

# KANSAS FARMER

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Registered stock. Send for 44-page catalogue, prices and history, containing much other useful information to young breeders. Will be sent on receipt of stamp and address. J. M. STONEBRAKER, Panola, Ill.

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When you write mention Kansas Farmer.

## 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 1895.

(Continued from last week.)

#### IMPREGNATION OF SOILS WITH NITRATES.

When these deposits take place in regions subjected to heavy rains, the nitric acid which is formed is rapidly removed, to be returned to the ocean and begin anew the circuit of life which will finally restore it to the land. By reason of the accumulation of nitrogenous matters in tropical regions, especially where there is deficient rainfall, it has been found that the soils of those regions contain a very much larger percentage of nitrates than is found, for instance, in the soils of the United States. These nitrated soils are very abundant, especially in Central and South America, where they cover large surfaces. In these soils the nitric acid, as a rule, is found in combination with lime, while in the purer deposits of nitric acid it is almost constantly found in combination with soda. In some South American soils as much as 30 per cent. of nitrate of lime has been found. Not only birds serve thus to secure deposits of nitrogen, but large quantities of guano rich in nitrates have their origin in the debris of insects, fragments of elytra, scales of the wings of butterflies, and other animal matters which are often brought together in quantities of millions of cubic meters. The products of nitrification in these deposits may also be absorbed by the surrounding soils. Some localities produce such great quantities of nitrate of lime (which is a salt easily absorbing water) as to convert the soil in their immediate neighborhood into a plastic paste. In all the deposits such as are described above are found large quantities of phosphoric acid and sufficient remains of animal life to show in a positive manner their origin. It is thus seen that there is a very marked difference between the character of the deposits of nitric acid due to terrestrial animal origin and those which have been derived from a marine vegetable source. An economic observation of some importance may be made here, viz., to the effect that when in the future the deposits of nitrate of soda due to marine origin are exhausted it may still be possible to keep up the supply demanded for agricultural use by leaching the highly impregnated soils above mentioned and thus securing the nitric acid in a form sufficiently concentrated to make its transportation profitable.

#### PROPERTIES OF NITRATE OF SODA.

Practically the only form of oxidized nitrogen which is of commercial importance, from an agronomic point of view, is sodium nitrate, commonly known in commerce as Chile saltpeter. The nitrate of potash, a nearly related salt, is also of high manurial value, but on account of its cost and the importance of its use in the manufacture of gunpowder, it has not been very extensively applied as a fertilizing material. When Chile saltpeter is applied to a growing crop it becomes rapidly dissolved, especially at the first fall of rain or by the moisture normally existing in the soil. It carries thus to the rootlets of plants a supply of nitrogen in the most highly available state. There is, perhaps, no other kind of plant food which is offered to the living vegetable in a more completely predigested state and none to which the growing plant will yield a quicker response. By the very reason of its high availability, however, it must be used with the greatest care. A too free use of such a stimulating food may have in the end an injurious effect upon the crop and is quite certain to lead to a waste of a considerable portion of expensive material. For this reason Chile saltpeter should be applied with extreme care in small quantities at a time and only when it is needed by the growing crop. It would be useless, for instance, to apply this material in the autumn with the expectation of its benefiting the crop to a maximum degree the following spring. If the application of the

manure should be made just previous to a heavy rain, it is not difficult to see that nearly the whole of it might be removed beyond the reach of the absorbing organs of the plant.

#### DECOMPOSITION OF SODIUM NITRATE.

The molecule of sodium nitrate is decomposed in the process of absorption of the nitric acid. The plant presents a selective action to its constituents, the nitric acid entering the plant organism and the soda being rejected. Soda, however, may not be without its uses, for, doubtless being at some time in a practically nascent or hydrated state, it may play a role of some considerable importance in decomposing particles of minerals containing phosphoric acid. It is probable that the decomposition of the sodium nitrate takes place in the cells of the absorbing plant, for it is difficult to understand how it could be accomplished externally except by a denitrifying ferment. While the soda itself is therefore of little importance as a direct plant food, it can hardly be dismissed as of no value whatever in the process of fertilization.

Many of the salts of soda, as, for instance, common salt, are quite hygroscopic, and serve to attract moisture from the air and thus become carriers of water between the plant and the air in seasons of drought.

The Chile saltpeter of commerce may reach the farmer in the lumpy state in which it is shipped, or finely ground ready for application to the fields. Unless the farmer is provided with convenient means for grinding, the latter condition is much to be preferred. It permits of a more even distribution of the salt, and thus encourages economy in its use.

#### METHODS OF PRESERVING NITRATES IN THE SOIL.

It is not possible at all times to maintain an equilibrium between the activity of the nitrifying organism and the needs of a growing crop. There are times when the amount of nitric acid produced is greater than the crop demands, while at other periods the needs of the crop may be far in excess of the ability of the organisms to supply. In the one case there will be a necessary increase in the amount of nitrates in the soil, while in the other the vigor of the growing crop will be at least temporarily checked. There are many practical points connected with this matter which must be of great interest to the farmer. As a rule, farming operations are carried on for profit and not for pleasure, and for this reason the more practical the results of scientific study the more useful they become to the great mass of agriculturists. The rich man who farms for pleasure can easily afford expenses in the way of fertilizers which the practical farmer must avoid. Happily, at those seasons of the year when crops grow least vigorously the activity of the nitrifying organisms is reduced to a minimum. For instance, the amount of nitric acid which is produced during the winter is a very small quantity as compared with the production during the warm months. In the natural order of things, therefore, there is a tendency to conserve to the utmost the products of nitrification.

#### ABSORPTION OF NITRATES BY PLANTS.

Evidently, the very best method of utilizing the products of the activity of the soil ferments is to have them absorbed by a growing crop. For this reason, as well as for others of an economical nature, the farmer should have as little waste land as possible. Every acre which he possesses should either be devoted to forest, orchard, grass, pasturage or cultivated crops. By thus occupying the land he will reduce to a minimum the losses which occur from the leaching of the soil by water.

It is well known that all agricultural crops store immense quantities of organic nitrogen in their tissues. As a rule the highest percentages of nitrogenous organic compounds are found in the seeds of plants, but it must not be forgotten that certain grasses which are harvested for hay also contain large quantities of nitrogen. This is especially true of clover. It is easily seen from the above how wasteful is the practice, now happily almost ex-

tinct, of burning the residue of cereal crops, as, for instance, Indian corn stalks and the straw of wheat, in order to prevent them from obstructing subsequent tillage. In this wasteful process it is true that the phosphoric acid and potash are saved and returned to the soil, but all the nitrogenous compounds are practically lost and dissipated in the air. The quantity of ammonia and oxides of nitrogen which are produced in combustion is insignificant when compared with the total nitrogenous content of the refuse matters mentioned above. It is far better that these residual matters be chopped as finely as possible and turned under by the plow. Although they may not decay with sufficient rapidity to be of much benefit to the next crop, yet they will gradually become decomposed and serve a most valuable end in contributing fresh stores of humus and nitrogen to the arable soil. Combustion is the most wasteful and also the least scientific method of disposing of the refuse of the fields.

