.

Osborne County Fair Association—F. P. Wells, Secretary, Osborne; September 15-18.

Riley County Agricultural Society—R. O. Chappell, Secretary, Riley; September 15-18.

Rooks County Fair Association—David B. Smyth, Secretary, Stockton; September 8-11.

Saline County Agricultural, Horticultural and Mechanical Association—H. B. Wallace, Secretary, Salina; October 7, 8, 9.

Sedgwick County—Kansas State Fair—C. S. Smith, Secretary, Wichita; September 22-26.

Wilson County—Fredonia Agricultural Association—J. H. Edwards, Secretary, Fredonia; August 25-28.

Thos. Slater has a message for every man on page 15.

Send \$1.35 to KANSAS FARMER office for one year's subscription to KANSAS FARMER and Chicago Weekly Inter-Ocean.

Unequaled Service

Denver to Chicago via Kansas City is given via the UNION PACIFIC and Chicago & Alton railways.

Through Pullman Sleepers, Pullman Dining Cars and Free Reclining Chair Cars leave Denver Daily. The Union Pacific is the great through car line of the West. Ask your nearest ticket agent for tickets via this line.

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Gen. Pass. and Ticket Agent,
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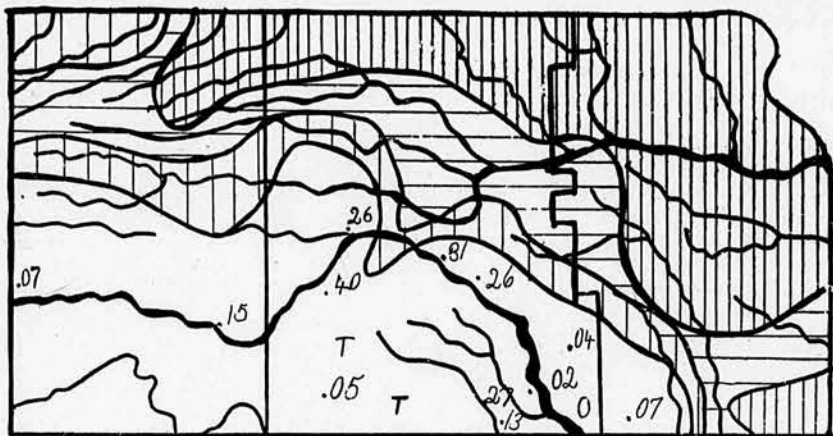
If You Would Keep Cool

take the "Twin City Special" any evening from Kansas City, Leavenworth or St. Joseph, on the Chicago Great Western Railway (Maple Leaf Route), and spend a few days at the beautiful Minnesota lakes. Summer excursion rates now in effect. Through sleepers, free chair cars and cafe dining cars. Full information as to desirable resorts in the Northwest will be cheerfully furnished by G. W. Lincoln, Traveling Passenger Agent of the Chicago Great Western Railway, 7 West Ninth street, Kansas City, or F. H. Lord, G. P. & T. A., Chicago.

Ho! for Cripple Creek.

Remember that the Chicago, Rock Island & Pacific is the only line running directly from the East to Colorado Springs, the natural gateway to the Cripple Creek District. Colorado Springs lies at the foot of Pike's Peak at its eastern base, and Cripple Creek is part way down the southwest slope of Pike's Peak and near its western base.

Two all rail routes from Colorado Springs are offered you. One by the Midland railway up Ute Pass, via Summit, to Cripple Creek. Another over the Denver & Rio Grande, via Pueblo and Florence, to Cripple Creek. Take the great Rock Island Route to this wonderful gold mining camp. Maps, folders and rates on application. Address
JNO. SEBASTIAN, Gen'l. Pass. Ag't.,
Chicago.



Scale of shades less than 1/2 1/2 to 1 1 to 2 over 2 Trace

ACTUAL RAINFALL FOR WEEK ENDING AUGUST 22, 1896.

Thursday, highest temperature in twelve years.

Cherokee.—A favorable week for maturing the corn; the crop, however, has been reduced some by the extra wet summer.

Coffey.—The rains have revived the corn that was not dead, stopped haying and pressing, but greatly benefited stock water, pastures and all kinds of feed.

Douglas.—The rains helped the corn very much; farmers are plowing; haying still in progress.

Johnson.—Good week for late corn and pasture.

Labette.—The drought lasted too long for the late corn; ground in good condition for wheat-sowing, which will begin soon; apples falling badly, nearly gone.

Marshall.—Corn doing finely, will be out of reach of frost in two weeks; too wet for haying or fall plowing.

Montgomery.—First half of week cool, followed by a hot wave with occasional hot winds and the highest temperature this year, rapidly drying corn and grass; farmers busy cutting corn.

Morris.—Three good showers this week; lightning struck school house and church in Delavan, burning it to the ground.

Oaage.—Rains beneficial to pastures but most too late for much good to late corn; stock water more plentiful; fall plowing in progress.

Pottawatomie.—Fine growing week; early corn out of danger from frost; not much late corn in county; the wind blew off many apples and broke down much corn and sorghum and damaged the millet crop; haying delayed; pastures splendid; an immense corn crop.

Riley.—A fine growing week for the very late corn; wet, cloudy weather has delayed haying; fall plowing progressing; grapes, peaches and watermelons abundant.

many have quit plowing—ground too dry and hard.

Harper.—Hottest week ever known here; need rain badly.

Harvey.—Both extremes—hot wind and cold blast—reached here this week; not enough rain fell to be noticed.

Marion.—The rain improved pasture but there was not enough for fall plowing.

McPherson.—Insufficient rainfall to make plowing good; Kaffir and cane holding out well; corn has quit growing; gardens dead; pastures dry.

Mitchell.—Cooler, cloudy weather and abundant rain have improved much of the late corn injured by the heat; the crop will exceed that of last year; all forage crops are in good condition.

Ottawa.—A cool week, but late corn was dead; early corn will be a fair crop; favorable for plowing; severe hail night of 21-22.

Phillips.—Favorable for plowing; corn is matured, mostly by hot winds; good showers have improved conditions.

Pratt.—Hot winds three days, doing further damage to late corn and all other growing crops; haying and harvesting of Kaffir and cane continue; grass dry.

Republic.—Cloudy week; too wet for haying; farmers plowing stubble for wheat, some are planting; corn beginning to harden.

Rice.—Rain came too late to save the general late corn, though in localities it is green and growing.

Saline.—The showers have loosened the ground for plowing in places; haying and corn-cutting the order of the day.

Sedgwick.—Very hot and dry; four weeks without rain, but week ends cool, with light sprinkles; pastures shortened; half the hay crop still uncut and is greatly injured; corn is dried up but is a good crop; peaches have fallen and decayed a great deal.

Stafford.—Two hot days with hot

The Home Circle.

"IT AIN'T FAIR."

"I ain't goin' to play," said the little boy.
"Cause it ain't fair—
You other boys is bigger on me,
And think you kin cheat, an' I won't see;
I ain't no fool, an' I'll tell you what's what,
I got as much sense as any boy's got—
You know when you're wrong, an' I know
when I'm right,
An' I'm goin' straight home 'fore I git in a
fight,
Cause it ain't fair."

"I've been 'it' now twice together,
An' it ain't fair;
When I's hidin' my eyes I heerd Joe snigger,
An' tell you other boys how he'd figger
Some way to make me hide agin,
But you betcher life I'll ist fool him—
Needn't think you can cut up an' make me
grin,
For the way you treat me is a down-right sin,
An' it ain't fair."

Ah! little boy, adown life's road,
There waits for you a heavy load,
"But it ain't fair."
While the sun shines you'd better make hay,
Childhood's days can't always stay;
We never think we have our share;
So laugh, little boy, and never care—
Soon 'twill be real, where now 'tis play,
Better try, little boy, to forget to say—
"It ain't fair."

Another has won his sweetheart from him,
"But it ain't fair."
Fond love-letters with blue ribbon tied
Came to-day from his rival's bride;
And scribbled there was a word or two—
"I regret very much if I wounded you."
Somebody's truth had now been tried,
Somebody never would walk by his side—
And a sigh that stole up from his lone heart
cried,
"It ain't fair."

"Yes, Jedge," said the tramp, "I'll leave
town to-night,
But it ain't fair.
I had a home onct and money could save,
An' round my windows the lilacs ud wave,
Hain't no money now, can't git work,
No, no sir, Jedge, don't call me a shirk—
I know I'm an outcast, but not a knave;
Yes, Jedge, I hear, but it's hard to be brave,
Cause it ain't fair."

Mother was dead, and the poor old man,
Left all alone sobbed, "It ain't fair."
She worked for the children while they
grewed,
From the cradle up, all their faults she
knowed;
But she kivered 'em up as a mother would,
An' she said every one of her children wuz
good.
Then he bowed his head on her vacant chair,
And in pity it creaked, as I left them there,
It seemed to moan with him—
"It ain't fair."
—Ida Hammond Clark.

VEAL FOR SUNBURN.

Damaged Complexions Restored by Applying a Cutlet.

The cry which rises annually from every seashore, country and mountain resort in the land has this year met with a new response. Pasty lotions of more or less harmless proprieties are no longer advocated as a cure for sunburn. Complexions which have been given a crimson tinge by too long exposure to summer suns now find their speediest cure in a veal cutlet. The "real cure," as it is called, has leaped into a popularity which indicates that it is more than ordinarily potent.

Butchers at the summer watering places have ceased to wonder at the loud demand for veal. They know that when the summer girl returns from her seabath, walk or drive, her first thought is for the veal cutlet that shall preserve the delicacy of her complexion. The proper procedure is to have the cutlets shaved into very thin slices. These raw slices must be carefully laid over the face, and lightly kept in place by passing narrow tape or ribbon over them. The result is not becoming, but that is unimportant. The victim then retires to a perfectly darkened room and lies down for at least half an hour. When the veal becomes warm by contact with the face, it should be turned over and again applied.

When the face has ceased to burn the veal may be removed and the face gently washed with elder-flower water. The face should not be again exposed to the sun the same day, and no soap should be used on it for a day or two. When these precautions are observed the veal cure is guaranteed to be effectual.—Chicago Tribune.

A last season's straw hat that has become discolored may be cleaned with very little trouble. Procure at the druggist's two cents' worth of powdered yellow sulphur and mix it with the juice of a lemon. With a soft brush or piece of white cloth rub this mixture into the straw; take a fresh piece of cloth, slightly dampened with cold water, and rub the straw well. Put the hat aside for 24 hours, then brush thoroughly with a clean brush to remove any powder that may remain. The straw should be fresh, clean and creamy in color.

PRINCESS OF WALES.

How the Future Queen of England Looks at the Spinning Wheel.

The princess of Wales had the fortune to be reared in homely simplicity. Her father, when she was born, was duke of Schleswig-Holstein-Sonderburg-Glücksburg, a younger son of a not very rich house, and without a private fortune. His family was brought up economically, like that of any country gentleman. It is not strange, therefore, that the princess, his daughter, should be especially marked among the royal personages of Europe for her domestic tastes. It is well known that in her girlhood she made and remodeled her own simple frocks and trimmed herself her own headgear. Her mother was a German, and she herself received the excellent training in the needle and housewifely arts that German matrons deem essential for their daughters. Among these is the use of the spinning-wheel, and the princess recurs with a never-ceasing affection to that homely but picturesque implement, in the use of which she is as skillful as any German country girl of the time when she was one herself. Though the princess of Wales no longer is obliged to do spin-



PRINCESS AT THE SPINNING WHEEL.

ning or even sewing, still, simple and unpretentious soul though she is, she may not be insensible to the effectiveness the spinning-wheel lends as an accessory in the portrait of a graceful and beautiful woman.

The art of being a grandmother comes pleasantly to this lady, and she never seems more charming than when she tends the pretty little girls and boys of the third generation. She is loving; but strict, too, and there is no danger that Prince Edward and his brother and the little Duffs will be spoiled. No royal lady ever had more good, practical common sense than this princess.

PLANNING A PICNIC.

Appetizing Things to Eat and Ways of Amusing the Children.

Unfortunately in many households a picnic is such a rare occurrence that no one member of the family knows how to plan for it, and the result is more tiresome than a hard day's work.

When packing the lunch basket it is wise to remember that when the thermometer touches the nineties foods should be mainly water. The solid portions of our diet should not contain an excess of fat, for that would only add to our discomfort in warm weather. Plenty of bread spread thinly with butter or just enough chopped meat for a relish should be the principal part of the contents of the lunch basket. Lettuce and cucumbers are appetizing additions to sandwiches. Cheese chopped or melted or mixed with a little cream and seasoning is an excellent filling for either bread or cracker sandwiches. Of cakes the average picnic basket has a too generous provision; cookies of some sort must be provided for the children, but there need be little else. Ripe fruit is more wholesome and more easily provided than all the host of sweets which so often make the preparation a burden.

The little children will be amused for awhile at least by picking the big heads of red clover in the pastures for pun-
tio

or mamma to make a pillow of after they are nicely dried. Just now they are put in a big bag brought for this purpose and when taken home are sprinkled lightly with salt and allowed to dry thoroughly. The older boys will rest without being uneasy for a short time by pulling twigs of fir to be mixed with the clover, by and by, or to make a pillow by itself.

When this employment becomes tiresome it will make a pleasant variety to follow the old fashion and let all the children who can "speak pieces." This is the time for the patriotic verses, old, but ever new when repeated at the right time and with the right spirit.

On one occasion the house mother prepared a blueberry roly-poly pudding at home and brought it in its bag to the picnic ground, where the father soon had a fire started and the kettle boiling merrily. The hot pudding served with cream was a much more satisfactory supper than elaborate dainties could have been.—American Kitchen Magazine.

MIRRORS IN GLOVES.

Novelty That Promises to Become Dear to the Feminine Heart.

A mirror in the palm of the glove is the latest novelty. With its assistance its owner is enabled to be sure that her bonnet is on straight and also that her curls are in perfect order. She can likewise ascertain if her bow is at the most becoming angle at the proper time.

All these things and a hundred others, important from a feminine point of view, she can find out on the street without attracting the attention of passers-by, with the aid of this simple contrivance.

The inventor of this device has so arranged the little looking-glass in the palm of the glove as not to interfere with the shutting of the hand. He has likewise taken the precaution of putting it in the left-hand glove, so that when its owner shakes hands with a friend it will not be observed.