#### FALLOW FIELDS.

In former times it was a common practice among farmers to allow a field to lie fallow for one season in order to increase its fertility. The advisability of this process is extremely questionable. During a moderately dry summer there is probably very little loss experienced by plowing a field after the spring rains and keeping its surface sufficiently well cultivated during the summer to prevent the growth of weeds. In the absence of heavy rainfall the stores of available nitrogen in such a soil will undoubtedly be increased during the summer, inasmuch as the processes of nitrification will be continued and the stores of nitrogen thus oxidized, in the absence of absorbing bodies, will remain in the soil. Even in case of rainfalls which may carry the soluble plant food below the arable soil there may not be any notable loss, especially if such a downpour be followed by dry weather. In the latter case, by the evaporation from the surface and consequent capillary movement of the soil moisture upward, the available plant food carried below the reach of the rootlets of plants will be brought again toward the surface and rendered available. But in case of heavy rains, producing a thorough saturation and leaching of the soil, the losses in a field lying fallow during the summer will be very great, and it is not well at any time to take the risk. Especially is this statement true of fields which have lain fallow during the summer and which are afterwards exposed to the saturating rains of autumn and winter. In these cases the nitrogen will be thoroughly extracted and all the soluble matters which may have accumulated during the summer will be lost. It is advisable, therefore, in all cases, instead of allowing the fields to lie fallow, to seed them with a catch crop, such as barley, rye or peas, which may retain the products of nitrification. When the time comes for seeding the field with the intended crop the catch can be turned under with the plow and, in the process of decay, furnish again the nitrogenous food in an available form. This practice should never be neglected in fields which lie over during the winter in preparation for planting during the following spring. Of course, this statement does not apply so particularly to fields which may be plowed late in the autumn, after the activity of the nitrifying ferments is practically suspended for the winter. In a temperate climate fields may be plowed late in November or during the month of December and the freshly-turned soil be exposed to the action of the weather during the winter without great danger of loss.

In many localities even an earlier period might be chosen for the autumn plowing, which should be deep or accompanied by subsoiling. The loosened soil should be brought into good tilth and thus form an absorbent which will hold large quantities of moisture, becoming available for the following season during the period of deficient rains.

(To be continued.)

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

## Well Satisfied with Ayer's Hair Vigor.

"Nearly forty years ago, after some weeks of sickness, my hair turned gray. I began using Ayer's Hair Vigor, and was so well satisfied with the results that I have never tried any other kind of dressing. It requires only an occasional application of



### AYER'S

Hair Vigor to keep my hair of good color, to remove dandruff, to heal itching humors, and prevent the hair from falling out. I never hesitate to recommend Ayer's medicines to my friends."—Mrs. H. M. HAIGHT, Avoca, Nebr.

## AYER'S Hair Vigor

Prepared by Dr. J. C. Ayer & Co., Lowell, Mass.

Take Ayer's Sarsaparilla for the Complexion.

#### Yield of Cheese from Milk.

With ordinary milk the yield is about 2.5 pounds of cured cheese for each pound of butter fat in the milk. The per cent. of butter fat in different milks very nearly determines their relative values for cheese-making. Prof. Van Slyke, of New York, found by a series of careful experiments that with milk ranging from 3.4 per cent. to 4.4 per cent., the amount to each pound of butter fat was 2.72 pounds of green cheese, or 2.5 pounds cured five weeks. It was found that 5 per cent. milk made but 2.4 pounds of cured cheese for each pound of butter fat, but the better quality of the cheese from the richer milk was thought to compensate for the slight difference in quality. It will be seen that 100 pounds of 4 per cent. milk made ten pounds of cheese and 100 pounds of 5 per cent. milk made twelve pounds of cheese.

INSIST UPON HOOD'S Sarsaparilla when you need a medicine to purify your blood, strengthen your nerves and give you an appetite. There can be no substitute for Hood's.

HOOD'S PILLS are the best after-dinner pill; assist digestion, prevent constipation. 25 cents.

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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.

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Gen. Pass. and Ticket Agent,  
Omaha, Neb.

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#### Important to Breeders.

Every one interested in improved stock should have the *Breeder's Gazette*, of Chicago, as well as the *KANSAS FARMER*, which we furnish for the price of one—both papers one year for only (\$2) two dollars; or we will supply the *National Stockman and Farmer*, of Pittsburgh, Pa. (the best general farm and stock journal in this country, price \$1.50), and the *FARMER*, for \$1.50. Send for sample copies to the papers direct, and save money and get a big benefit by sending your subscription to *KANSAS FARMER*, Topeka, Kas. No progressive farmer or breeder can afford at this low price to be without this great trio of farm magazines.

## 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, Hordfords, 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.)

#### BACTERIAL CORN DISEASE.

Another theory that has attracted considerable attention in the West is one advanced by Dr. F. S. Billings, formerly of the Nebraska Experiment Station. This theory attributes the corn stalk disease in cattle to eating corn stalks which are affected with a bacterial disease, known as the Burrill bacterial corn disease. When the germs of the diseased corn stalks were taken into the system of cattle with the stalks, the germs then caused a disease of cattle known as the corn stalk disease.

This disease of corn stalks was first studied and demonstrated by Prof. T. J. Burrill, of the University of Illinois. This disease of corn stalks is quite common in small, stunted corn stalks, especially if grown on rather wet soil, and is shown by rusty brown spots on the leaves and stalks.

The theory that these diseased corn stalks produced the corn stalk disease in cattle was attracting considerable attention among farmers and stockmen in 1891 when I first began to investigate the corn stalk disease, so experiments were undertaken to demonstrate what influence, if any, the diseased corn stalks had in the production of the corn stalk disease.

On July 13, 1891, I received from Prof. Burrill a culture of the germs or bacteria which produced the disease in growing corn stalks, and also specimens of fresh and dry corn stalks, showing the appearance and effects of the germs upon the corn. From the original cultures sent me by Prof. Burrill other cultures were made, and from these cultures two rows of growing corn forty rods long were inoculated. Each stalk was inoculated in several places by making incisions into the stalk, and especially where the leaf sheath surrounded the stalks. The corn was making a vigorous growth and considerable difficulty was experienced in getting the disease to "take," but by going over the corn several days apart and mutilating the stalks at the point of inoculation most of the stalks became affected with the disease, but not seriously as the growth of the stalks was not materially checked. These inoculated stalks when thoroughly ripened were gathered and fed to a two-year-old heifer which was confined in a stable. For eight days she was fed exclusively on this inoculated corn fodder, which she ate readily. Her temperature and pulse were taken twice daily, morning and night. The excretions and general condition were carefully watched, but no deviation from a normal condition was observed.

Cultures of the Burrill corn disease were made in beef broth, and when the broth was decidedly turbid from the growth of germs, the same heifer was given doses of this culture, beginning with 100 c. c. doses twice daily for two days, without any apparent effect. Then two doses of 500 c. c. were given morning and night for one day. Her normal temperature had varied from 101.2-5° F. to 102.3-5° F. On the morning when this large dose was given her temperature was 102°, at night 103.1-5°; the next morning her temperature was 102.2-5° F., and she was affected with a mild diarrhea. Blood was drawn from the ear and examined microscopically and inoculations made in nutrient agar, but no bacteria were found and the tubes remained sterile. The next day her morning temperature was 102.2-5°,

night 102.3-5°. Nothing further abnormal in her condition was noted.

Fields of growing corn in the vicinity of Manhattan were examined to determine the presence of the Burrill bacterial corn disease. In all fields some was found, but it did not seriously affect any. One field near the college, belonging to Mr. McDowell, was found which seemed to have more of the diseased corn than others examined. Most of the diseased corn was along a low place, at times a water-course, that ran through the field. Into this field of about twenty-five acres, twenty-eight head of mixed native cattle were turned, about the middle of November. The field was well pastured off. No ill effects were noticed, the cattle all doing nicely.

The Bureau of Animal Industry of the United States Department of Agriculture, in investigating the corn stalk disease of cattle, also found that cattle ate corn stalks affected with the Burrill corn disease without ill effects:

"A drought which extended over the greater part of the State of Illinois in August and September, 1893, dried up the pastures and compelled the farmers to feed their cattle. In many instances corn stalks were the only food given. As all of the corn was found to be affected with this disease, it was evident that no feeding experiment could be more efficacious than those already being made. Several herds of cattle that were fed exclusively on these stalks were carefully watched for a period of several weeks, but no evidence of disease appeared. The corn stalks fed were carefully examined and found to be thoroughly affected with the Burrill disease. It should be noted that the cattle ate these stalks much closer than they did the dried ones in the field later in the fall, and consequently they ingested many more of the diseased areas. It is of interest to add that, so far as it was possible to learn, the corn stalk disease did not appear among cattle in 1893 in the districts visited in the fall when the mature corn stalks were known to be badly affected with the Burrill disease."

If corn affected with the Burrill corn disease is the cause of corn stalk disease in cattle, it seems probable that the disease would be more likely to occur among cattle that were fed corn fodder which had been gathered and sheltered so that the germs would not be weakened or destroyed by exposure to inclement weather. The corn stalk disease does not occur among cattle fed on corn fodder; on the contrary, it often occurs as late as February where cattle are pastured on stalks that have been exposed for months, the most inclement of the year. I have also examined bacteriologically pieces of tissue from five different animals said to have died from corn stalk disease and all from different outbreaks. The examination included an examination of the tissues microscopically for the presence of pathogenic bacteria and inoculations of artificial media from the pieces of tissue, to try and grow and isolate some pathogenic or disease-producing germs. A number of varieties of bacteria were obtained, but all proved to be germs of decomposition, and not disease-producing. The Bureau of Animal Industry, in the bulletin previously quoted, reports an examination of eight different animals that had died of corn stalk disease and the same results obtained. No pathogenic germs were found.

There are no indications that the corn stalk disease of cattle is a germ disease; in fact, all indications are that it is not a germ disease; and there is abundant evidence that corn stalks affected with the Burrill corn disease do not cause corn stalk disease in cattle, nor do such stalks have any injurious effect upon stock. Neither do large doses of pure cultures of the germs of the Burrill corn disease, when given to animals as a drench, produce serious effects.

Chinch bugs in the standing corn stalks are occasionally suggested as a possible cause of corn stalk disease, but all the evidence is against such a theory, as much larger quantities of chinch bugs are often fed in corn fodder and sorghum than could possibly be obtained in the standing stalks, and

no ill effects follow. The presence of poisonous plants aside from corn stalks is also occasionally mentioned as a possible cause of death; but as the corn stalk disease often occurs after mid-winter, when it is not possible for cattle to procure plants of a poisonous nature, this theory must be abandoned. The relation of salt to the cause of corn stalk disease will be discussed later.

All the evidence at hand seems to indicate that corn or corn stalks are the cause of the disease, and that the corn stalk disease results from indigestion or irritation from the corn stalks, or the presence of a poisonous substance either in the corn or stalks.

#### SYMPTOMS.

For the symptoms of corn stalk disease it is necessary to depend upon the farmers and stockmen for descriptions, and these seem to vary as much as the conditions under which the disease occurs. It is quite probable that quite a number of cattle die in stalk fields from other causes than corn stalk disease, and the symptoms shown by such cattle are often confused with those of corn stalk disease. On the other hand, the variety of symptoms reported as those of corn stalk disease would indicate that the corn stalk disease may result from a combination of causes. The principal symptoms of what might be called typical corn stalk disease are as follows:

The disease comes on suddenly with very few premonitory symptoms. If the cattle are in the stalk fields, the affected animal is noticed lying or standing apart from the rest. If standing, the animal is usually "humped up," often switching the tail or twisting the rump in a peculiar manner, sometimes kicking at the belly. There is often a peculiar wild look to the eyes and other indications that the animal does not see readily, or comprehend what it does see. If the animal is disturbed it usually moves reluctantly, though if the brain symptoms are pronounced the animal often starts wildly and appears slightly delirious. If the animal's brain is not affected it usually moves with an uncertain, "wobbling" gait, often smelling of the corn stalks but never eating. As the disease progresses the symptoms of suffering and delirium are greatly increased, struggling, and moaning or bellowing. The respirations are increased and there is often some bloating, death usually following within twenty-four hours after the animals are first noticed ailing.

(To be continued.)

#### Live Stock Matters.

The *Drovers' Journal* insists on the lean hog, but it admits that the demand for it is weakest in an off corn year when lean hogs are most abundant. This is only another way of saying that the market demand is for fat hogs when feed conditions are such that the grower can make nothing but lean ones, and for lean ones when corn is a drug and the hogs are welcome to all they can eat. The market seems to be in the condition of the depositor when there was a run on the bank. "If you have my money to pay me, I don't want it; if you haven't got it I want it awful bad." The market wants what we haven't got and don't want what we have got, whether it be fat or lean.

The lard situation, which has been increasingly bad for several years and is now the worst that it ever was, has a good deal to do with the fat and the lean hog controversy. The price of lard is now the lowest it has ever been in the history of the product. If the swine men had taken hold with a long pull, a strong pull and a pull altogether a few years ago, when we were trying to secure the passage of a pure lard bill by Congress, the corn-fed hog would not now be at the discount he is in the market. If the same united effort had been made that was made by the dairymen against oleomargarine, and has since been made against filled cheese, lard substitutes and grease compounds of various kinds would not now be crowding the last dying squeal out of the lard hog. We buy our buckets of "lard" yet as plentifully as ever, but the lard hog has very little to do with filling them. However, it does no good to say "I told you so."

If the lean, light hog must come, a

## Pure

Blood means sound health. With pure, rich, healthy blood, the stomach and digestive organs will be vigorous, and there will be no dyspepsia. Rheumatism and neuralgia will be unknown. Scrofula and salt rheum will disappear. Your nerves will be strong, your sleep sound, sweet and refreshing. Hood's Sarsaparilla makes pure blood. That is why it cures so many diseases. That is why thousands take it to cure disease, retain good health. Remember

## Hood's Sarsaparilla

Is the One True Blood Purifier. All druggists, \$1.

### Hood's Pills

cure Liver Ills; easy to take, easy to operate. 25c.

new source of supply for crossing, quite as good as the Florida everglade razor-back, may be found in the wild hogs of the Hammonasset swamps in Connecticut, although we doubt whether the Secretary of Agriculture would now issue a circular commending the cross. The flesh of the Connecticut wild hog is said to be of good flavor, but quite tough and almost wholly without fat. They rarely exceed 150 pounds in weight, so that they are not troubled with excessive scale. They disembowel ordinary hunting dogs with their tusks easily, and the only dogs good for anything against them are those that have learned to hamstring them. They are the descendants of a drove of Western hogs that escaped to the swamps some years ago and are said to have become very numerous. For market purposes we believe we prefer the Poland-China, the Berkshire, the Chester White or Duroc-Jersey, though the swamp hog is doubtless more picturesque and gamier.

Speaking comparatively there is more in the sheep just now than anything else going to market. The best cattle are a dollar or more lower than a year ago; hogs have sustained a drop that was twice as bad, but sheep are no lower and lambs are higher. While this statement of the situation is literally true, however, it is deceptive. Last year flockmasters were panic-stricken and anxious to give sheep away, so that the price then, with which price is now compared, was phenomenally low, and this was not the case with either cattle or hogs. Still sheep are on a firmer footing and there is no doubt but the American people are learning to eat a good deal more mutton per capita than formerly.

Goats do not often receive much mention in stock note columns, but it is worth while to notice that considerable interest is manifest in the production of mohair in this country, and flocks of Angoras are increasing. In Cape Colony, South Africa, the farmers are going wild over Angoras and at a recent sale at Cape Town, ninety-one Angora rams realized \$4,851, or nearly \$25,000, an average of \$265 each. The best ram sold for \$330, or say \$1,650. These are rather astonishing prices for goats, but the Cape Colonists seem bound to go into mohair production on a high-grade basis. The colony has in ten years increased its mohair clip from five million to eleven million pounds and is as enthusiastic on the subject as ever.

—The Iowa Homestead.

Mr. Natanael Mortenson, a well-known citizen of Ishpeming, Mich., and editor *Superior Posten*, who, for a long time, suffered from the most excruciating pains of rheumatism, was cured, eight years ago, by taking Ayer's Sarsaparilla, having never felt a twinge of it since.

#### 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.

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

## Irrigation.

### METHODS OF IRRIGATION.

From Bulletin No. 39, Utah Experiment Station.