It is not the fair sex alone that will find this ingenious contrivance useful. Men are quite as vain as women, so the latter claim, and will be seen by any observer to look at themselves in every mirror they pass on the street.—N. Y. Journal.

The Art of Cooking Water.

The Reflector says that one of the secrets of palatable food is knowing how to cook water. The secret is to put fresh filtered water into a clean kettle already warm, to let it boil quickly, and to use it the instant it is boiled. To let it steam and simmer means to have a combination of lime, iron and dregs in the kettle, and all the good water evaporates into air. It is surprising that many housekeepers, otherwise neat and particular, seem to think that a kettle will stay clean without active measures on their part. The mere fact that nothing but water is boiled in it does not guarantee it against the need of scouring it. It will soon become coated with a rusty-looking layer of slime, unless it receives the same care as other cooking utensils. Food cooked with water which is not properly boiled or which is boiled in a kettle coated with dregs has not the same flavor that properly cooked food has. Moreover, it is dangerous to health.

Precautions About Milk.

Milk is liable to be affected by the health and food of the animal supplying it. Frequently it happens that the animals can eat certain herbs which apparently do not injure them, but which poison the milk. If a cow drinks polluted water her milk will be contaminated, although the animal may not seem to be affected. Under certain conditions bacteria develop very rapidly in milk. If vessels in which the milk is kept be not perfectly clean, or if the room or refrigerator contains any decaying substance the milk will quickly be affected.

Cold Baths Not Beneficial.

Most medical men consider that a cold bath every morning is apt to do more harm than good to any but persons of a very vigorous constitution. The sensible thing to do is to see that the temperature of the water in cold weather is not lower than that of the air. A daily bath is most healthful, but it should not be so cold as to give a shock to the system.

BEST CYCLING SKIRT.

It Is Unlined and Should Be Faced with Fine Leather.

Since the cyclienne is as plentiful as the girl who waltzes, or the girl who goes tramping, gowns for the cyclienne are numerous and pretty. In the shop, where once you saw walking skirts, you now see great "dress trees" upon which hang nothing but cycling skirts.

The skirt liked best is unlined. Lining catches in the heels, for it is sure to break. An unlined skirt faced with yel-



THE ACCEPTABLE LENGTH.

low, light-weight leather, or a very firm piece of black velveteen, is the best for the wheel. The skirt should have a little fullness in the back. Three-inch plaits laid together and an inch plait on each side make all the fullness needed. The remainder of the skirt is sewed plain on the band, with a little fulling on the hips.

All the cycle skirts are made with a middle "partition." This is a cross piece running from front seam to back seam, making the skirt like a divided skirt when looked at from the inside. The outer part is not divided. You step into the skirt and bring it up to the band and button it. It fastens by three buttons on each side of the front seam.

The length of the skirt is a matter of taste. The authorities say it should be to the shoe tops. This is, of course, far below the high tops of the regulation cycling shoes.

To Offset Perspiration.

A little dry cornstarch or pulverized soapstone put on the hands in warm weather will prevent any perspiration injuring kid gloves.

Garlic for Consumption.

Essential oil of garlic has been used to cure consumption by Dr. Sejournet, of Revin, in the Ardennes. Mixed with 200 times its weight of sterilized olive oil it was injected under the skin, producing a marked improvement in the 16 patients on whom it was tried.

You cannot say that you have tried everything for your rheumatism until you have taken Ayer's Pills. Hundreds have been cured of this complaint by the use of these pills alone. They were admitted on exhibition at the World's Fair as a standard cathartic.

AGENTS To sell cigars to dealers; \$18 weekly, experience not required. Samples free. Reply with 2c stamp. National Consolidated Co., Chicago, Ill.

FREE trial in your home. Cut this out and send for catalogue. Prices to suit you. Oxford Sewing Machines awarded World's Fair Medal. GOLD MEDAL AWARDS. FULL SET OF ATTACHMENTS. TEN YEAR GUARANTEE. FREIGHT PAID. ADDRESS: OXFORD MFG. CO., 240 Wabash Ave., CHICAGO, ILL.

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At Druggists. Price, \$1.00 Per Bottle
THE DR. J. H. McLEAN MEDICINE CO.
ST. LOUIS, MO.

The Young Folks.

BE POLITE.

Do you want a motto good?
Be polite.
'Tis the cream of business food—
Be polite.
Your business cannot fail to pay
If every hour and every day
You will cut and gather hay—
Be polite.

Is your selling rather slow?
Be polite.
Would you have it brisker grow?
Be polite.
This is seed in fertile soil
Which will grow without your toil
And will make the trade pot boil.
Be polite.

Are you feeling rather blue?
Be polite.
Do the people weary you?
Be polite.
Note the change which may be wrought,
See what happy smiles are brought
By a pleasant word or thought—
Be polite.

Do you feel the world is cold?
Be polite.
Does it chill as you grow old?
Be polite.
Smile on every one you meet,
With words of cheer all people greet,
You will find this old world sweet—
Be polite.

Said a man with fortune crowned,
"Be polite."
"This the golden rule I've found,"
Be polite.
Every one may rest assured
The highest prize may be secured
If to this motto he is moored,
Be polite.

—5-A Monthly Magazine.

THE KING OF BIRDS.

"Old Abe," the Far-Famed War-Eagle
of Co. C. of the Eighth Regiment,
Wisconsin.

The eagle has been the emblem of nations, courts and warriors for centuries before America was even thought of; so in painting him on our banners and graving him on our shields and coins as heraldic of freedom, fearlessness and power, we but act the part of imitators.

Nevertheless, we can hardly be classed any longer as imitators, for the eagle is now as distinctively our own representative of spirit and valor as the lion is of British bravery and strength, although he is found on the insignia of other nations.

After the Declaration of Independence, Benjamin Franklin, John Adams and Thomas Jefferson were appointed to prepare a device for a great seal of the United States, the result of which, on June 20, 1782, our present great seal was adopted.

A little less than one hundred years later came "Old Abe," the famous war-eagle of Wisconsin. He was captured when very young, in 1861, on the banks of the Flambeau river, in Pierce county, in Wisconsin, by Chief Sky, a Chipewa Indian, who sold the bird to one Daniel McCann, at Eagle Point, for a bushel of corn.

A short time after he was presented to and enlisted in Company C, of the Eighth, or Eagle regiment.

On September 6, 1861, "Old Abe," this title being given him in honor of President Abraham Lincoln, started into service on a perch, carried by a bearer, at the front of his regiment.

The first pitched battle in which he was an active participant was on October 21, 1861. "Abe" was in every battle and skirmish in which the regiment was engaged (thirty-six in number), received but two slight wounds, although he was always in the thickest of the fight, soaring above his regiment through the smoke and din of battle, screaming and encouraging the men onward. He left the field of battle for home, where he arrived September 22, 1864, and on September 26 was formally presented to the Governor of Wisconsin, at Madison, by Capt. Victor Wolf, of Company C, who said that "Abe" had been a good soldier and had never flinched in battle or on the march.

"Old Abe's" career, from this time until his death, on March 26, 1881, was one of renown and excitement, being admired by hundreds of thousands of patriotic people, and presiding at all the great public gatherings held in the country from 1864 to 1881.

A truly wonderful bird, "Old Abe," symbolic of the emblem and great seal of the grandest of nations. May his memory never die! His portrait, herewith printed, was obtained from the J. I. Case Threshing Machine Co., at Racine, Wis., proprietors of the largest threshing machine works in the world, whose trade-mark it has been ever since the war.



PIKE GOES BIRDING.

A Naturalist Tells How It Conducted Its Peculiar Warfare.

It is a common saying that birds go a-fishing, but it is not generally known that very often the case is reversed and the birds supposed to be the enemies of the fishes are caught in the toils.

Several years ago, while fishing off the Maine coast, the writer observed what the fishermen called the running of the dog-fish. One day the fishing for cod, hake and haddock was excellent; the following morning it had stopped as suddenly as though a command to all the finny tribe had been issued by Neptune.

The explanation was that an army of small sharks, swimming in from the unknown depths of the sea, had driven away all the edible fish. This horde was so starved and ravenous that they were a menace to life. If anything was thrown into the water they rushed to the spot; bit at the oars and sails that



PIKE CATCHING BIRD.

dragged overboard and devoured everything eatable that appeared. The gulls and other birds which were in the habit of alighting on the water now became victims. Several were seen to suddenly disappear, jerked down from below to be torn in pieces by these hounds of the sea. In some instances a bird would escape with the loss of a leg, and doubtless numbers were caught by the voracious fish.

The most voracious bird catcher is the pike or pickerel—a sly fellow who lurks beneath overhanging limbs or rocks and watches for some duckling or birdling that strays from the brood. The pike attains a large size and has been known to attack good-sized birds, even loons, though whether it could successfully carry away so large a bird is doubtful.

A naturalist was once watching a pool that was surrounded by willows whose graceful foliage fell over the water, casting deep shadows. Dragon flies and other insects were darting about at the surface, and coursing back and forth, following them in turn were a number of swallows, which now and then touched the water as they darted at some insect. Suddenly, without warning, from the dark pool the hidden observer saw a huge pike leap at one of the birds, the latter barely escaping by a quick movement, while the fish fell heavily into the water. Again it tried to catch one of the swallows, then gave up the attempt.

Another observer was fishing in a small lake when he noticed not far away three young sand martins sitting on a limb just over the water, the mother fluttering about them, endeavoring to induce them to fly. All at once an enormous pike dashed out of the water and seized one of the birdlings from the limb, the poor mother darting about in the greatest alarm. Soon came another leap, and in less than half an hour this voracious fish had carried off the three young birds.—Chicago Inter Ocean.

VALUABLE INDIAN DOG.

How a Magician Fooled Chief Two Belly and His Braves.

Some tribes of American Indians are said to be highly expert at feats of jugglery. Other tribes seem to be almost unacquainted with such tricks, if we are to credit a story said to have been told by a military officer at Fort Sill and reported by the Buffalo Express.

Prof. McAllister, the magician, once visited a camp of River Crows on the Yellowstone, and after extracting vari-

ous packs of cards and other articles from the ears, necks, noses and garments of the astonished Indians, was invited to a big feast of roast dog and other delicacies.

Chief Two Belly was so impressed by the great medicine powers of the professor he took him to his wigwam, introduced him to his daughter, Miss Wicista-Neeta (meaning wildcat), and offered her to him for a wife at the low price of two ponies.

The feast and daughter were both declined, but as McAllister was leaving the tepee he spied a lean, yellow cur. He asked Chief Two Belly how much he would take for the dog, at the same time stroking the brute down the back and each time taking a handful of money from the end of his tail.

"I'll give you a valuable dog," said McAllister, picking a coin out of the dog's eye and another out of his nose. "Two ponies for him, chief."

The Indians, with eyes as big as saucers, stood in awe and astonishment, and shook their heads. After McAllister had gone they carried the poor dog down to the river side and cut him open, but the goose had no golden egg, and they went slowly back to camp, as completely dumfounded and as solemn as human beings can possibly be.

WORK FOR THEIR FOOD.

Canaries Which Afford Lots of Fun to New York Children.

In the big window of a fashionable barber's shop uptown there are several queerly-made bird cages, in which live the yellowest of yellow canaries. Attached to each of the cages, and projecting from their sides, are flat pieces of brass, on which slide up and down tiny little wagons filled with seed. When the birds need a meal, they pull a string fastened to the fronts of these little carts, and drag them up the inclined brass plane within reach. After the canaries have had their fill they let go the cords, and the small carts slide back to their buffers, outside the cage.

When water is needed the birds are compelled to pull on a long cord, which



WORKING FOR HIS FOOD.

draws up a miniature bucket, from which they drink, and then, loosening their hold, the water pail drops down to the bottom of the cage. You see, these birds have been taught to work for their meals, and they seem to enjoy the labor immensely.

A crowd of children is always gathered in front of the barber's window, eagerly watching every movement of the birds, and exclaiming with delight, when they are about lifting their food within easy reach of their bills.—N. Y. Recorder.

Mice Are Fond of Music.

It is a fact that mice, in common with almost every other species of animals, are attracted by music. Mice have been known to regularly come out of their holes and run about a schoolroom whenever boys were singing psalms. An officer confined in the Bastille, at Paris, begged to be allowed to play on his flute, to soften his confinement by its harmonies. Shortly afterward, when playing on his instrument, he was much astonished to see a number of mice frisking out of their holes and many spiders descending from their webs and congregating around him, while he continued his music. Whenever he ceased they dispersed; whenever he played again, they reappeared.

Tennessee Boy's Strange Pet.

Master Marvin Fulk, the 12-year-old son of H. B. Fulk, of Memphis, Tenn., captured a young wolf the other day. He saw the mother wolf carrying her young ones across a piece of woodland, and, seeing the boy, she became frightened and ran away, leaving the young wolf among a lot of deadwood. The boy ran up to the spot and captured the baby wolf, and he has one of the most interesting pets in Memphis.

Sparrows and the Bicycle.

A curious thing about the sparrow has often been noticed by wheelmen. When bicycle riding first became common the birds used to hop up in the air and fly away before the wheel was within 20 feet of them, plainly being very much frightened. But now, even with the increase in the number of bicycles and the speed at which they are ridden, the birds show little or no fear. They wait until the very last moment before getting out of the way, and then they hop aside only a few inches.

Has a Shark for a Pet.

G. W. Fife, of Tacoma, Wash., has a curious pet tied up to his boat house by a chain cable. The collar is not passed around the pet's neck, as might be supposed, but is about its tail. Mr. Fife was on the bay off Tacoma in a boat when he saw a shark, and he harpooned it and towed it to the pier. The shark was not seriously injured, so he passed the collar around its tail, fastening the chain to the pier. The creature is now feeding heartily, according to the Sportsmen's Review, and seems accustomed to its stern fastening.

Wouldn't Pray for the Prince.

In every service of the Church of England the royal family is prayed for, the queen and prince of Wales being especially mentioned. It is related that a little English girl, after long cogitation, asked her mother why the prince was excluded from the prayers. "He isn't," said the mother. "Yes, he is," persisted the child. "The minister always says: 'All but Edward prince of Wales.' The mother laughed heartily, and had some trouble in explaining that the clergyman's pronunciation was to blame. He said: "Awlburt Edward prince of Wales."