In many of the European countries, where the art of irrigation is much more developed than in this country, much labor is expended in fitting the ground for irrigation. Two principal methods are used for this purpose. One consists of many small ditches or laterals leading from a main ditch, so that the water has to flood over the surface for a very small distance. By this means the water is evenly distributed over the ground at about the same time and to the same depth. Another method is to throw up a system of bedwork, the

planting, leaving the ground in small furrows about a foot apart. When this machine is crudely made it is called a "go-devil," and the practice is called "go-deviling." With corn, potatoes, beets, etc., the furrow system of irrigation is practiced. We attempted to test the merits of the two systems by direct comparison of the yields by the two methods with both wheat and corn. The results with wheat are given in table XXVII.

As will be seen, the common flooding system gave an increased yield of more than 23 per cent. over that irrigated by the furrow or "go-devil" system. The yield of straw was also increased by flooding. This being the work of but one season, it may be well to take

Table XXVI.—Yields of timothy, in pounds, per acre.

Year.	Plot 123. Irrigated from one side.	Plot 124. By laterals running from one side.	Plot 152. Irrigated from one end.	Plot 153. Flooded.	Plot 154. From a ridge in center, bed work.
1892.....	1,685	3,440	3,556	2,667	3,400
1893.....	3,463	4,212	2,578	3,067	2,933
1894.....	4,961	6,458	4,177	5,200	4,533
Average.....	3,370	4,703	3,437	3,645	3,623

beds being higher in the center and sloping both ways. A ditch is made along the center of each bed, large at the beginning and growing smaller as it advances. This allows the water to be distributed quite evenly over the whole ground at the same time. These methods, with others, are given in table XXVI., along with the results of each.

The plot "irrigated from one side" was irrigated by having the water flow continuously across the ground from one side of the plot, which was one and three-fourths rods wide, until the plot was irrigated. The plot irrigated "by laterals running from one side," was under the lateral system—the ground being laid off by a net-work of small ditches. The plot irrigated "from one end" was irrigated by allowing the water to flow across a plot six rods long, continuously from one end until the whole plot was covered with water. The plot flooded had a ridge thrown up all around it, about one foot high—the whole plot being covered three or four inches deep with water, which was allowed to stand and soak in. The plot irrigated from ridge in center was irrigated by the bed system, described above.

The water was measured, so that each plot received the same amount of water, which amounted, on an average, to about six inches at each irrigation.

As will be seen by reference to table XXVI., the lateral system gives much the highest yield. The system of flooding is next, while that irrigated by ridge in center is very close to the flooding. That irrigated from the side or the end gives the lowest yield.

It will be observed that the system by which the ground was covered most evenly with water gave the best results. That in which great care was taken, by distributing the water by an extensive system of laterals, gives far the highest yields. It may be found profitable to extend and carry out this system and at best to distribute the

results with some caution. We are now intending to carry it forward with both fall and spring wheat.

Table XXVIII. gives the results with corn.

Year.	Average.	Pounds of stover per bushel of corn.....	
		Stover, pounds.....	Corn, bushels.....
1892.....	63	3,460	52.63
1893.....	64	3,703	60.56
1894.....	51	2,407	48.57
1895.....	40	3,200	79.33
1896.....	42	1,800	42.67
1897.....	46	2,400	52.38
1898.....	74	3,400	45.90
1899.....	71	3,400	46.10
1900.....	84	6,173	73.38
1901.....	96	6,173	73.38
1902.....	96	6,173	73.38
1903.....	96	6,173	73.38
1904.....	96	6,173	73.38
1905.....	96	6,173	73.38
1906.....	96	6,173	73.38
1907.....	96	6,173	73.38
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1911.....	96	6,173	73.38
1912.....	96	6,173	73.38
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1997.....	96	6,173	73.38
1998.....	96	6,173	73.38
1999.....	96	6,173	73.38
2000.....	96	6,173	73.38

The furrow irrigation was that commonly in use. The corn was planted in hills and furrows run through one way and the water allowed to run through these furrows between the

Table XXVII.—Yields of wheat per acre.

Method of irrigation.	Number of plat.....	Bushels of grain.....	Pounds of straw per bushel of grain.....	Average.	
				Pounds of straw per bushel of grain.....	Pounds of straw per bushel of grain.....
Furrow or "go-devil" irrigation.....	108	15.56	1,133	14.33	1,140
Flat or common flooding system of irrigation.....	136	13.11	1,147	17.07	1,406
	107	15.78	1,220		
	136	19.56	1,493		

water with more care than is generally bestowed.

Here in Utah, however, there are but two common systems in vogue. One is the system of covering the ground with water, or simply flooding it, and the other is irrigation by furrows. Everything that can be planted in rows is so planted, and furrows plowed between the rows. With the small grains an instrument or machine is run through the field just after

rows. In flooding, the corn was irrigated as is a level field of wheat, by simply covering the entire surface with water.

A glance at table XXVIII. shows that for every year, except 1891, there was an increase of yield in corn, amounting in 1894 to more than 63 per cent. by the method of flooding over the furrow irrigation. The averages for the four years show an increase of more than 15 per cent. by flooding.

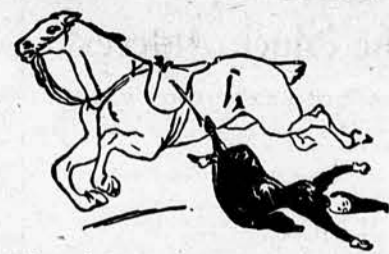
The yield of stover was the same for the first two years by both systems, while for the last two years there was an increase by flooding, making for the average of the four years an increase of nearly 10 per cent. in the stover for the flooding over the furrow irrigation. The term "stover" is used to indicate that part of the plant left after the ears are taken off. The term "fodder" is more generally used here in Utah, but fodder should mean both stover and corn, or the plants cut and cured with the corn left on.

In connection with these experiments it may be well to call attention to one in this same line, made and reported by Prof. Richman, with potatoes. In summarizing Bulletin No. 20, of this station, page 27, he says: "Irrigating potatoes by flooding gave better results than irrigating between the rows." Especial attention is called to these results in comparing the flooding and furrow systems. The latter system is so thoroughly established in Utah that farmers and gardeners, as a rule, consider it a folly to irrigate anything planted in rows by any other than the furrow system. The furrow system requires more time, more work and more water than does the flooding system, while our experiments show that with wheat, corn and potatoes there is an increased yield by the flooding system. The great objection to the flooding system is that the ground bakes. This is easily overcome by cultivating as soon as the ground is dry enough. The furrow system of irrigation must of necessity be accompanied by the hilling system of cultivation. With both corn and potatoes, as a rule, it is found that level cultivation is the better. Whether the decrease in yield is due to the furrow system of irrigation or whether it is due to the hilling system of cultivation, it is hard to decide. Be this as it may, there is a decrease in yield by the furrow system. In our general field of corn we use level cultivation, and irrigate the same as if irrigating a common wheat field, by laying off furrows along the high places, then flooding the ground. As soon as dry enough the cultivator is run over the ground, no crust being allowed to form. By this method, on our poor clay soil, we have raised as high as ninety bushels of corn to the acre, counting seventy pounds of ear corn to the bushel.

#### SUMMARY.

1. Of five different methods of distributing water on grass land, distributing by a net-work of small ditches gave the best results.
2. The methods which distributed the water most evenly over the ground gave the highest yields.
3. There was an increase in yield of wheat of more than 23 per cent. by the common flooding system over the furrow or "go-devil" system. Result of duplicate plots for but one year.
4. With corn there was an increase of more than 15 per cent. by flooding over the furrow system.
5. The corn stover increased nearly 10 per cent. by the flooding system over the furrow system. [Prof. Richman at this station found that "irrigating potatoes by flooding gave better results than irrigating between the rows."]
6. As the hilling method of cultivation is found to decrease the yield as compared with level cultivation, it is thought probable that this had as much to do with the results as did the different methods of irrigation.
7. By flooding fields of corn the same as wheat and cultivating the ground as soon as dry enough, we have reached a yield of more than ninety bushels per acre of White Flint corn, the average for five years being 46.72 bushels per acre.
8. When the flooding system is practiced, it is thought that cultivation at just the proper time is very important.