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AN ENGLISH VIEW OF THE POSITION OF WHEAT.

The most quoted of foreign reviewers of markets is Beerbohm, whose London List is made up from information from all parts of the world. In its issue of August 7, this journal says:

"Continued small shipments to Europe, and a consequent further reduction in the quantity afloat, have helped to counterbalance the usually depressing effects of first supplies of new wheat, and in a general way it may be said that the trade is beginning to feel the effects of the paucity of foreign wheat in view, as manifested in the quantity afloat for the United Kingdom which is now but little over 1,500,000 quarters, against 3,100,000 quarters last year, and which means that supplies of foreign wheat must be moderate for some time to come; a fact which English farmers, with their new wheat in excellent condition, will not be slow to take note of. There are, indeed, several sufficient reasons why the immediate future of wheat should be regarded with less discouragement than was the case a month ago. First and foremost, it is becoming evident from the various reports received that the American crop is not likely to be so large as was expected, and indeed will fall rather considerably below last year's total, a poor spring wheat crop much more than counterbalancing an improved winter wheat crop. In the second place, it is tolerably clear that France will not have the abundant crop once looked for, enough being known of the threshing results in the south, southwest, center, and east of France to warrant the statement that only an ordinary average crop has been obtained in these districts. In the north and northwest, where the harvest is drawing to a close, the results are relatively better, but the best informed authorities affirm that the total crop will not exceed, and will probably not equal that of last year, so that as the stocks of old wheat have been practically exhausted, in the absence of any important supply of foreign wheat in the past season, France will in all probability import considerably more foreign wheat in 1896-97 than she has in 1895-96. The Paris Bulletin des Halles, we may add, deduces from the recent official crop report, that the total crop this year will be about 118,750,000 hectolitres, against 119,500,000 last year. So far, however, purchases of foreign wheat in France are difficult, owing to its relatively high price; Danubian wheat, for instance, sells at Dunkirk or Calais at equal to 33s. 6d. per 480 pounds duty paid, whilst at Lille new home-grown wheat is offered at 31s. to 32s. per 480 pounds.

"Another reason why trade should be less despondent is to be found in the latest official Russian crop report, of which we gave a resume in our yesterday's issue, and according to which neither the ghirka wheat nor the azima wheat crop is likely to be an average, although the former is regarded as promising better than the latter. Wheat buyers generally have become so extremely cautious that they need not be reminded of the fact that early crop estimates, especially in America and Russia, are apt to be misleading, but under the present extraordinary circumstances in regard to the statistical position, any marked deterioration in the general crop outlook might find them napping."

KAFFIR CORN COMING.

A most notable increase in the per cent. of acreage of any one crop in Kansas the present year, as shown by assessors' returns to the State Board of Agriculture, applies to Kaffir corn, and amounts to 102½ per cent., or a net gain of 188,860 acres. Greenwood county is foremost in appreciation of this great forage and grain plant and has 30,125 acres, against 12,862 acres last year; Butler county follows next with 21,436 acres, an increase of 343 per cent. Cloud county's gain is nearly 470 per cent.

It is of interest to note that the large increase is in eastern and central counties where other grain and forage crops are produced in greatest abundance, and by no means confined to territory

where such crops as corn are grown on but a small scale and where the sorghums have been supposed to be cultivated only as substitutes.

The increased acreage of the saccharine sorghums for forage and grain this year is also large, amounting to 77,391 acres, or more than 27 per cent., quite evenly distributed over the State. On the other hand, sorghum planted for sirup or sugar shows a decreased acreage amounting to more than one-third.

A decline in the acreage of millo maize amounting to more than 10 per cent. and of Jerusalem corn nearly 48 per cent. suggests that farmers and stockmen are finding that of the non-sweet sorghums Kaffir corn is best adapted to their conditions and uses.

Black Rice Corn.

EDITOR KANSAS FARMER:—This was advertised last spring as a great improvement over anything in the forage and seed crop line. It was claimed to be a cross of Jerusalem corn and millo maize. If so, I do not see the appropriateness of the name, "black rice corn." I wrote to several parties who had seed to sell and received samples, some of which I decided were not a new variety. But I bought a bushel that promised to be a true and pure seed.

It is proper to say that the present season has been the most unfavorable for sorghum crops of any we have had, though we had five weeks, including last days of June and July, that were exceptionally favorable, but before and since it could not well be worse. So this is not a favorable test, but it is a fair test in comparison with Kaffir corn and common sorghum. Being very dry at usual early planting, all of these crops failed to germinate well, but the black rice corn was poorest stand of all, not more than one-third coming up, while Kaffir planted same day and on same kind of soil made about two-thirds of a stand. The black rice corn commenced to head about three weeks earlier than the Kaffir, and this is the only point that might be considered an advantage.

My stock has proved to be anything but a pure variety. There are stalks about the usual height of Kaffir and that have a drooping or goose-neck, head like Jerusalem corn, but the larger part has a tall stalk, similar in appearance to yellow millo maize, or rather more like what has been raised here under the name of white millo maize, but probably is African millet. The heads are large but generally more open and sprangling than the Kaffir or the so-called white millo. Then there are heads with the oval, compact form of the yellow millo, and a few with a very open form, like broomcorn. It will, perhaps, out-yield Kaffir in seed, but will hardly equal yellow millo. In fodder it is not nearly equal to Kaffir or yellow millo, and the leaves are more affected by the drought and whipped by the wind.

Whatever further tests may prove, it certainly is not as yet a new and true variety, but simply a very poor mixture in appearance, and careful work must yet be done before it has a fixed and standard type. I have medium and very late plantings, which, if anything specially different is developed, I will report at close of season.

I write now that I may call out reports from others, as there are doubtless hundreds of your readers alive to the thought of getting the best from those who have tested this real or so-called new variety. I hope that some have got a purer seed and that it has been an improvement. For this section the ideal would be a little taller stalk than the Kaffir, with the yield of yellow millo, but not its hard, unwieldy, tall stalk, and if as early as Jerusalem it would add to its value in some years.

Winview, Okla. J. M. RICE.

On Saturday, August 22, President Wellhouse and Acting Secretary Barnes addressed the horticulturists of southern Kansas, at Oswego, in the court house. There was a fine audience, including the Labette County, the Altamont and the Edna Horticultural societies. There was a large display of fruits, vegetables, flowers

and plants. Two sessions, a morning and an afternoon, were held, and the talks and discussions were very interesting and instructive, and every one enjoyed them. President Wellhouse and Acting Secretary Barnes are highly gratified at their reception by the horticulturists of Labette county. Fruit in the county is not over one-third crop and is maturing prematurely.

Contagious Sore Eyes of Cattle.

EDITOR KANSAS FARMER:—At the request of Governor Morrill, I visited Maple Hill to investigate an outbreak of contagious sore eyes among cattle, which had been reported to the KANSAS FARMER.

I found some twenty-three head, out of a herd of forty-five fine Short-horns, to be affected with a contagious inflammation of the cornea (front of eyeball). I do not know of any common name for this disease. The technical name is *Keratitis contagiosa*.

This disease has been known to exist in this State for a number of years, and is said to have been introduced into the State by range cattle from the Southwest.

This disease does not spread rapidly from herd to herd, although it goes through a bunch of cattle quite rapidly when they once become infected, unless means are taken to check its course. While the disease exists through the winter it is in a mild form and does not cause much trouble until the dry and dusty weather of summer.

The first symptoms noticed are a profuse discharge of tears, which run down over the face, swelling of the eyelids and partial closure of the eyes to keep out the light, as light seems to increase the severity of the pain. The front of the eye becomes clouded, slightly at first but increasing with the severity of the disease and may, in some cases, become a reddish purple. The white of the eye and the mucous membranes are also congested. In bad cases an ulcer forms on the front of the eyeball, at first a whitish speck, which increases in size, until it may protrude some distance from the front of the eyeball. In some cases the ulcer eats into the cornea until the eye bursts. Most all of the cases where the eye bursts are left permanently blind. Of about one hundred cases of this disease that I have seen, two were totally and permanently blind in both eyes and five or six blind in one eye. The disease seldom attacks both eyes at the same time, but seems to spread from one eye to the other.

The treatment is not satisfactory, as far as medicines are concerned. The eye is so sensitive and animals resist the applications so vigorously that attempts to apply medicines usually do more harm than good. Bathing the eyes with salt water as hot as can be comfortably borne, and keeping the animal in a darkened stall, will probably give as much relief as anything.

The most satisfactory method of dealing with the disease is to isolate an animal as soon as the first symptoms appear, and in this way the progress of the disease through a herd may be stopped.

While this disease is important, I have never known an animal to die from its effects. The greatest loss occurs from the slight falling off in flesh or milk, and the decreased value of those that are left blind. Probably one-half of those affected have the disease in a mild form, shown only by a slight discharge of tears or cloudiness in the eye.

DR. N. S. MAYO,
Veterinary Department, State Agricultural College, Manhattan.

The S. Brainard's Sons Co., music publishers, of Chicago, have sent us a sample of their 10-cent campaign song books. They make all kinds, their list comprising "True Blue Republican," "Red Hot Democrat," "Populist and Silver Songs" and "Silver Songs."

Prof. Henry E. Glazier, Horticulturist of the Oklahoma Experiment Station, is authority for this statement: "The [fruit] tree that is properly headed, with the trunk shaded, and kept in a thrifty, growing condition, will be exempt from the attacks of the borer."

The Cities of Kansas.

Kansas has ninety-six cities and towns containing 1,000 inhabitants or upwards, a gain of one to the list during the past year. The State Board of Agriculture has compiled the assessors' and County Clerks' returns and finds that fifty-four municipalities belonging in this list have made an aggregate gain of 13,630, Topeka leading with 1,461, while thirty-six others lost 8,391. Augusta, Clyde, Caney and Caldwell have dropped out of the 1,000 list within the year, and Empire City, with a gain of 691, La Cygne 151, Pleasanton 70, Alma 81, Goodland 28 and Oskaloosa 136 are new in it. Among the cities that have shifted in their rank are Wichita, which now drops below Leavenworth; Hutchinson falls below Emporia; Argentine climbs over both Arkansas City and Salina, and Rosedale mounts from fifty-first to forty-eighth place; Junction City climbs over Newton and Winfield; Galena goes from thirty-fourth to nineteenth place, Oswego from forty-fifth to thirty-ninth, and Coffeyville from twenty-fifth to twentieth place. Wellington falls from twenty-first to twenty-sixth place; Osage City from nineteenth to twenty-fourth; Horton from twenty-seventh to thirtieth; Holton from twenty-ninth to thirty-second; Concordia from thirty-first to thirty-sixth; Larned from sixtieth to seventy-second; Marion from forty-ninth to fifty-seventh; Minneapolis from sixty-third to seventieth.

The following table gives the cities and towns in the order of their rank, and the population of each:

Rank.	Name.	Population.
1	Kansas City.....	40,703
2	Topeka.....	31,612
3	Leavenworth.....	21,120
4	Wichita.....	19,892
5	Atchison.....	15,501
6	Fort Scott.....	11,673
7	Lawrence.....	10,684
8	Pittsburg.....	10,172
9	Emporia.....	8,676
10	Hutchinson.....	8,172
11	Parsons.....	8,115
12	Ottawa.....	7,532
13	Argentine.....	5,960
14	Arkansas City.....	5,623
15	Salina.....	5,406
16	Junction City.....	5,219
17	Newton.....	5,193
18	Winfield.....	4,610
19	Galena.....	4,314
20	Coffeyville.....	4,020
21	Independence.....	3,677
22	Chanute.....	3,583
23	El Dorado.....	3,528
24	Osage City.....	3,451
25	Abilene.....	3,377
26	Wellington.....	3,375
27	Hiawatha.....	3,313
28	Weir.....	3,279
29	Olathe.....	3,225
30	Horton.....	3,202
31	Paola.....	3,147
32	Holton.....	3,040
33	Manhattan.....	2,916
34	Girard.....	2,782
35	Osawatimie.....	2,755
36	Concordia.....	2,741
37	Clay Center.....	2,600
38	McPherson.....	2,586
39	Oswego.....	2,492
40	Burlington.....	2,474
41	Chetopa.....	2,424
42	Council Grove.....	2,415
43	Columbus.....	2,400
44	Garnett.....	2,383
45	Marysville.....	2,242
46	Great Bend.....	2,158
47	Beloit.....	2,108
48	Rosedale.....	2,095
49	Cherryvale.....	2,069
50	Eureka.....	2,060
51	Neodesha.....	2,019
52	Sterling.....	1,932
53	Seneca.....	1,927
54	Dodge City.....	1,871
55	Wamego.....	1,808
56	Iola.....	1,800
57	Marion.....	1,759
58	Kingman.....	1,681
59	Fredonia.....	1,684
60	Humboldt.....	1,680
61	Peabody.....	1,656
62	Baxter Springs.....	1,647
63	Garden City.....	1,620
64	Lyons.....	1,585
65	Yates Center.....	1,556
66	Burlingame.....	1,536
67	Florence.....	1,534
68	Herlington.....	1,529
69	Empire City.....	1,472
70	Minneapolis.....	1,446
71	Sabetha.....	1,374
72	Larned.....	1,327
73	Lindsborg.....	1,320
74	Belleville.....	1,291
75	St. Marys.....	1,268
76	Ellsworth.....	1,261
77	Scranton.....	1,240
78	Erie.....	1,212
79	Pratt.....	1,212
80	Washington.....	1,208
81	Cherokee.....	1,206
82	Blue Rapids.....	1,189
83	Baldwin.....	1,178
84	Valley Falls.....	1,155
85	Harper.....	1,147
86	Sedan.....	1,119
87	La Cygne.....	1,094
88	Anthony.....	1,074
89	Pleasanton.....	1,060
90	Frankfort.....	1,051
91	Howard.....	1,050
92	Osage Mission.....	1,046
93	Alma.....	1,045
94	Nickerson.....	1,034
95	Goodland.....	1,016
96	Oskaloosa.....	1,005

Horticulture.

Thayer's Berry Bulletin for September.