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.



When sickness runs away with you there seems to be no stopping it. You lose strength and weight and vitality and ambition. Everything seems to go at once. This is what is called "running down." It is because the blood is wrong. It lacks the building-up elements. The digestive powers are feeble and fail to get full nutrition out of the food.

There is nothing in the world so good to correct this state of affairs as Dr. Pierce's Golden Medical Discovery. It puts a new element into the blood. It fills it with the life-giving red corpuscles. It gives power to the digestive apparatus to get nutrition out of the food. It purifies, enriches and vitalizes the circulation so that every organ of the body is strengthened and built up. It tones and invigorates the nerves. It makes hard, healthy, muscular flesh. It does not make useless fat like cod liver oil. Corpulent people gain power and vitality through the "Golden Medical Discovery" without gaining any superfluous flesh.

A great deal of sickness and a great many doctors' bills might be saved to any family by keeping a copy of Dr. Pierce's great thousand-page free book "The Common Sense Medical Adviser,"



at hand. It gives valuable recipes for curing the diseases that are curable without a doctor and comprehensive information about anatomy and physiology with over three hundred illustrations. A paper-bound copy sent free on receipt of twenty-one one-cent stamps to pay the bare cost of mailing only. Address, World's Dispensary Medical Association, 663 Main Street, Buffalo, N. Y. A fine cloth-bound copy if you send ten stamps extra to pay the additional expense of this more handsome and more durable binding.

#### How Cultivation Preserves the Moisture.

That cultivation of the upper crust of the soil tends to prevent evaporation of the moisture below, is a fact that every practical farmer is well aware of. It is daily being proved in actual practice, but the scientific theory upon which this phenomenon is based is little understood. Men will tell you it is so, but why, they do not understand.

Now, it is well known that the soil is composed of innumerable and infinitely small particles. When the soil is dry each little particle is surrounded by a vacuum or air space. Whenever the particles come in contact with moisture, they have the power of attracting that moisture and of surrounding themselves with a thin film of water. The particles next to the water first draw the water around themselves, then the dry particles next to them in turn attract it, and so a continuous stream is set up, much in the same way that a wick of a lamp draws up the oil. This goes on until the whole body of soil is saturated, but as soon as the water reaches the particles on the surface of the soil, this water is evaporated, and the supply below is again drawn upon, until the water stored below is so exhausted, or left at such a depth that the distance overcomes the power of attraction, and the soil becomes completely dry. This is the process which goes on in uncultivated soil.

The object of cultivation is to break up this attraction, usually called capillary attraction, in the upper crust and so prevent the moisture from being brought to the surface and evaporated. To understand how this is done, one must take into account another scientific fact, and that is, that if these little particles in the soil be widely separated from each other they lose their power of attraction. Now, when the top crust of the soil is loosened and reduced to a fine tilth, these particles lie less closely together and do not attract moisture from below. The moisture now rises as high as the upper tilth, and there remains to a much longer extent than in the case of untilled soil, for, owing to the blanket or mulch of loose soil on the top, the soil

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For use in any place or for any purpose requiring power. Only a few minutes attention required each day. Guaranteed cost of operation is 1 cent per horse-power per hour. The simplest, most economical and best power. Address Weber Gas & Gasoline Engine Co., 459 SW. Blvd., Kansas City, Mo.



below the surface is much less exposed to the action of evaporation.

Some of our farmers here are unwilling to accept the above theory, alleging that adobe or clay soil, that has never been cultivated for years, will have more moisture below than cultivated soil. If this be so, the fact does not clash with the theory of particle attraction. On such soil the top surface has been packed down so closely that the surface is practically puddled, in which case the attractive power of the particles is destroyed. It is the same as though the surface were covered with a large rock or a board, whereby the evaporation were suspended. Every one knows that moisture may almost always be found under a large rock. The idea is to cover the soil with something that will suspend the attractive power of the soil particles and retard evaporation.

Herein lies the whole secret of why land should be cultivated after each irrigation or heavy rainfall if the farmer wishes to conserve the moisture in the soil. There is also another and very important reason why crops should be cultivated after each irrigation. The roots of plants require air quite as much as they do water, and when the soil becomes packed or plastered down by irrigation the roots do not get a full supply of air unless this surface crust is broken up.—F. C. Barker, of New Mexico, in *Irrigation Age*.

#### Home-Made Wine.

Numerous requests have been made that we republish the directions for making home-made wine, given in these columns several months ago, by Mr. A. L. Entsminger, the nurseryman and grape-grower of Silver Lake. Here they are:

"In order to make a reasonably good wine great care should be taken all the way through, and, if you can't make up your mind to do so, better not commence.

"First, make everything ready. If you intend to use a new barrel, first soak it sufficiently to take out all of the wood taste, then put in some quicklime. Now put in water sufficient to slack the lime, and roll the barrel about, so that all of the inside may be as if done with a whitewash brush. While the lime is slaking the barrel should be closed up tight. Now wash out clean, cork tight and put in the cellar for use. When you get ready to fill the barrel, take some new wine, make boiling hot, put in the barrel, cork tight, and roll about with vigor. This is what is called making the barrel wine-green. This process can all be going on while you are making other preparations. Take a tank or barrel, open at one end, of sufficient size for your purpose, which you must determine yourself, cleanse nice and clean. Now insert a faucet about two inches from the bottom, so that the must (juice of the grape) can be drawn off readily. This tank is to receive the mashed grapes for the purpose of allowing them to ferment in the pulp. Now prepare another tank precisely the same as the above. This is to receive the must for the purpose of allowing it to ferment after it comes from the press.

"Now you are ready for the grapes, which should be well ripened. It will do no harm to allow them to stand in baskets until the stems are well dried out. Now place your grapes in a tub or any other convenient vessel that will receive them for mashing. This should be done with the hands, taking care not to mash the seeds. After this place them in the tank, which I have described for the purpose; allow them to remain there about twenty-four or forty-eight hours, according to the temperature, which should not be less than 60°. When the pulp is sufficiently well broken down it will rise to the top, leaving the must at the bottom. Now draw off the must with your faucet, which I have before mentioned. Now with a good cider press, conveniently placed in readiness, place a gunny sack in the press-hoop. Now with a scoop or dipper of some kind, dip the pulp into the same and give a gentle pressing. After the pressing is complete, place the pulp back in the tub, then add about one-third as much

well water as you have drawn off must, stir well, and allow to ferment, and press as before. The must should now be placed in the second prepared barrel which I have previously spoken of. Now, dissolve two and one-half pounds of sugar for each gallon of must, taking care that the sugar is all dissolved. Granulated is the best. This is for Concord grapes. Catawba and other grapes with less acid will not require so much. This may not be quite sweet enough, but more sugar can be added. The exact amount of sugar required can only be determined by the use of an acidometer, which is a very expensive concern. Keep well skimmed off until it has apparently spent its force by fermentation. Now great care should be taken in drawing off by means of your faucet, for if you stir it up at this stage you will have cloudy wine, which you will have much trouble to get clear again, which can only be done by adding yeast and compelling it to go through another fermenting process. Now place your new wine in the tight barrel which I first described.

"Great care should be taken so as not to allow bacteria to form in your barrel. In case it should, you will have something besides wine—possibly vinegar, possibly dead wine. Both pressings should be put together in this barrel. When the barrel is full, cork tight. Now take a piece of common gas pipe, about three-eighths inch in diameter, and bend in the shape of a siphon. Now bore a hole in the barrel—which should be placed on the side—insert the longest end in the hole in the barrel, place a tumbler or earthen vessel under the other end of the siphon. Now fill the tumbler with new wine, which you have kept for the purpose. This will allow the gas to escape and prevent all danger of bursting the barrel. Now be careful; do not allow this barrel to be disturbed so as to mix the sediment with the wine. When the gas ceases to escape from the barrel through the siphon, the barrel may be corked tight. About the next June, or upon the approach of warm weather, you may expect a slight fermentation to take place again, after which your wine should be drawn off with care, your barrel cleansed nicely, and the wine returned. If you have made any miscue, so that your wine is cloudy, add some yeast, which will cause it to go through another fermenting process. This should be done before you rack off in June. If your wine has not high enough color you can add some raspberry juice, which will have the desired effect.