Best plants of the blackberry and red raspberry are obtained by cutting strong, vigorous roots in pieces four or five inches long and planting about eight inches apart in drills. Good plants are thus made in one season. Sucker plants coming up around the hill or between the rows, are also used and make good plants if carefully dug and a portion of the cross root retained. New plants of the black raspberry are obtained by covering the tips with two or three inches of moist dirt, and leaving until spring.

Cuttings of the currant, gooseberry and grape may be made as soon as the leaves drop. New growth should be selected and cut in pieces about eight inches long. The cuttings may be set at once, eight inches apart in the rows, leaving one bud above ground, or they may be tied in bundles, buried in sand and kept from frost until ready for setting in the spring.

Good plants are also made by layering, bending the new growth to the ground and covering to the tip with moist dirt. This is the surest and best method, especially with gooseberries, which are hard to propagate from cuttings. All cuttings should be placed in rich, well-prepared soil and thoroughly cultivated the following season. In severe climates protect in winter with a mulch of coarse manure or straw.

There are some advantages in propagating your own plants. You can continue those varieties that do best in your particular locality and soil. You can transplant them as soon as your ground is properly prepared. You can use more care in transplanting and fill in the missing hills at leisure.

The care of young and tender plants, as with young and helpless animals, creates a personal interest and love for them, which insures better protection in the future. If, however, you have not this natural personal interest within you—no affection for the things cared for—then trust the work to other hands; you will not succeed. It is no doubt cheaper to buy plants from reliable growers, and if the work is to be simply mechanical and for dollars and cents only, then do not try to propagate small fruit plants.

The fruit garden should be a source of pleasure, profit, inspiration, devotion. It should be one of the strong ties that bind us to home ever after. When such a garden is located on the farm, a general improvement in all agricultural surroundings quickly follows.

Fruit in Missouri.

The Missouri State Horticultural Society's report for August, 1896, says:

"The following report of the fruit crop of the State is made from nearly all of the counties and gives a very correct idea of our fruits. Some of the counties that make the highest report have not very many orchards in bearing, hence there will not be many for sale.

"The apple crop of the State will average about one-third.

"The varieties of apples having the best crop in the northern part of the State are: Ben Davis, Willow Twig, Jonathan, Grimes, Missouri Pippin and Janet. Pears—Bartlett, Seckel, Keiffer and Duchess. Peaches—Amsden, Hales, Elberta, Heath, Old Mixon and Champion. Grapes—Concord, Worden, Niagara and Moore's Early.

"In the central part of the State: Apples—Gano, Ben Davis, Missouri Pippin, Janet, Jonathan, Winesap, and Huntsman in a few localities. Pears—Keiffer, Buerre Anjou, Bartlett, Duchess and Seckel. Peaches—Mt. Rose, Elberta, Old Mixon, Heath, Crawford, Foster, and seedlings. Grapes—Moore's Early, Worden, Concord, Pocklington, Niagara, Brighton, Ives and Nortons.

"In the southern part of the State: Apples—Ingram, Ben Davis, Gano, Winesap, Mammoth Black Twig, Minkler, Jonathan, Grimes, Missouri Pippin, Dominie and York. Pears—Duchess, Keiffer, Bartlett, Buerre

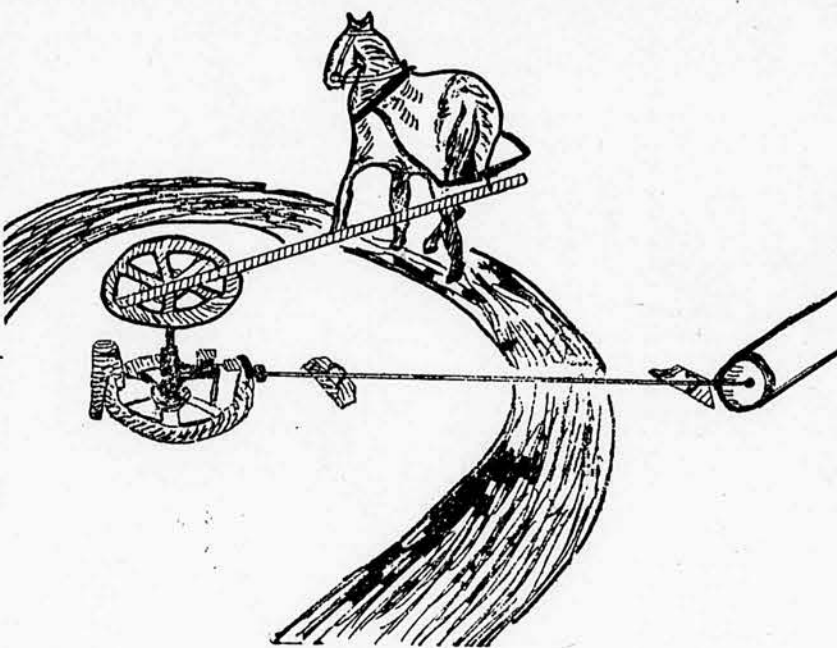
Anjou and Mt. Vernon. Peaches—Mt. Rose, Elberta, Family Favorite, Old Mixon, Picketts, Salway, Wilkins, Globe, Champion and Bonanza. Grapes—Concord, Worden, Goethe, Moore's Early and Nortons.

"The extraordinary apple crop of last year led us to believe, all the year, that we could not expect a large crop this year, hence we were not disappointed. The old standard varieties, you will see, still hold their places, while the average of the State is rather low, yet there are many orchards very full and the apples are fine. There has been a great deal of pear blight and much twig blight on the apple. The dry weather is now affecting both the apple and peach crop in many parts of the State, but not seriously."

A Vegetable Freak.

A cabbage vine is spoken of as having developed in Iowa. *Rural Life* says of it:

"S. R. Buffum, a market gardener living near Lake Park, Iowa, has a most remarkable vegetable. In his cabbage patch last year occurred a 'sport,' by which a plant, instead of making a head in true cabbage style, assumed the form of a vine. At the axis of the leaves cabbage heads of about two pounds weight were formed. There were thirteen of these heads. The plant went to seed last year, something unusual for cabbage, as they require to be set out the second year for seed. The seeds



POWER FROM AN OLD MOWER.

were formed in the usual manner, all the earliest cabbages on the vine throwing out a seed stalk. Mr. Buffum saved the seed, and on planting it this year it grew well and many of the plants have assumed the vine-like habit of the parent, although the majority have returned to the natural form of cabbage. It is believed, however, that should seed be saved from the vine cabbage every year it will only be a year or two until the vine variety of brassica will be established. Mr. Buffum has been experimenting with the plants this year, and he finds that if the heads are picked off as soon as they attain a weight of one pound the vine, like cucumbers, will continue to form a large number of new heads. The variety of cabbage from which the 'sport' occurred was Salzer's Lightning. The vine cabbage is the most grotesque looking plant imaginable. The leaves grow two together and the cabbages lie among them like pumpkins. The vines are about ten feet in length. The new variety is bound to prove a great addition to garden vegetables, owing to its prolific bearing qualities, and also because it matures cabbage within two months of planting."

MERIT WINS and that is why Hood's Sarsaparilla holds the abiding confidence of the public. Hood's Sarsaparilla is known by the cures it has made. It is the one true blood purifier.

Hood's PILLS cure liver ills, constipation, jaundice, sick headache, biliousness. 25c.

Kalamazoo, Mich., is famous for celery—also as the home of Thos. Slater, whose advertisement appears on page 15.

Results of Sulphuring Seed Potatoes. C. J. Norton, being a member of the Agricultural Students' Union, makes the following report:

To L. M. Bloomfield, Director of Experiments of the Agricultural Students' Union, of Ohio:

DEAR SIR:—I have the honor of herein submitting my report of the results derived from using flowers of sulphur upon seed potatoes.

My attention was first called to using sulphur on seed potatoes by the New Jersey station's bulletin report of their experiments in 1895. They made the statement that sulphur greatly reduced the scab and also added to the keeping qualities of the potatoes.

I used sulphur on the fresh-cut seed at the rate of from two-thirds to one and one-half pounds per bushel; planted the potatoes on April 2 and dug with a machine digger on July 9-11. The mean daily temperature at the time of digging was 75.6°. The potatoes were allowed to cure about an hour and then were picked up into half-bushel bale wire baskets and turned into bushel all-slatted crates. These crates were in turn put in the wagon and transferred to the barn, where the potatoes were put in a bin made on the same principle as an all-slatted crate, a car-load being piled in a bin eight feet wide by sixteen feet long. The heat was above the normal, and the potatoes were not all moved till August 20. They kept perfectly, while my neighbors' potatoes that had no sulphur all rotted together when

January. In March, not so far—about an eighth of an inch; pruning done in April healed slowly; in May, very well, and in June and October best of all. It healed pretty fairly in July, and some very well in August, a little in September, and the October healing was very good, but not quite so good as the June pruning. The December limbs that were cut died absolutely. The January pruning was the next worse, it being killed around the cut.

Mr. Rice:—I pruned large shade trees in December and had bad results. They were Carolina poplar, which is one of the hardest trees in the world.

How He Served the Chinch Bugs.

The following from Isaac Young, of Winfield, Cowley county, to Secretary Coburn, of the State Board of Agriculture, tells of a plan to eradicate the chinch bugs:

"I herewith send you the way one of my neighbors took to get rid of chinch bugs. His neighbor east of him had a field of wheat, and when he harvested the wheat the bugs went through the hedge onto the corn. The first four rows were black with them, and lots of them on the next four rows. As Carter is an energetic farmer and is blessed with a large share of perseverance, he commenced to kill the bugs by crushing them. He commenced on the first two rows, one on each side of him—commenced at the ground on each stalk, grasped it tight, and drew his hand up on the stalk, crushing the bugs. It took him about four hours to go over the eight rows, one hundred rods long, but he utterly destroyed the bugs. It was a disagreeable task but the most effectual one tried. He thinks a pair of thin leather gloves will be the best protection for the hands. Now, if every farmer would do the same way, and in the winter break all their corn stalks, rake them up and burn them, and rake up all the trash along the hedges and fences, where the bugs winter, and all sloughs, as they will stay in the grass, and burn them, we would soon get rid of the pests."

Power From an Old Mower.

I have made use of an old mower frame on my farm in constructing a power to operate the churn, separator and other machines, and find it quite a useful contrivance. It requires but little expense to rig up the frame into a serviceable power. The illustration shows the appliance set up all ready for business. I first took off the cutter-bar, seat and pole, and removed the ratchet from the right wheel—if it is a left-hand machine, remove the left one. I set the frame up on the loose wheel, in a convenient place to operate, and fastened firmly to the ground by means of forked stakes, driven deep; also, drove down two 4x4-inch posts, one on either side of the gear frame, and bolted firmly. If preferred, one might twist a stout wire around the tops, and this will hold the frame securely. Next I clamped the pole on to the top wheel by means of clevis bolts. The drive-rod, or shaft, will have to be extended, and a gas pipe one and one-half inches in diameter, and long enough to clear the sweep, will answer very well.

Arranging the pulley-wheel on one end and attaching the gear at the other, is the only operation that may require outside help; but every rural community has a blacksmith that is hankering for just such a job, for a small consideration. The machine should be set up on level ground, and the line shaft shored up with pillow blocks so as to obviate any vibration on the pulley. The speed of the movement can be regulated by the size of the pulley. Better start with a pulley twenty-four inches in diameter, and if too fast, cut down smaller, or else put on a larger pulley on the churn. Any one familiar with applying belts to pulleys will soon get just the speed desired. This power is no better than a specially-built machine for that purpose—possibly not so good—but it has the recommendation of being economical, strong and easily operated.—C. W. Scarff, in *Rural New Yorker*.

Every man should read the advertisement of Thos. Slater on page 15 of this paper.

treated this same way. In fact, this is the first time they were ever known to keep here in our warm climate. The mean temperature for July was 78.03° and reached 96° twice, 95° twice, 94° once, 92° once, 91° four times and 90° three times. In August the heat was still greater, touching 102° twice, 101° once, 99° five times, 97° twice, 96° once, 95° once, 93° once, 91° once and 90° four times, never falling below 90°, while it went below 70° but seven times, and then only to 69°. An occasional tuber rotted, but they did not appear to shrink any. It is a new thing to attempt to crib up potatoes in our climate in the summer and without any cellars.

It looks as if sulphur certainly preserved potatoes from rot and from severe shrinkage, while it certainly adds greatly to the yield.

Truly yours,

CLARENCE J. NORTON.

Morantown, Kas.

The Time to Prune Trees.

At a meeting of the Michigan Horticultural Society, the following question was asked and answered:

"Will pear, plum, apple or cherry be damaged by winter pruning where the limbs are small?"

Professor Slayton:—Yes, sir. Experiments show that any pruning done between November and the first of April, on any of the seed fruit trees, is an injury. January and December are the worst months. You can see samples in the Farmers' club room at Grand Rapids, where the bark is killed a quarter of an inch or more in pruning done in

In the Dairy.

Conducted by A. E. JONES, of Oakland Dairy Farm
Address all communications Topeka, Kas.

THE BABCOCK TEST.