"Care should be taken to keep your barrel in a good, cool cellar. If you prefer to bottle you can do so now, at any time. I have kept wine made this way, both in bottles and barrels, for ten years with improvement each year. In fact, I never lost any."

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.

#### One Fare to Cleveland and Return.

For the biennial encampment of the Knights of Pythias, Uniform Rank, at Cleveland, August 28 to 30, the Nickel Plate Road will sell tickets August 22, 23 and 24 at \$8.50 for the round trip, Chicago to Cleveland and return, being \$1.50 lower than via other lines. Tickets available on all trains, returning until August 31. Further information cheerfully given on application to J. Y. Calahan, General Agent, 111 Adams street, Chicago, Ill.

#### 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.

#### Gossip About Stock.

James Mains, of Oskaloosa, Kas., reports that he has an exceptional lot of late Poland-China pigs on hand, and may, late this fall, hold a public sale. Mr. Mains is a careful and conscientious breeder that has deserved the success he has always enjoyed as a reliable breeder.

Kirkpatrick & Son, of Connors, Wyandotte county, Kansas, this week advertise a number of choice Shropshire rams for sale, also announce a grand public sale of seventy-five head of Poland-Chinas, to be held at Riverview farm, on September 29. This is to be a "toppy" sale, consisting of twenty sows bred to the great Hadley Jr., who so distinguished the Sunny Slope farm. Other sows sired by Chief I Know, Black U. S., King Perfection, Hoosier Boy 2d, also sows rich in the blood of Tecumseh. There will be a number of pigs by Hadley Jr. and Wilkes Sanders. Remember the date and send for catalogue at once.

W. S. Hanna, of Ottawa, Kas., reports the smallest pig crop for three years—not quite a hundred youngsters—but his second cross of World's Fair breeding is more satisfactory than this first cross, giving stronger constitution, limbs, wider between the ears and a very growthy hog, though all pigs are in the woods and grass and are not forced but developed naturally. Twenty-five breeders have been sold in Franklin county, one to Nebraska, three to Texas, sixty to various parts of Kansas, for 1896. He believes that, with an overloaded corn market, which will never pay cost of transportation, that corn must be packed into meat to unload it, and therefore sucking pigs are the best property a farmer can own, and it won't take farmers many months to find it out. Sows with pig will also be in demand. Cheap oats are valuable muscular pig feed and a preventive to a condition favorable to disease.

The sale of Poland-China swine at the fair grounds, Springfield, Ill., August 5, indicates that notwithstanding the hard times and that this is a political campaign year, usually dull for business, there are men who have great faith in the money-making power of the American hog. The animals sold, owned by three central Illinois breeders, were nearly all good individually and in pedigree. Some of them in these regards are considered of special excellence. The day was here the hottest of the season, but the building in which the sale was held permitting access of air from all sides, bidders were not unduly heated except it was at times in making bids. Bidding was generally lively and little time was taken in endeavoring to secure another dollar when buyers were slow in answering the call of the salesman. The animals sold were all old enough to show their quality and usefulness. The highest price was for a two-year-old sow that went to Indiana on the record-breaking bid of \$1,310, the most that was ever paid for a hog at public auction. The next highest price was for a two-year-old sow that remains in central Illinois, and the third highest was \$600 for a two-year-old sow that went to Indiana. The buyers were from Illinois, Indiana, Iowa, Mississippi, Missouri and Nebraska. The average of the sale was \$112. If the pace here set is kept up during the season, the swine breeders may well continue their claim that the hog is more profitable than anything the farmer can produce. Taking the sale as a whole, the average, though high, may not be considered unduly so, but it would seem that better bargains were had in some of the low-priced animals than will be found to be the case in the abnormally high-priced ones.

QUALITY HERD OF POLAND-CHINAS.—A herd that helps save the deserved reputation of Kansas swine at the World's Fair is the Quality herd, owned by Willis E. Gresham, Hutchinson, Kas., who, at Chicago, captured several of the great prizes awarded to swine. No breeder in the West has worked more faithfully and skillfully to develop this breed of swine than Mr. Gresham, and if there is a herd anywhere that represents quality, vigor, and finish, it is to be found in this herd. By his skillful mating and mingling of "blue blood" with individual excellence he brought his stock up to the present high standard, and is, therefore, properly called the Quality herd of Poland-China swine. As will be noticed in our advertising columns, he will hold a great combination sale of Poland-Chinas, on September 10, 1896, in connection with the Standard herd, owned by L. Nation, of Hutchinson. By referring to the sale advertisement it will be seen that, in addition to getting some grand world prize winning stock, a half interest in his famous herd boar, Darkness Quality 14361, sired by Graceful Index, who traces closely back to Seldom Seen and Tom Corwin 2d, while his dam is Darkness F. 73223, who, with her four pigs, won three prizes at the World's Fair. Another great sire in the Quality herd is Seldom 14251, a full brother to Seldom Seen, a great prize-winner at the World's Fair; his sire is Seldom Found by King Butler. In the young show herd this year is Darkness Ideal U. S.,

sired by Ideal U. S. 14350, he by Ideal Black U. S. and he by Black U. S.; his dam is Darkness F. Another famous dam in this herd is Bessie Wilkes, sired by Oxford Wilkes by Black Wilkes. Mr. Gresham is fitting up an aged and young show herd which he will show at the leading Western State fairs this year and this exhibit will undoubtedly add to the laurels of Quality herd as well as to the fame of Kansas swine interests. Kansas swine breeders will find many desirable animals in the offerings of this sale that will pay them for being present, as few breeders realize the great success in breeding that has been achieved by Mr. Gresham. It will pay all Kansas breeders to be present at this important sale. Catalogues are now ready, as advertised.

This week we advertise the joint public sale of Poland-Chinas by Bert Wise, of Reserve, Kas., and Frank Daeschner, of Preston, Neb., of which they write, as follows: "As was announced in your last week's issue, Mr. Frank Daeschner, of Preston, Neb., and myself have joined hands and intend, on Wednesday, September 2, 1896, to offer to the breeders of Kansas and adjoining States 100 head of the choicest lot of Poland-Chinas that will be offered in the West this season. We have spared neither time, labor nor money in securing the very best representatives of the different families of Poland-Chinas, and now we are going to give our fellow-breeders a chance to get some of this blood at their own prices. And as this is the last chance to get pigs the direct produce of that grand old hog, Butler's Darkness 6846 S., who was overcome with the heat a short time since, we deem it but good business policy on the part of all breeders to attend this sale. While Butler's Darkness produced an average number of choice males, many of them being prize-winners, yet, as a producer of females, he stood without a peer. The pigs sired by him which go in this sale are strictly grand. Although \$200 was paid for Butler's Darkness two years ago, Mr. Wise considers him the cheapest animal he ever bought. Mr. Daeschner has a son of Butler's Darkness at the head of his herd, assisted by a son of Mr. Wise's great brood sow, Lizer's Nemo. As Mr. Daeschner has bought almost the entire foundation of his herd of Mr. Wise, the two herds, as will be the offering, are almost identical in breeding. For full particulars as to terms, pedigrees, etc., we request all interested to send for a catalogue, which also contains historical information of value to every breeder who now breeds or expects to breed Poland-China hogs."

#### 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., Topeka, Kas.  
JOHN SEBASTIAN, G. P. A., Chicago.

#### 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.

#### 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.

## The Home Circle.

### CONTENTMENT.

When discontent knocks at the heart,  
Oh, do not let him in;  
But stop and count your blessings o'er,  
Sweet happiness to win.  
Perchance your lot a hard one is,  
But think a moment, do!  
And very likely you'll recall  
Those much worse off than you.