The Pennsylvania State College Agricultural Experiment Station Bulletin No. 33 contains directions for using the Babcock test, by Harry Hayward and M. E. McDonnell, as follows:

"The importance of the Babcock milk test to the practical dairyman is now so generally acknowledged that accurate directions for its successful use cannot fail to be interesting. No dairy invention of recent years has done more to improve the output of individual dairies, where its revelations have been heeded, and no machine has done more to prove that the quality of a cow's milk is inherent in the animal. Our authors well say that while the Babcock machine is simplicity itself, it nevertheless requires delicate manipulation to get correct results from its use, and it should only be relied upon when in the hands of a careful and correct man. The machine itself should be carefully made, so that the high speed that is essential to its working may be maintained with smoothness. A tester should be capable of revolving from 700 to 1,200 revolutions per minute, according to the diameter of the wheel which carries the bottles, so that a small wheel must make more revolutions than a large one. It should not be less than twelve inches in diameter, and need not exceed twenty inches. The bottles should hang perpendicular when the wheel is at rest. Soft, rain or distilled water should be used for boiling water to fill the bottles after the first whirling. In taking the samples, great care must be used to get it as perfectly representative of the whole lot of milk as possible. Milk fresh from the cow, well mixed by pouring from one vessel to another before any cream has risen, and samples taken at once are best. But the mixing should not be carried so far as to churn the cream any. The measuring pipette is filled to the proper point by placing the end in the mouth and sucking till the milk rises to the proper point on the stem, and then quickly placing the finger over the end of the tube to hold it in place till transferred to the bottle. A little practice will enable the operator to stop the milk at the exact point. The point of the pipette is inserted in the neck of the bottle, slightly inclined so as to allow the milk to flow freely, and is held till well drained. The pipette should be perfectly dry when used, and if not, should be rinsed with some of the same milk that is to be tested. After the milk is in the bottles it is not important that the test should be made at once, as it will make no difference if it stands for some time; but it is best to proceed at once. The same volume of commercial sulphuric acid as of milk is about the right amount to add, or 17.5 cubic centimetres for the ordinary test. Too little acid results in an imperfect separation of the fat; too much will attack the fat itself. As soon as the acid is added to the milk the bottles are to be placed in the machine and whirled at once. A wheel twelve inches in diameter should be turned at a speed of 1,200 revolutions per minute for not less than five minutes. The cover should always be placed over before whirling, as this prevents cooling and protects the operator in case any of the bottles break. The heat caused by the chemical action of the acid is sufficient, if the test is made at once; but if the bottles cool they should be placed in water heated to 200 degrees to warm them up before whirling. After the bottles have been whirled five minutes, they should be filled up to the neck with hot distilled water and whirled for one minute. The fat when measured should be warm enough to flow easily, so that the line between the acid liquid and the fat will be well and accurately defined when held horizontally. About 150 degrees is right. To measure the fat, hold the bottle with the scale on a level with the eye, and observe the divisions which mark the highest and lowest limits of fat. The difference between gives the percentage of fat direct.

Read accurately from the point where the fat meets the glass sides and not from the center. Points to be observed are: (1) A thorough mixing of the milk. (2) The acid should be of the specific gravity of 1.82 and both milk and acid at 60° to 70° Fahrenheit when mixed. (3) When measuring the acid into the bottle, hold it at an angle that will cause the acid to follow the inside wall to the bottom, and not drop through the milk in the center of the bottle. If properly done there will be a distinct layer of milk and acid and no black line between them. (4) Thoroughly mix the milk and acid as soon as in the bottle. (5) Add the hot water in two portions and whirl after each addition of water. (6) When the bottles are taken from the machine, set them in water heated to 140° to 160° to keep the fat liquid. (7) Too low results will be had if the wheel is turned too slow. (8) Keep the acid bottle closely corked when not using, as the acid absorbs the water from the air and becomes weakened. When testing skim-milk or buttermilk having a small percentage of fat, read it immediately on taking the bottle from the machine, otherwise it will be hard to read so small a percentage. Many bottles and pipettes are inaccurately graduated. It is important, therefore, to buy from reliable firms."

How Filled Cheese is Made.

A late circular from the Department of Agriculture gives the following on filled cheese:

"It may be well to state in passing that filled cheese differs from the genuine, old-fashioned article in but one essential particular, so far as its composition is concerned. Instead of the natural fat of milk, or cream, which is extracted for butter-making, there is substituted what is known as neutral lard, made from the leaf fat of the hog. This article, claimed to be exceptionally pure and good of its kind, is used at the rate of two or three pounds to every one hundred pounds of skim-milk. The cheese resulting carries about 30 per cent. of (lard) fat, which is rather less than the average of (butter) fat in good whole-milk cheese. The casein and other components of the two are practically the same in kind and proportions. From this statement of composition one can judge for himself whether this filled or lard cheese is a legitimate article of food, whether it is wholesome, and whether he desires to use it in the diet of himself and family. It is made of comparatively cheap materials, costing from one-half to two-thirds as much as good, full cream, factory cheese, and its market price, wholesale or retail, should correspond. At its best, this is cheap, inferior cheese; it is almost devoid of flavor, oily or greasy when warm, and never attains the dry, crumbly consistency of a well-cured cheese. It is sold when only a month or two from the press in imitation of mild, immature cheese. It is claimed that it does not keep well, especially if subjected to temperature above 60 degrees. No one acquainted with first-class, full-cream cheese would ever accept the filled product as a substitute, but it may be successfully passed as a genuine article of second grade. There is plenty of good cheese still made in the United States, and it can be secured if buyers will but make a little effort to find it. The States of New York and Wisconsin together produce two-thirds of all the cheese made in the country, and the reputation of the factories of these States for high quality full-cream cheese has been long established. The product of these factories of the standard or Cheddar form of large cheese stands second to none in the markets of Great Britain as well as in America. The two States named, as well as others, absolutely prohibit the manufacture and sale of filled cheese within their borders and the marking of skim cheese to imitate full-cream goods. These laws are well enforced."

Not one complaint has ever been made by those using Ayer's Sarsaparilla according to directions. Furthermore, we have yet to learn of a case in which it has failed to afford benefit. So say hundreds of druggists all over the country. Has cured others, will cure you.

IN THE ORIENT.

A Scientist Compares the Customs of the East and West.

A SAD DEATH-BED SCENE.

A scientist of world-wide fame was talking with a party of physicians in a New York cafe the other day.

"The longer I live," he said, "the more I realize that this world is all at sixes and sevens. Even in matters of science and philanthropy we take hold of every problem at the wrong end. We are forever prating about the superiority of our Western civilization



over that of the orient. We proudly point out hospitals and asylums and ask what the East has to show in lieu of them.

"I have spent a fourth of my life in China and other Eastern countries. I will tell you one thing that China has to show that alone acts as an offset to all our vaunted hospitals and asylums. It is a common-sense starting point upon which to base the practice of medicine. I cannot say much for the Chinese knowledge of drugs and their virtues, but I cannot admire too much the common-sense basis upon which their practice of medicine is based.

"A Chinaman pays his physician a stated fee just so long as he remains well. The minute he gets sick he stops the fee and the physician is deprived of his income until the patient recovers his health. That's common-sense. It's starting out at the right end of the problem. It is a procedure based upon the true science of health.

"With us the opposite is true. With us the tail wags the dog. We pay a physician to restore our most precious endowment after we have lost it, not to guard us against its loss. In other words, we invariably lock the stable doors after the horses are gone.

"The Chinese procedure is deep-rooted in common-sense; our's is imbecile. We inculcate the idea that health is only worth looking after, when it is gone. As a consequence we build great hospitals for incurables, and costly homes for orphans. Then we brag about them, and the heathen snicker in their sleeves. When you get down to facts, these institutions of which we are so proud, are but monuments to our pigheaded imbecility. We are infinitely in advance of all eastern nations in medical knowledge, but apparently just as far behind them in cold common-sense.

"I have just come from a house of mourning. It was the home of a dear friend. I found him and his motherless child mourning beside the deserted temple that was once a devoted wife and loving mother. The departed one had been a beautiful and sweet woman, an affectionate wife and a loving mother. She had died in the springtime of life.

"Why? Because she did not know the first principles of her own nature. Because she was unwittingly guilty of an ignorance of her own womanly self that would amaze the much-abused heathen. Because it is instilled into Western people that health is something that needs no looking after until it is gone—gone utterly and irretrievably. Because, neither in childhood, youth or maturity, had she learned that a woman's very existence, yes, and the perpetuation of the race itself, are dependent upon the health and vigor of the feminine organs that make motherhood possible."

No truer words than these were ever uttered. There is crape on many a door to-day, mourning in many a home, and orphans innumerable, that would not be if women were but taught in

time the supreme importance of keeping the distinctly feminine organism in a healthy and vigorous condition. Ignorance or neglect upon this point is responsible for almost all the suffering that thousands of tortured women silently endure.

The woman who suffers from weakness or disease of her womanly self is unfitted for the commonest duties of life. If she neglects these conditions she will become sickly, nervous, fretful and incapable. She will silently suffer untold agony. She becomes unfitted for wifehood, and motherhood will be to her a menace of death.

All suffering and unhappiness is easily avoided if a woman will take proper care of herself and have resort to the right remedy. Dr. Pierce's Favorite Prescription is an unfailing remedy for all weakness and disease of the organs distinctly feminine. It acts directly on these organs only, making them strong, vigorous and healthy. It allays inflammation, heals ulceration, soothes pain and stops all debilitating drains. It prepares for motherhood. Taken during the period of gestation it banishes the usual discomforts and makes baby's advent easy and almost painless. It insures a healthy child. It endows the young mother with added recuperative powers and shortens the period of weakness and debility that follows parturition. It insures an abundant supply of nourishment for the newcomer. Thousands of women have testified to the wonderful merits of the "Favorite Prescription." Those who wish to know more of it should write to Dr. R. V. Pierce, chief consulting physician to the Invalids' Hotel and Surgical Institute, at Buffalo, N. Y. All good druggists sell it, and an honest druggist will not offer some inferior medicine as "just as good" for the sake of a little extra profit.

There is always one thing that is better than all others of its class. There are quite a number of medical books intended for the instruction of wives and mothers, but there is only one that is "best." That is Dr. Pierce's Common Sense Medical Adviser. It is the only home medical work that is written in plain, every-day language, and will enable a woman to save the family many dollars in doctor's bills. It contains 1,008 pages and 300 illustrations. It contains several chapters devoted to the reproductive physiology of women and the ailments peculiar to them. Over 680,000 copies were sold at the original price of \$1.50 each. A new edition is just out and will be given away absolutely FREE. If you want a copy in heavy manilla cover, send twenty-one one-cent stamps, to cover cost of mailing only, to the World's Dispensary Medical Association, Buffalo, N. Y. If you prefer a fine French cloth binding, beautifully stamped, send 10 cents extra, 31 cents in all.

A Look Through South Missouri for Four Cents.

The Kansas City, Fort Scott & Memphis Railroad Company has just issued a magnificent book of sixty or more photo-engraved views of varied scenery in south Missouri. From these views an accurate knowledge can be obtained as to the productions and general topography of that highly-favored section that is now attracting the attention of home-seekers and investors the country over.

The title of the book is "Snap Shots in South Missouri." It will be mailed upon receipt of postage, 4 cents. Address J. E. Lockwood, Kansas City, Mo.

KANSAS HOME NURSERY now offers choice berries and orchard fruits of all kinds in their season. Fresh shipments daily by express. Prices to applicants. A. H. Griesa, Box J, Lawrence, Kas.

Garnahan's Tree Wash and Insect Destroyer. Destroys the bore worm and apple root louse, protects the plum from the sting of the curculio and the fruit trees from rabbits. It fertilizes all fruit trees and vines, greatly increasing the quality and quantity of the fruit. Agents wanted everywhere to sell the manufactured article. Address all orders to John Wiswell, Sole Mfr., Columbus, Kas., and Cleveland, Ohio.

CIDER MACHINERY
Hydraulic, Knuckle Joint and Screw Presses, Graters, Elevators, Pumps, etc. Send for Catalogue.
BOOMER & BOSCHERT PRESS CO.
809 W. Water St., Syracuse, N. Y.

Gossip About Stock.

K. N. Friesen, of Alta, Kas., reports sales of two fine Poland-China males to Mr. Eymann and Mr. Heyward, of Moundridge, Kas., during the past ten days.

During the Springfield (Mo.) fair there will be a combination sale of recorded Berkshire swine, to be held on September 4, 1896. J. S. Magers, of Arcadia, Kas., will offer a choice draft from his Bourbon County herd of Berkshires in connection with Duncan Bros., of Arkansas, and Bell & Noblet, of Missouri. The sale will include fifty head of Berkshire boars and sows, six months and over. Mr. Magers will have twenty animals in the sale, all strictly first-class selections, the choicest pigs he has ever offered. Col. Sawyer, of Manhattan, will auctioneer the sale. For catalogues address J. S. Magers, Arcadia, Kas.

J. R. Killough & Sons, breeders of registered Poland-Chinas, at Richland, Franklin county, Kansas, send the FARMER the latest news of their herd, as follows: "Our herd is in the best of condition. We never raised a better lot of pigs than we now have on hand. They are the get of Upright Wilkes 13246 and J. H. Sanders Jr. 13729, and out of extra good sows, all selected for their good individual qualities, as well as their breeding, and tracing back through all the leading families, always selecting the best for breeding purposes. We now have about sixty pigs of spring farrow that are extra good; also a few fall boars—good, strong fellows, ready for hard service. These boars will be priced very low. Any one wanting something of this kind should not delay in looking after them, as they are bargains.

WREN'S NEXT SALE OF POLAND-CHINAS.—The readers of the KANSAS FARMER, especially those interested in high-class Poland-China swine, have doubtless become more or less familiar with Mr. W. H. Wren, of Marion, Kas., through his semi-annual sale announcements of registered Poland-Chinas. Being situated as he is, in the central part of the State, and having the best-bred and individual lot of yearling sows and spring of 1896 youngsters ever on the farm, he concluded to hold his coming sale more centrally in the west Mississippi corn and hog belt, and selected Saint Joseph, Mo., where he will, on Thursday, September 17, 1896, offer a draft of sixty from his herd of 140 head, all ages. The offerings will consist of thirty young sows and fall gilts and about thirty youngsters of both sexes belonging to the spring of 1896 farrow. These gilts were sired by Wren's Medium 12887 S., Corwin Whiteface 9924 S. and Black Corwin 16136 S. Wren's Medium was by Happy Medium 8397 S. and he by King Tecumseh 3421 S., dam Best of 1890 22075 S. by Young U. S. 4253 S. and out of Corwin Queen 22076 S. The sire of Wren's Medium, Happy Medium 8397 S., begat Woodburn Medium 12066 S., the \$1,000 hog bred by Miller, of South Dakota. The get of Wren's Medium are of the broad, deep, mellow kind and are sure ready sellers. And why should they not be, after considering the breeding and individuality of the sire? Corwin Whiteface, the second herd boar, was by Corwin U. S. 7116 S., he by Corwin King 4253 S. His dam was Lady Whiteface 17785 S. by the noted Royalty 1666 S. and out of Lou—. As an individual, some visitors at the farm give him first place, but when his get is placed for comparative selection with those of Wren's Medium, no choice is visible beyond personal likes or dislikes. The younger harem master, Black Corwin 16136 S., is by Corwin Whiteface and out of Highland Beauty No. 3 31889 S. by Black Duke 3558 S. and out of Beauty 19830 S. The dams of the offerings are mainly Corwin and Tecumseh. Now, every well-up Poland breeder would expect something extra good from such breeding, and the visitor sure enough finds his expectations verified at the farm—especially is this true of the thirty or more matured offerings. They are an elegant all-round lot, with good heads and ear, extra in back and ham, heavy bone and on well-up toe, coats good and finely finished. Over twenty of them have been bred and all will be for late September, October and early November farrow, to One Price Medium 14350 S., he by One Price 4207 S. and he by Black U. S. 4209 S., dam Alva Medium 31552 S., she by Happy Medium 8398 S. and out of Klever's Lady 15075 S. and she by Success 277 S. This is certainly royal breeding and when crossed on the young sows something more than ordinary is to be expected. One that has also been used in the young harem and that will be offered at the sale is Hadley M. Washington 15544 S., bred at Sunny Slope farm, sired by the \$555 boar, Hadley Jr. 13314 S., he by Hadley 9493 S. His dam, Martha Washington 8th 29803 S., was by Longfellow 12173 S., the World's Fair winner. Her dam was Martha Washington 24103 S., an excellent brood sow. This young fellow has great scale, smoothness and individuality and shows his richly-bred ancestry behind him. Then comes Hadley Corwin Faultless 15552 S., another recruit from Sunny Slope farm, sired by Hadley Jr. 13314 S. and out of Faultless Queen Cor-

win 29798 S., the \$750 sow. These three young fellows have about equal service to their credit in the young brood sow offerings. Now, Mr. Reader, all things considered, the St. Joe sale ought to be a successful one, if breeding counts for what it is worth and the prospective buyer appreciates good things and wants to improve his own by a judicious selection of better blood and stronger individuality. The youngster division are a well grown out lot and ought to please the most fashionable breeders. Mr. Wren will take pleasure in mailing all who may desire a free copy of his sale catalogue. Keep in mind the date—Thursday, September 17, 1896, and govern yourselves accordingly.