Perhaps the cup of sorrow you  
Have tasted and are sad;  
Go taste some other's cup of joy,  
"Twill cheer you and make glad.  
Perchance your life is filled with toil,  
Then you've no time to mope,  
And gather "cobwebs" in the brain  
To shut out light and hope.

Or if you have the "cobwebs" there,  
Go take another's broom  
And "lend a hand," and cheer a heart,  
And so sweep off the gloom.  
Forget yourself in others' joys,  
And in another's woe,  
Give smiles for smiles, and tear for tear;  
And find contentment so. —M. E. T.

### HE IS JUST AWAY.

I cannot say, and I will not say  
That he is dead—he is just away.

With a cheery smile and a wave of the hand  
He has wandered into an unknown land,

And left us dreaming how very fair  
It needs must be, since he lingers there,

And you—oh, you—who the wildest yearn  
For the old-time step and the glad return—

Think of him as faring on, as dear  
In the love of there as the love of here.

Mild and gentle, as he was brave  
When the sweetest love of his life he gave

To simpler things: Where the violets grew,  
Pure as the eyes they were likened to,

The touches of his hands have stayed  
As reverently as the lips have prayed;

When the little brown thrush that harshly  
Chirped

Was dear to him as the mocking bird;

And he pined as much as a man in pain  
A writhing honey bee wet with rain.

Think of him still the same, I say;  
He is not dead—he is just away.

—James Whitcomb Riley.

### IMPROVING NATURE.

#### A Fanciful Art Which Originated Among the French.

An authority tells us a few of the secrets of the production of color in flowers and fruit, and we mention them here for the benefit of many who wish to try such a curious experiment for themselves. It is said that to color flowers through the stalks it is necessary to put five grammes (one gramme is equal to 15 grains) of any coloring matter into a vessel which will hold about ten grammes, to bruise the tip of the cut stalk with a light tap with a hammer, and then to put the stalk into the vase for a longer or shorter time, according to the depth of the coloring required. Two hours after this contact with the dye the tinting of the flower is accomplished. On taking the blossom from the vase it is advisable to cut off the bruised part of the stalk and soak the flower for an hour or two in a vase of clear water. To tint white bulbous plants, fill a vase with 50 grammes of clear water, stir the mixture up well, then, after slicing the bulb with a pen-knife in one or two places and cutting off the tips of the roots, leave it steeping in the tincture until the flowers begin to color. Then replace it in the pot, covering it with a little moist earth, and the flowers will finish coloring there. Fruits, as well as flowers, can be artificially colored, and sometimes this is done for the purpose of adulteration, as, for instance, when plums are too green they are coated with acetate of copper and sulphate of copper.

When too pale, lemons are tinted up with citrine and "naphthol yellow," the green spots being imitated with "diamond green." Strawberries are colored by sprinkling them with "sulfo-fuchsin" or "rhodomine." Peaches receive a beautiful coloring from a mixture of "rhodomine" and "citronine," applied with a brush, using a zinc stencil plate pierced with holes. In melons a tube is introduced through which "atropeoline" and "orange azo," with a little essence of melon, is put into the center. Very pretty varieties of apples and pears are contrived by using a little aniline dye. These devices may make bad fruit salable, but are not examples to be copied, unless for the sake of making a curious experiment. —Home Queen.

Whiskers that are prematurely gray or faded should be colored to prevent the look of age, and Buckingham's Dye excels all others in coloring brown or black.

### QUEEN IN BLOOMERS.

#### They Have Been Part of Siamese Feminine Apparel for Ages.

Pictures of the queen of Siam in her national costume are not only interesting as showing the Siamese fashions but also from the fact that they clearly demonstrate that the new woman in America and England is not the originator of the much derided and caricatured bloomer costume brought into such prominence lately, thanks to the bicycle fad. That Dr. Mary Walker has been looked upon so long as the "father" (?) of reform in women's dress but carries out the old adage: "There is nothing new under the sun." At least we can so judge of Siam's fashions, which are not so changeable as our own. The bloomer costume has been worn there for ages.

The manner in which their picture came to be taken is original, and due to the ingenuity of a Yankee and a camera fiend. Such a picture is a rarity, as a Siamese woman, and especially one of high degree, is never seen by a foreigner, and, moreover, a male. But the incident happened as follows, and, thanks to the alertness of our countryman, we have before us an authentic picture of the second queen of Siam, as she really looked standing on the wharf at Singapore:

The steamship Saghalien, running between Chinese ports and Marseilles, was already to start on her trip. The returning European passengers were anxiously questioning the officers in charge as to the cause of the delay, for the boat was some two hours behind her scheduled time for starting, and the probability of having to lie alongside the dock all night was a very serious consideration. Their impatience was soon changed to curiosity when they were



THE QUEEN OF SIAM.

told that the steamer was waiting for the special train bringing the sons, nephews and brother of the king of Siam, and also the arrival of the royal yacht having the king and his favorite wife on board.

Finally the train steamed into the station and the royal party disembarked. It consisted of several members of the royal family, notably the young princes Chakrabongse, Bovanarth and Ben Badhanabongse, the king's sons who were in charge of their uncle, who had with him his own son and two of the king's nephews.

The princes were accompanied by two aides-de-camp, a secretary and two English professors. Their suite was composed besides of five young Siamese noblemen, and who, like the young princes, were going to be educated. These nobles and princes were bound for England, where they were to pass five years in order to complete their education. The whole party spoke very fluent English, which they had been taught from their earliest infancy.

The party had hardly settled on board before the royal yacht was seen steaming down the river. Chulalong Kcm had made the trip especially to inspect the steamer, which was a new one on the line, and, as the queen was sending her only son to England, had consented to the unprecedented proceeding of allowing her to accompany him and bid her son farewell.

The scene on the quay was a curious one. In the presence of the agent des messageries, acting as French consul, and the commandant of the royal yacht,

Commodore Richelieu — a Siamese whose essentially French name set all the genealogists agog—the king, in a very light spring suit, carefully examined all the newest facilities for loading and unloading the vessel. Standing beside her august husband the queen, utterly oblivious to the onlookers, abandoned herself to a very natural outburst of motherly sorrow at parting from her son, and it was at this very moment that the snap shot was taken.

Though the spectators were undoubtedly touched by her maternal sorrow, still the feeling uppermost in all their minds must have been that caused by the strangeness and oddity of her attire. Thanks to the kodak, we can form a very fair idea of this old-fashioned style of bloomers. These classical trousers called "Sampat" are made of a very large piece of silken stuff most ingeniously draped to form a perfect semblance in front of the up to date bicycle costume favored by the new woman. Over these is worn a white camisole or species of chemise, which was crossed by the cord of some royal order, outlining, but not beautifying, the oriental form of the Siamese queen. I really do not think the photographed resemblance of her majesty will be apt to awaken many envious feelings in the breasts of her western sisters or do much toward the universal adoption of bloomers. —N. Y. Herald.

### SHAMPOOING THE FACE.

#### Process Said to Be Soothing and Beneficial to Complexion.

Did you ever try a face shampoo? If not, try it once, and you will not stop with the one trial. After a morning of hard shopping, when everything has gone wrong, or after a wearisome day with the children, go to your room, wash your face in the hottest water that can be borne, with a sponge rubbed with a little glycerine and pure castile soap. When the face is in a fine, soft lather, rub with almond-meal until dry; bathe with clear hot water until all the soap and meal have been removed, after which use cold water until the face feels cold and the flesh firm. Dry gently, and with a soft linen cloth moistened in cologne rub the eyebrows and all about the roots of the hair. A dash of rice-powder takes off the shine and does no harm.

By this time you are ready for a flannel negligee and slippers; then take a cup of hot tea with lemon in it, tuck yourself snugly away beneath a down coverlid, and give yourself up to quiet sleep or pleasant day-dreams; and when you come back again to earth all will have a rosy hue and you will love even your worst enemy. —Chicago Tribune.