VANSELL'S NEXT SALE OF POLAND-CHINAS.—The writer takes pleasure in relating something concerning a day's visit with Mr. M. C. Vansell, whose farm is situated one and a half miles from Muscotah, Atchison county, Kansas, where the visitor finds a herd of 175 head of pedigree Poland-China swine that are fashionably bred and grown out just about right. The reader will find that Mr. Vansell has announced elsewhere in this issue of the FARMER that he will offer about sixty head of late fall and spring pigs of both sexes, forty-five of which were sired by the \$250 boar, Admiral Chip 7919 S., he by Stem's Chip 4820 S. His dam was Admiral Maid 13513 S., she by Admiral King 4662 S. and out of Maid of Honor 12995 S. Admiral Chip is one of the best breeding boars in the West, and when he was out for showing honors in his yearling and two-year form was a first-place winner. His great worth as a sire is best exemplified in his broad-backed, deep-hammed, big-boned sons and daughters. They are of the mellow sort, and the writer takes pleasure in stating that no better and but few equals have been looked over in Missouri or Kansas this year. Some fifteen of the offerings were sired by the fashionably-bred yearling, Kankiska 15708 S., he by Chief Tecumseh 2d 9115 S. and he by Chief Tecumseh 7385 S. His dam was Lady I. X. L. 34996 S. by Chief I. X. L. 13207 S. and out of Best of Wilkes 20453 S. His general character and conformation at once convinces the visitor of his great breeding, combining, as he does, the best Wilkes and Tecumseh blood. The female division of the herd is made up of a grand, strong array of individuality and breeding. Among others that will have produce in of the sale is Champion 36997 S., a daughter J. H. Sanders 11205 S. and out of Shellenborger's Pride 30453, that will have two litters go in the ring, both by Admiral Chip. Queen Sanders will send out a litter by Admiral, also. Another sister, Black Sanders, will contribute a February litter of extra good ones by Admiral. One of the best in the offerings will be a litter by Kankiska and out of Fantasy 37011 S. She was sired by Latest Fashion 9413 S. and out of Queen I. X. L. 24876 S. The finely-bred sow, Lily Duffield 4th 30458 S., and her daughter by U. S. Wise 13138 S. and out of the noted Lizer's Nemo 24471 S., the \$250 harem queen, will each be in the sale. On reference to the sale advertisement elsewhere the reader will learn more about the consignment which will be included in the offerings. They will come from the Lawn Ridge herd of Mr. J. E. Hoagland, of Whiting, Kas., a very successful breeder. Having used the boars Young Competition and Kansas Chip in his herd within the rule governing modern breeding, Mr. Hoagland will let them go to the highest bidder.

Everybody Welcome

To take advantage of the lowest rate ever made to St. Paul and Minneapolis, on the occasion of the Thirtieth Annual Encampment of the G. A. R., the first week in September. Only one cent per mile for the round trip is the rate made, fought for and established by the Chicago Great Western Railway (Maple Leaf Route) for the "boys in blue" and their friends, while the tickets are good for return at any time within thirty days. This is your opportunity to visit the "Twin Cities" and the Great Northwest. The Chicago Great Western offers every luxury on the journey—Compartment Sleepers, Free Chair Cars, Dining Cars on the European plan. Take your family with you and remember the road that deserves your patronage is the Chicago Great Western. Full information will be furnished by any ticket agent, or F. H. Lord, General Passenger and Ticket Agent, Chicago Great Western Railway, Chicago, or George W. Lincoln, Traveling Passenger Agent, 7 West Ninth street, Kansas City, Mo.

Jack Needs a Vacation.

All work makes Jack a dull boy. He should leave the office a while this summer, take Jill along, and go to Colorado. An illustrated book describing summer tourist resorts in the Rocky mountains of Colorado, will be mailed free on application to G. T. Nicholson, G. P. A., A. T. & S. F. railroad, Chicago. Tourist tickets now on sale at reduced rates to Pueblo, Colorado Springs, Manitou and Denver, over the picturesque line, Santa Fe Route.

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! SPECIAL.—Until further notice, orders from our subscribers will be received at 1 cent a word or 7 cents a line, cash with the order. Stamps taken.

ALFALFA SEED—Crop of 1896. Pure and fresh. Write for prices. McBeth & Kinsion, Garden City, Kas.

FOR SALE—Two Poland-China boars, sired by the best son of the great Hadley Jr.; ready for light service and the making of grand service boars. Price \$20 each. Address Riverside Herd, Council Grove, Kas.

WANTED, FARM.—Must be reasonable. State terms and address "C. H. A., FARMER office."

FOR SALE—Choice bottom farm, cheap. Address S. Ernst, Glen Elder, Kas.

FOR SALE—Farms in Morris, Osage, Lyon, Bourbon, Cherokee, Labette, Neosho, Anderson, Montgomery, Coffey, Woodson and many other counties for sale on eight years' time. No interest asked or added in. Write for new circulars with descriptions and prices. Hal W. Nelswanger & Co., Topeka, Kas.

FOR SALE—A desirable residence convenient to Washburn college. Will be sold at a bargain before November 1. C. L. Traver, Topeka, Kas.

LADY WANTED—To sell the Hook Spoon. A very useful article for the kitchen. Send 15 cents and get a sample. Special terms to agents. Keystone Supply Co., 2420 N. Taylor Ave., St. Louis, Mo.

12 HEAD COTSWOLD YEARLING RAMS—Also ram lambs, for sale. G. B. Bell, Tonganoxie, Kas.

AUCTION SALE—SEPTEMBER 9.—Estate late John Whitworth, Emporia, Kas. Pedigree Jersey bull and calf, four cows, three heifers, three calves, five Shropshire bucks, Shire and Clydesdale mares, and quantity other live stock.

FINE STOCK FARM—Cherokee county, Kansas; 500 acres; good buildings, house, barn, sheds, cribs; fenced and cross-fenced; 150 acres under plow; 50 acres under heavy timber; 25 acres good apple orchard; 500 pecan nut trees; blue grass in orchard and part of timber; balance fine meadow. Market railroad three-fourths mile. Belongs to an estate. One-half must be cash or mortgage; other half could take other land. C. H. Kirsner, Attorney, 838 and 847 N. Y. Life Bldg., Kansas City, Mo.

FOR SALE—One hundred and sixty acre farm; well improved; plenty of water; well adapted for raising chickens, hogs and cattle, and for sale cheap. Quit paying high rents and correspond with Geo. S. Hill, Caldwell, Kas., for the best farm within five miles of Caldwell, which is both a freight and passenger division of the Rock Island railroad.

DOUGLAS COUNTY NURSERY—For fall and spring trade, general supply of all kinds of nursery stock, apple stocks and forest tree seedlings. Send for price list. Wm. Plasket & Son, Lawrence, Kas.

FARMER WANTED—Man and wife preferred, to take charge of farm in Noble county, Oklahoma. For terms and conditions, write W. McKay Dougan, M. D., Western Shoshone Agency, White Rock, Nev.

SHAWNEE COUNTY CIDER MILL—Bring your apples to my cider mill, three miles west of Kansas City, on Sixth street road. My mill will be in operation every Tuesday, Thursday and Saturday till November. Henry McAfee Topeka.

WANTED—Fifty to a hundred one or two-year-old steers. State price. Write A. Auchly, care KANSAS FARMER, Topeka, Kas.

FOR SALE—A handsome six-year-old mammoth Kentucky jack. Cost \$500 at 2 years old. Can be had at a bargain. Write H. C. Bowman, 116 West Sixth St., Topeka.

EGGS FOR HATCHING—See advertisement elsewhere. Belmont Stock Farm.

FOR SALE—A new, solid rubber tire bicycle, for only \$15. Good for service anywhere. No fear of puncture. A bargain for some farmer boy. Call and see it at KANSAS FARMER office.

FOR SALE OR EXCHANGE FOR GOOD FARM LANDS—A two-story business block, with basement, on Kansas avenue, near business center. Apply to T. E. Bowman & Co., Topeka.

WANTED—Readers of the KANSAS FARMER to try our "Special Want Column." It is full of bargains and does the business. For less than one dollar, 2-cent postage stamps are acceptable.

SHORT-HORN BULLS—Cruckshank-topped, for sale. Choice animals of splendid breeding. Address Peter Sim, Wakarusa, Shawnee Co., Kas.

FOR SALE AT SPECIAL PRICES—Hay outfits, carriers, forks, etc. Inquire at the store of P. W. Griggs & Co., 208 W. Sixth St., Topeka, Kas.

WANTED—Sale bills, horse bills, catalogues and other printing. A specialty at the Mail job printing rooms, 300 North Kansas Ave., North Topeka.

WANTED—Buyers for Large English Berkshires and improved types of Poland-Chinas, from prize-winners, at farmers' prices. Riverside Stock Farm, North Topeka, Kas.

FOR SALE—A hedge-trimmer which can be attached to a McCormick mower. Will be sold at a bargain if taken quick. Inquire at KANSAS FARMER office.

WANTED—Buyers for Large English Berkshire gilts, bred or ready to breed to son of imported boar. Bargains! O. P. Updegraff, North Topeka, Kas.

WE MAKE A GOOD FARMER'S SPRING WAGON, two lazy backs and let-down end-gate, for \$55. Warranted. Kinley & Lannan, 424-426 Jackson street, Topeka.

DISEASES OF YOUNG AND OLD MEN—Private and skin diseases a specialty. Wm. H. Richter, Ph. G. M. D., 503 Kansas Ave., Topeka, Kas. Correspondence solicited.

FOR SALE—One hundred and sixty acre farm, one and a half miles from Bushong station, Lyon county, Kansas. Good spring. Price \$8 per acre. J. B. McAfee, Topeka, Kas.

FARM FOR SALE—A good Arkansas valley farm, close to Larned. Well improved, large frame house and barn, granary, fencing, etc.; close to school; two railroads in sight. Price, \$10 per acre, payments to suit. A. H. Duff, Larned, Kas.

The New York Journal, which claims to be the only New York daily for the Democratic national ticket, offers a rate which enables us to furnish the KANSAS FARMER one year and the New York Sunday Journal three months, both for \$1.25.

THE STRAY LIST.

FOR WEEK ENDING AUGUST 6, 1896.

Wilson county—T. D. Hampson, clerk. HORSE—Taken up by W. R. Burkopile, in Fall River tp., July 6, 1896, one bay horse, fifteen and a half hands high, harness marks on neck and shoulder.

Marion county—W. V. Church, clerk. MULE—Taken up by August Kohfeld, in Menno tp., June 26, 1896, one bay mare mule; valued at \$15. MULE—By same, one brown gelding mule; valued at \$15.

STEER—Taken up by T. J. McCandless, in Clark tp., June 13, 1896, one red steer, 2 years old, long cut on under side of left ear.

Cherokee county—T. W. Thomason, clerk.

PONY—Taken up by G. W. Douglas, in Crawford tp. (P. O. Columbus), July 20, 1896, one small gray mare pony, thirteen and a half hands high, about 9 years old, branded J. B. on left shoulder, shod when taken up.

Crawford county—John Ecker, clerk.

HORSE—Taken up by E. P. Bogle, in Sheridan tp. (P. O. Beulah), July 13, 1896, one bay gelding, fifteen hands high, about 4 years old, star in forehead and snip across end of nose, white harness mark on back; valued at \$20.

FOR WEEK ENDING AUGUST 13, 1896.

Logan county—J. F. Light, clerk.

MARE—Taken up by Walter S. Inman, in Russell Springs city, July 9, 1896, one bay mare, 8 years old, scar on left hind leg; valued at \$15.

MARE—By same, one bay mare, 9 years old, no marks or brands; valued at \$15.

Cherokee county—T. W. Thomason, clerk.

MARE—Taken up by T. W. Hull, in Shawnee tp. (P. O. Galena), July 20, 1896, one light dun mare with black mane and tail, both hind feet white, white spot in forehead; valued at \$12.

COW—Taken up by Bernard Kennedy, in Mineral tp. (P. O. Scammon), one white cow with red neck and white snip in face, about 10 years old; valued at \$12.

MARE—Taken up by W. L. Jo'ner, in Spring Valley tp. (P. O. Spring Valley), July 20, 1896, one black mare, 5 years old; valued at \$12.50.

PONY—By same, one mare pony, 5 years old; valued at \$10.

HORSE—By same, one gray horse, branded O on right shoulder; valued at \$10.

FOR WEEK ENDING AUGUST 27, 1896.

Montgomery county—J. W. Glass, clerk.

HORSE—Taken up by A. W. Nuttle, in Fawn Creek tp., August 1, 1896, one dark brown horse, 5 years old, branded T or Y with o underneath and line between on left hip.

MULE—By same, one bay mare mule, no marks or brands.

Crawford county—John Ecker, clerk.

HEIFER—Taken up by Wm. Cone, of Pittsburg. August 15, 1896, one bluish gray heifer, 2 years old, no marks or brands; valued at \$15.

VETERINARY SURGEON.

D. U. B. MCCURDY, Veterinary Surgeon. Graduate Ontario Veterinary college, Toronto, Canada. Can be consulted on all diseases of domestic animals at office or by mail. Office: 114 West Fifth Street, Topeka, Kas.

LIVE STOCK AUCTIONEERS.

Live Stock Auctioneer, JAS. W. SPARKS, Marshall, Mo. Sales made everywhere. Refer to the best breeders in the West, for whom I sell. Satisfaction guaranteed. Terms reasonable. Write before claiming dates. Mention KANSAS FARMER.

ELI ZIMMERMAN, Hiawatha, Kansas, Live Stock and General Auctioneer. Pedigreed and registered live stock a specialty. Write for dates. Sales conducted anywhere in the country. Best of references and satisfaction guaranteed.

S. A. SAWYER, FINE STOCK AUCTIONEER—S. Manhattan, Riley Co., Kas. Have thirteen different sets of stud books and herd books of cattle and hogs. Complete catalogues. Retained by the City Stock Yards, Denver, Colo., to make all their large combination sales of horses and cattle. Have sold for nearly every importer and noted breeder of cattle in America. Auction sales of fine horses a specialty. Large acquaintance in California, New Mexico, Texas and Wyoming Territory, where I have made numerous public sales.

FREE—Cut this out and send to-day for free catalogue. \$2.75 buys natural finish Baby Carriage with plated steel wheels, axle, springs, one piece bent handle, 3 years guarantee. Carriages sent on 10 days free trial. BUY FROM FACTORY & HAVE DEARER PRICES. OXFORD MDSE. CO., 340 Wabash Ave., CHICAGO.

WELL DRILLS awarded Highest Medal at the World's Fair. All latest improvements. Catalogue free. F. C. AUSTIN MFG. CO., CHICAGO, ILL.

Notice of Publication.

(No. 18293.)

TWO WILLIS C. JOHNSTON: You are hereby notified that you have been sued in the District court of Shawnee county, Kansas, in the case of Cora May Johnston vs. Willis C. Johnston, and that you must answer the petition before October 7, 1896, or the petition will be taken as true and judgment will be rendered against you granting the plaintiff a divorce from you and for the care, custody and education of Fay Edna Johnston, minor child of yourself and plaintiff.

W. J. REEKS, Attorney for Plaintiff.

Attest: E. M. COCKRELL, Clerk District Court.

COOPER DIP KILLS AND PREVENTS TICKS, LICE AND SCAB. MAKES WOOL GROW. Dipping pamphlet free from COOPER & NEPHEWS, Galveston, Tex. \$2 packet makes 100 gallons; 50c. packet, 25 gallons. If drugist cannot supply, send \$1.75 for \$2 packet to Evans-Gallagher Co., Kansas City, or J. W. Allen & Co., Atchison, Kas.

The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the KANSAS FARMER. Give age, color and sex of animal, stating symptoms accurately, of how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. Sometimes parties write us requesting a reply by mail, and then it ceases to be a public benefit. Such requests must be accompanied by a fee of one dollar. In order to receive a prompt reply, all letters for this department should be addressed direct to our Veterinary Editor, Dr. S. C. ORR, Manhattan, Kas.

LAME HORSE—DISTEMPER.—J. H. R., Conway, Kas.

Answer.—Your letter is too long for publication—in fact, rather long to read very often in one short life. I am inclined to think your veterinarian is right. Let him treat the lame horse. While he is there get him to examine the other one also.

DISTEMPER.—I have a filly that took the distemper three weeks ago. She gathered and broke under her throat and on both sides of her breast, and now she is gathering on her shoulder. What can I do? C. I. C.

Rose Hill, Kas.

Answer.—Open the abscess if it does not break and syringe it out once a day with carbolic water, 1½ drachms of acid to the pint of water, and give her 1 drachm of nitrate of potash in her feed three times a day.

NON-BREEDING—DISTEMPER.—(1) I have a cow that dropped her second calf one year ago last May. She is in good condition and comes in heat about every fifteen days but I have bred her repeatedly without results. (2) I have a three-year-old colt that had the distemper last fall. She is rather thin and sometimes ejects portions of food through her nose and mouth.

Woodston, Kas. M. J. W.

Answer.—(1) The probability is that the mouth of the womb is closed, and the only remedy is to have some one who understands it to open it. (2) There is still some irritation in the throat. Rub her throat once a day with iodine ointment, till it blisters, then wait till the effects all pass off and repeat it. Give her a heaping tablespoonful of the following powder in bran or oats three times a day: Nitrate of potash, gentian, fenugreek, bloodroot and Jamaica ginger, mixed together in equal parts.

ONE HONEST MAN.

DEAR EDITOR:—Please inform your readers that if written to confidentially, I will mail in a sealed letter the plan pursued by which I was permanently restored to health and manly vigor, after years of suffering from Nervous Weakness, Loss of Manhood, Lack of Confidence, etc. I have no scheme to extort money from any one whomsoever. I was robbed and swindled by quacks until I nearly lost faith in mankind, but thank heaven, I am now well, vigorous and strong, and anxious to make this certain means of cure known to all. Having nothing to sell or send C. O. D., I want no money. Address JAS. A. HARRIS, Box 807, Delray, Mich.

Homes for the Homeless.

The opening of two Indian reservations in northeastern Utah to settlers opens up over three and one-half million acres of fine agricultural and stock-raising land for home-seekers.

The Uintah and Uncompahgre reservations are reached by the only direct route, the Union Pacific system, via Echo and Park City. E. L. LOMAX, G. P. & T. A., U. P. system, Omaha, Neb.

"Among the Ozarks."

"The Land of Big Red Apples," is an attractive and interesting book, handsomely illustrated with views of South Missouri scenery, including the famous Olden fruit farm of 3,000 acres in Howell county. It pertains to fruit-raising in that great fruit belt of America, the southern slope of the Ozarks, and will prove of great value, not only to fruit-growers but to every farmer and home-seeker looking for a farm and a home. Mailed free. Address, J. E. LOCKWOOD, Kansas City, Mo.

To Chicago, St. Louis and the East via Burlington Route.

The traveling public is sure to find the best fast vestibuled trains to the East via the Burlington Route.

Handsome new compartment sleepers (same rate as standard sleepers), chair cars (seats free), Kansas City and St. Joseph to St. Louis; standard sleepers, chair cars and dining cars—"pay for what you order"—to Chicago. Take the "Vestibuled Eli" to Chicago and the "Vestibuled Limited" to St. Louis.

Ask agent for tickets via the Burlington Route.

L. W. WAKELEY, Gen. Pass. Agt., St. Louis, Mo.

MARKET REPORTS

Kansas City Live Stock.

KANSAS CITY, Aug. 24.—Cattle—Receipts, since Saturday, 10,140; calves, 1,221; shipped Saturday, 928 cattle, no calves. Best native cattle were steady, others weak to 10 cents lower. Texas cows steady, steers slow and weak in places. The following are representative sales:

SHIPPING AND DRESSED BEEF STEERS.			
No.	Ave. Price	No.	Ave. Price
40.....	1.353 \$4.25	99.....	1.273 \$4.05
40.....	1.548 3.85	99.....	1.538 3.93
18.....	1.393 3.45	20.....	1.232 3.60
8.....	1.176 3.00	17.....	1.175 3.35

TEXAS AND INDIAN STEERS.

81.....	1.097 \$2.85	49.....	943 \$2.70
49.....	912 2.70	55.....	993 2.65
11.....	970 2.50	60.....	854 2.50
27.....	926 2.25	8.....	910 2.00

NATIVE COWS.

1.....	1.040 \$3.00	1.....	973 \$2.75
1.....	1.090 2.50	2.....	1.120 2.20
1.....	1.080 2.00	1.....	840 1.75
1.....	940 1.75		

NATIVE HEIFERS.

6.....	1.128 \$3.50	11.....	907 \$3.60
4.....	1.120 3.35	86.....	973 3.40
6.....	820 2.80	21.....	680 3.15
8.....	848 3.40	8.....	521 2.75

Hogs—Receipts since Saturday, 1,323; shipped Saturday, 1,115. The market was uneven. The following are representative sales:

85.....	200 \$3.25	58.....	114 \$3.20	79.....	200 \$3.20
35.....	206 3.17½	89.....	177 3.17½	71.....	190 3.17½
5.....	200 3.15	85.....	158 3.15	3.....	203 3.15
11.....	198 3.15	58.....	192 3.12½	59.....	224 3.12½
1.....	200 3.10	90.....	167 3.10	61.....	218 3.10
61.....	183 3.07½	15.....	318 3.05	71.....	239 3.05
61.....	232 3.05	1.....	220 3.00	4.....	265 2.95
29.....	241 2.95	3.....	353 2.95	60.....	238 2.90
31.....	303 2.87½	55.....	326 2.85	1.....	300 2.75

Sheep—Receipts since Saturday, 743; shipped Saturday, 416. The market was 10¢ to 15¢ higher. The following are representative sales:

85 lambs.....	67 \$4.75	12 lambs.....	65 \$4.60
82 mut.....	111 3.00	43 mut.....	108 2.90

Horses—Receipts since Saturday, 31; shipped Saturday, none. There was practically no trading this morning. The receipts were only moderate.

Chicago Live Stock.

CHICAGO, Aug. 24.—Cattle—Receipts, 20,000; market strong for best, others 10¢ lower; fair to best beefs, \$3.30@4.75; stockers and feeders, \$2.40@3.70 mixed cows and bulls, \$1.25@3.35; Texas, \$2.50@3.20.

Hogs—Receipts, 45,000; market active and 5 to 10¢ lower; light, \$3.20@3.60; rough packing, \$2.60 2.75; mixed and butchers, \$2.90 3.41; heavy packing and shipping, \$2.80@3.25; pigs, \$2.25@3.60.

Sheep—Receipts, 17,000; market strong; native, \$2.00@3.50; western, \$2.40@3.30; lambs, \$3.00 @5.50.

St. Louis Live Stock.

ST. LOUIS, Aug. 24.—Cattle—Receipts, 4,000; market slow and lower; native steers, \$3.40@4.40; Texas steers, \$2.80@3.50.

Hogs—Receipts, 3,000; market 5 to 10¢ lower; light, \$3.10@3.40; mixed, \$3.00@3.25; heavy, \$3.00 @3.30.

Sheep—Receipts, 1,500; market 5¢ lower.

Chicago Grain and Provisions.

	Aug. 24.	Opened	High'st	Low'st	Closing
Wh't—Sept.....	57½	58½	57½	57½	57½
Dec.....	61½	61½	61½	61½	61½
May.....	65½	66½	65½	65½	65½
Corn—Sept.....	22½	22½	22½	22½	22½
Dec.....	24	24	24	24	24
May.....	28½	28½	28½	28½	28½
Oats—Aug.....	16½	16½	16½	16½	16½
Sept.....	19½	19½	19½	19½	19½
May.....	19½	19½	19½	19½	19½
Pork—Sept.....	5 87½	5 87½	5 80	5 80	5 80
Oct.....	5 97½	5 97½	5 85	5 85	5 85
Jan.....	7 00	7 00	6 90	6 92½	6 92½
Lard—Sept.....	3 37½	3 40	3 37½	3 37½	3 37½
Oct.....	3 45	3 47½	3 42½	3 45	3 45
Jan.....	3 77½	3 80	3 75	3 77½	3 77½
Ribs—Sept.....	3 25	3 25	3 20	3 22½	3 22½
Oct.....	3 32½	3 32½	3 27½	3 30	3 30
Jan.....	3 45	3 47½	3 45	3 45	3 45

Kansas City Grain.

KANSAS CITY, Aug. 24.—There were fair offerings of wheat to-day and a very good demand, but buyers would not pay any advance. Nearly all the offerings were No. 3 and No. 4 hard. There was not a single good sample of soft wheat on the floor. Exporters bid 54½¢, New Orleans, for No. 3 hard out of store.

Receipts of wheat here to-day, 118 cars; a year ago, 94 cars.

Sales were as follows on track: Hard, No. 2, 2 cars 52½, 2 cars 52c, 1 car poor 50c; No. 3, 3 cars 50c, 3 cars 49½c, 4 cars 49c, 7 cars 48½c, 28 cars 48c, 5 cars 47½c, 2 cars 47c; No. 4, 1 car 47c, 5 cars 46½c, 2 cars 46½c, 14 cars 46c, 2 cars 45½c, 3 cars 45c; rejected, 1 car 42c, 1 car 42c, 1 car 41c, 1 car 37c; no grade, 1 car 37c. Soft, No. 2 red, nominally 56c; No. 3 red, nominally 49c 52c; No. 4 red, nominally 43 748c; rejected, 1 car choice 46c; no grade, nominally 35c. Spring, No. 2, 1 car, 48½c; No. 3, 1 car choice 48½c.

Corn was slightly lower and in fair demand. Offerings were light. September corn was quoted at 20½¢ sellers, October 20c sellers. The New Orleans bid was 24½¢.

Receipts of corn here to-day, 43 cars; a year ago, 70 cars.

Sales by sample on track: No. 2 mixed, 6 cars 20½c, 7 cars 20½c; No. 3 mixed, 5 cars 20c; No. 4 mixed, 1 car 18c; no grade, nominally 14@15c; white, No. 2, 4 cars 21½c; No. 3, 2 cars 21½c; No. 4, nominally 20c.

Oats sold at about Saturday's prices. There was a fair demand.

Receipts of oats to-day, 15 cars; a year ago, 24 cars.

Sales by sample on track: No. 2 mixed, 1 car light color 17½c, 1 car choice color 21c; No. 3, nominally 14@15c; 1 car choice 17c; No. 4, nominally 9 13c; no grade, nominally 8@11c; No. 2 white, 2 cars 22c; No. 3 white, 1 car 20c, 5 cars 17c; No. 4 white, nominally 13@16c.

Hay—Receipts, 18 cars; market firm. Choice timothy, \$7.00@7.50; No. 1, \$3.00@3.50; No. 2, \$3.00; No. 3, \$4.00@4.50; prairie, choice, \$4.00@4.50; No. 1, \$3.50@4.00; No. 2, \$3.00@3.50; No. 3, \$2.00@2.50.

St. Louis Grain.

ST. LOUIS, Aug. 24.—Receipts, wheat, 181,000 bu.; last year, 74,100 bu.; corn, 192,898 bu.; last year, 29,500 bu.; oats, 169,400 bu.; last year,

BROOMCORN

ESTABLISH'D 1873
ON CONSIGNMENT OR
SOLD DIRECT.

We carry the largest stock of Broom Manufacturers' Supplies in the United States. Correspondence solicited.

CHAS. SOMMER, President.

M. S. MCCAY.

A. J. PORTER, General Manager.

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Owns and controls for sale:

Coffee, Cocoa, Vanilla and Rubber.....LANDS
Sugar, Tobacco, Corn and Cotton.....LANDS
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In large or small tracts, suitable for colonists or others.

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of the most prosperous country on the Con-

tinent—THE REPUBLIC OF MEXICO.

For fuller information address as above.

The Kansas City Stock Yards

are the most complete and commodious in the West,

and second largest in the world! The entire railroad system of the West and Southwest centering at Kansas City has direct rail connection with these yards, with ample facilities for receiving and reshipping stock.

	Cattle and calves.	Hogs.	Sheep.	Horses and mules.	Cars.
Official Receipts for 1895.....	1,689,652	2,457,697	864,713	52,607	103,368
Slaughtered in Kansas City.....	922,167	2,170,827	567,015		
Sold to feeders.....	322,262	1,376	111,445		
Sold to shippers.....	216,806	278,999	69,784		
Total Sold in Kansas City, 1895.....	1,538,234	2,446,202	748,244	41,588	

CHARGES: YARDAGE, Cattle, 25 cents per head; Hogs, 8 cents per head; Sheep, 5 cents per head. HAY, \$1 per 100 lbs.; BRAN, \$1 per 100 lbs.; CORN, \$1 per bushel.

NO YARDAGE CHARGED UNLESS THE STOCK IS SOLD OR WEIGHED.

C. F. MORSE, E. E. RICHARDSON, H. P. CHILD, EUGENE RUST,
V. Pres. and Gen. Manager. Secretary and Treasurer. Assistant Gen. Manager. Gen. Superintendent.
W. S. TOUGH & SON, Managers HORSE AND MULE DEPARTMENT.

70,465 bu. Shipments, wheat, 103,295 bu.; corn, 77,900 bu.; oats, 10,000 bu. Closing prices: Wheat—Cash, 65c; August, 65c; September, 64½c; December, 64½c. Corn—Cash, 20½c; August, 20½c; September, 20½c; December, 22c. Oats—Cash, 19c; August 19½c; September, 19c.

Kansas City Produce.

KANSAS CITY, Aug. 24.—Butter—Creamery, extra fancy separator, 14c; firsts, 13c; dairy, fancy, 12c; fair, 10c; store packed, fresh, 7½c; packing stock, 7c.

Eggs—Strictly candled stock, 9c per doz.

Poultry—Hens, 5½c; roosters, 15c each; springs, 7c per lb.; turkeys, hens, 6c; gobblers, 5c; old, 4½c; spring ducks, 7c; old, 5c; spring geese, 6c; pigeons, 7c; 85c per doz.

Fruits—Peaches, home grown, 25¢@40¢ per peck; fancy, 10¢@60¢ per peck; shipped stock, ¼ bushel boxes, fancy, 40¢@50c; inferior stock, 30¢ 40c; 4-basket trays, extra fancy, 60c; inferior to good, 40¢@50c. Apples, eating sell from 25¢@3¢ a bu.; cooking, 15¢@25c; Maiden Blush, shipped stock ranges from \$1.25@2.00 per brl.; sweet apples, 75¢@1.00 per brl.; Siberian crabs, 50¢ per bu.; other varieties, 20¢ per peck. Grapes, Concord ranges from 10¢@15¢ per peck basket; fancy Werdens, 15¢@20c; white grapes for jelly purposes, 15¢ a peck.

Potatoes—Home grown, 17½¢@20¢ per bu. in a small way; in round lots, 15¢@17½c; car lots, 15c. Sweet potatoes, new stock, 40¢@50¢ per bu.

HORSES SOLD AT AUCTION

on Tuesday, Wednesday and Thursday of each week. Private sales every day at the Kansas City Stock Yards Horse and Mule Department. The largest and finest institution in the United States. Write for free market reports.

W. S. TOUGH & SON, Managers,
KANSAS CITY, MO.

Consign Cattle, Hogs and Sheep to

LONE STAR

Commission Company

For best results. A new company. Capital \$100,000. Telephone 1108. Market reports furnished. Write us. KANSAS CITY STOCK YARDS.

CONSIGN YOUR SHEEP TO

KNOLLIN & BOOTH,

Sheep Commission Merchants.

Rooms 304-305 Exchange Bldg.

KANSAS CITY, MO. Direct all mail to Station A. Market reports furnished free to all sheep feeders or breeders on application. Correspondence solicited and prompt reply guaranteed.

GROWERS OF AND DEALERS IN

Cattle, Hogs and Sheep

MAKE YOUR CONSIGNMENTS TO

Ben. L. Welch & Co.

COMMISSION MERCHANTS,

STOCK YARDS, KANSAS CITY, MO.
And EAST ST. LOUIS, ILL.

Stockers and feeders bought on order. Liberal advances to the trade. Write for market reports and special information.

LADIES I Make Big Wages

and want all to have the same opportunity. The work is very pleasant and will easily pay \$18 weekly. This is no deception. I want no money and will gladly send full particulars FREE to all. Miss M. E. Stebbins, Lawrence, Mich.

KENDALL'S SPRAIN CURE. Certain in its effects and never blisters. Sold everywhere.

BRASS BAND
Instruments, Drums, Uniforms, Equipments for Bands and Drum Corps. Lowest prices ever quoted. Fine Catalog, 400 Illustrations, mailed free; it gives Band Music & Instructions for Amateur Bands.
LYON & HEALY,
Cor. Adams St. and Wabash Avenue, Chicago, Ill.

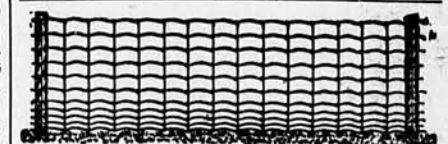
Pete's Coffee House

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The Poultry Yard

THE SWILL BARREL.

Most of Its Contents Can Be Utilized by Poultry Raisers.

Everything that usually goes to the swill barrel can be turned to more profit on the farm if it is put in proper condition for feeding the poultry. Potato and turnip parings boiled are good to put with the mixed food. All table scraps make the very best of food; even the meat bones can be crushed, and will more than pay for the trouble in the increase of eggs. The buttermilk used in a scalding state, or sour or sweet milk the same, add increased nourishment to the mixtures mentioned. The whey, when curd is made, can also be utilized the same way. Whole grain should be fed at evening. Wheat, barley, buckwheat, corn and rye are valued as respectively enumerated. The fowls show a preference for corn, but if fed too liberally it will soon make the hens too fat for profitable egg layers. Of course excessive feeding of wheat will have a like tendency, but in not as quick or so marked a degree. The aim in feeding laying hens, to induce continued egg production, should be to furnish as great a variety of food as possible, and when the season will not permit the hens to secure plenty of insect food, green-cut raw bone should be given, as it is properly recognized as the missing link in egg production in winter. Char a cob of corn in the oven occasionally, and let the flocks have it. Crushed oyster shells or sharp gravel should always be accessible to the hens. Water is a great essential. All the foods named can be given to growing chickens, and in addition cracked corn. Chicks will require more liberal feeding and often than fowls, as they are making flesh, muscle, bone and feathers at the same time, thus requiring a good supply of varied and nourishing diet. Wheat screenings may supply bulk, but a very little nourishment. Damaged grain of any kind should never be fed to poultry.—Colman's Rural World.

HONEY EXTRACTOR.

How to Make a Good One at Home at a Trifling Expense.

For a bee-keeper running from 5 to 50 colonies, an extractor can be made for about \$1.25. Take four frames 10 by 13 inches, outside measure, 2 boards 17 inches wide, 15 inches long; 1 board 21 inches long, 12 inches wide; 6 sticks, nails, barrel, 3 feet wire cloth and a half day's work. Nail two sticks about 5 inches long to the inside of the barrel opposite each other and 4 inches from the bottom of it, having notches in them to receive a cross bar, which make about one-fourth by two inches. The upright center piece for the basket make 2 by 2 inches and 2 feet long; bore 2 1-inch holes through it 10 inches apart, drive through two round sticks 8 1/4 inches long and that fit nicely. The upright stick should be tapered off at the bottom end and made round to 1 inch diameter near the top end for a journal. A board 2 inches wide and 5 inches long, with 2 or 3 one-half-inch holes bored in it and nailed to the journal with wire nails, does very well for a crank to turn by. Nail 2 sticks 17 inches long to the 17-inch boards and 1 1/2 inches thick, and bore 2 1-inch holes three-fourths of an inch deep and 10 inches apart in each of them, and fit them on the ends of the round inch sticks. Nail the 12 by 19 inch wire cloth to the end of the board tightly and then spring the boards apart and fasten firmly to the spokes. Let the 21-inch board cover one-half inch more than half the top of the barrel and block a hook and staple to fasten it to the wall firmly and box on the center upright piece. The inside of the barrel should be sandpapered and waxed.—R. F. Whiteside, in Farm and Home.

Troubles of Beekeeping.

Beekeeping has come to be an important industry in California, and, as might have been expected, there is a conflict going on between the beekeepers and the fruit growers, the latter asserting that their fruits are injured by the swarms of bees that sting the fruit in order to secure the honey. The controversy has grown very interesting in San Leandro, which is in the midst

of the fruit country, and the complaints which have been lodged with the trustees have led to a serious tangle. A struggle is now being made with an ordinance that shall restrain the bees from being guilty of vagrancy.

NOTES FOR BEEKEEPERS.

Removal of all the queen cells will stop swarming.

There are more failures from bad management than bad seasons.

A cell properly developed and of full size is certain to produce queens.

Extracted honey needs about the same care as molasses. It may be stored in any bulk.

Glass packages always show the honey just as it is, and the buyer sees just what he is buying.

Drone-laying queens are worthless in every respect, for the drones they produce are deficient.

Be on the lookout for drone-laying queens. A good colony will soon be destroyed by them.

A colony for hatching should at all times be strong and contain brood in all stages of development.

Bees will destroy an old, worn-out queen, but only when the conditions are favorable for raising a new queen.

Honey just after being taken from the hives should be put into open vessels, and allowed to ripen before storing away.

Giving the old swarms a young, fertile queen as soon as the first swarm has left will usually prevent second swarming.

As soon as the honey flow or the heaviest part of it is at an end remove all surplus honey intended for market or family use.

You can extract honey from frames partly filled with brood at any time. It is not necessary to wait until they are sealed over.

Surplus departments or upper stories should be kept on the hives during the summer season, as quite a surplus may be stored at intervals.

It will be a good time now to lay away a few combs of sealed honey for the bees to use next winter. It beats feeding and is better for the bees.

Deafness Cannot be Cured

by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the eustachian tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

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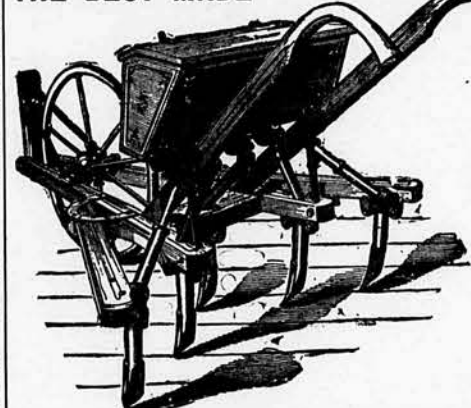
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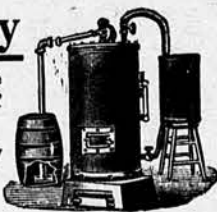
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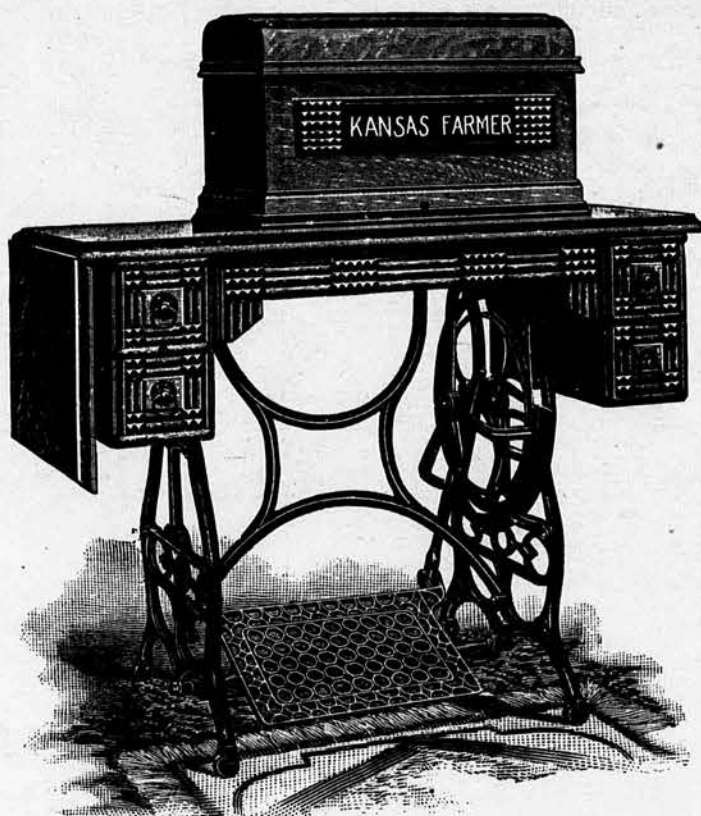
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