### Marriages That Are Always Happy.

With true marriage there is no doubt and no difficulty. The parties to it may be as far as the east and the west asunder, but when the hour strikes for their meeting the whole circumference of the world will not keep them apart. Some happy accident—for we all call God's part in the affair an "accident"—will bring them face to face, and as soon as they meet they look, they love, and then tell each other the reason why. Such marriages are always happy. They may not be always prosperous, but they are happy. Poverty does not kill this love, personal faults make it more patient, sickness more tender, death more pure and enduring. Whatever is predestinated is good and right, and these marriages arranged by a prescient love and wisdom—though not without the sorrows incident to the condition—have the strength of the predestined. They bring forth love and joy, united hopes and double happiness. —Amelia Barr, in Congregationalist.

### If You Spill Ink on the Carpet.

When you spill ink upon the carpet, or upon a woolen tablecloth, immediately sprinkle over it a thick layer of common salt, and when this has absorbed all the ink that it can, carefully scrape it off and apply some more, and keep at it until the stain disappears.

### Roses in Cake Baskets.

Roses look particularly well in silver, and a very good use may be made of a low antique silver cake basket by filling it with a glass that will hold an abundance of water, and putting your roses in that. Tie a bunch of roses to the handle with ribbons or grasses, and you will have a beautiful decoration for a dinner table.

### How to Keep Ice Water.

The following simple method of keeping ice water in a common pitcher is worth knowing: Put a layer of cotton batting between two sheets of wrapping paper three inches higher than the pitcher. Fasten the ends of the paper and batting together, forming a circle. Paste a cover over one end of the batting and paper. This cover, when over a pitcher, must come close to the stand and so exclude the air, and ice will keep for a long time. This paper cover will be found of great service in a sick room for both milk and water pitchers.

### How to Roll an Umbrella.

Everybody knows that it is a fine art to roll an umbrella correctly. It is a manly art, if one has to judge by the beautiful condescension with which a man offers sometimes, in an excess of generosity, to roll a woman's umbrella for her. For the benefit of those benighted ones who have never yet mastered this art, it may be well to give the following formula: The right and only way is to take hold of the ends of the ribs and the stick with the same hand, then hold them tightly together to prevent their twisting while the covering is being twirled around with the other hand.

### Light in the Sick Room.

An experienced physician says there is nothing more gloomy and depressing to the spirits of a patient than dark sick rooms. If the light hurts the patient's eyes, let him be shielded from it by a screen or curtain, but admit the sunlight as freely as possible to the rest of the room. Shield the lamp or gaslight with a shade, but let the light be kept up while the patient is awake. In short, everything must be done that can be to maintain a cheerful and neat appearance in all that belongs to the surrounding of the invalid.

### White Skirts of Hair Cloth.

With the return to favor of the stiff, white shirt the laundry bills are revelations. Many women prefer, not so much from economy as from the real liking for them, the white haircloth petticoats made to wear with any indoor frock. The material is stiff as anything in the market. It is cut so as to fit the hips like a glove, the fullness caught in a great bunch at the center of the back, from which it flares in the most aggressive fashion. The foot may be trimmed in all sorts of pretty and fanciful ways. Among the smartest are frills of the haircloth covered thickly with tiny frills of Valenciennes lace, set close together so as to overlap. Of course, these skirts do not launder, and so may be treated to any sort of fantastic decoration.

The hair, when not properly cared for, loses its lustre, becomes crisp, harsh, and dry, and falls out freely with every combing. To prevent this the best dressing in the market is Ayer's Hair Vigor. It imparts that silky gloss so essential to perfect beauty.

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

**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 & SAVE DEALER'S PROFITS. OXFORD BROS. CO., 240 Wabash Ave., CHICAGO.

**ORGANS FREE** on trial. High-grade, popular priced Organs, such as never were offered before. Unequalled for sweetness of tone and beauty of design. We have a large assortment at lowest prices. Send for Our Mammoth Catalogue. **H. R. EAGLE & CO.,** 68 and 70 Wabash Ave., Chicago, Ill.

## DISEASES

of the Liver, Kidneys and Bladder are quickly relieved and permanently cured by using

**Dr. J. H. McLEAN'S  
LIVER AND KIDNEY  
BALM**

For sale at Druggists. Price, \$1.00 per bottle

**THE DR. J. H. McLEAN MEDICINE CO.  
ST. LOUIS, MO.**

## The Young Folks.

### ONE WAY TO GROW.

What's the use, I'd like to know,  
Of a boy who is quiet and prim;  
If a boy must mind his p's and q's  
He'd ought to be her instead of a him.

It's the girls that should sit still and straight,  
That's what they're made for, don't you know;  
While boys must jump and shout and race—  
It's noise and fun that makes us grow.

They say, "You're like your mother, Bob,"  
But that's a great mistake, you see,  
For she likes gentle, quiet boys,  
While I—why I like boys like me.

The more we fellows shout and jump,  
The more we race and tear and climb,  
The bigger men we'll grow to be—  
If you will only give us time.

—Home Queen.

### WHAT ARE YOU GOING TO DO?

What are you going to do, boys,  
With the years that are hurrying on?  
Do you mean to begin life's purpose to win  
In the strength-giving dew of the dawn?  
The toiler who builds in the morning,  
At even may joyfully rest,  
His victory won, as he watches the sun  
Go down in the beautiful west.

What are you going to do, girls,  
With time as it ceaselessly flows?  
Are you molding a heart that joys will im-  
part  
As perfume exhales from the rose?  
Let things that are purest and grandest  
In memory's wreath be entwined.  
There is no other grace can life's shadows  
efface,  
Like the charm of a beautiful mind.

—Nixon Waterman.

### SUCCUMBED TO GRIEF.

Horse Separated from His Mate Died in a Short Time.

The emotional life of a horse is remarkable. There are instances on record where the death of the horse has been traced directly to grief. One instance is called to mind, which occurred more than 20 years ago. A circus had been performing in the little town of Unionville, Pa., when one of the trained horses sprained one of his legs so that he could not travel. He was taken to the hotel and put in a box stall. The leg was bandaged, and he was made as comfortable as possible.

He ate his food, and was apparently contented until about midnight, when the circus began moving out of town. Then he became restless, and tramped and whined. As the caravan moved past the hotel he seemed to realize that he was being deserted, and his anxiety and distress became pitiful. He would stand with his ears pricked in an attitude of intense listening, and then as his ear caught the sounds of the retreating wagons he would rush, as best he could with his injured leg, from one side of the stall to the other, pushing at the door with his nose and making every effort to escape. The stableman, who was a stranger to him, tried to soothe him, but to no purpose. He would not be comforted.

Long after all sounds of the circus had ceased his agitation continued. The sweat poured from him in streams and he quivered in every part of his body. Finally the stableman went to the house, woke up the proprietor and told him he believed the horse would die if some of the circus horses were not brought back to keep him company. At about daylight the proprietor mounted a horse and rode after the circus. He overtook it ten or twelve miles away, and the groom who had charge of the injured horse returned with him. When they reached the stable the horse was dead.

The stableman said that he remained for nearly an hour perfectly still and with every sense apparently strained to the utmost tension, and then, without making a sign, fell and died with scarcely a struggle. The veterinarian who was recalled remarked after the circumstances were told him that unquestionably the horse died from grief. If it is possible for all the mental faculties of the horse to become abandoned to grief to such an extent as to cause death, how much more does he appeal to the sympathy and regard of mankind.—Kentucky Stock Farm.

An American naval officer, wishing to bathe in a Ceylon river, asked a native to show him a place where there were no alligators. The native took him to a pool close to the estuary. The officer enjoyed his dip. While drying himself he asked his guide why there were never any alligators in that pool. "Because, sah," the Cingalese replied, "they plenty 'fraid of shark!'"

### CATCHING A SWORDFISH.

A Task Requiring Considerable Courage and Much Experience.

In the pursuit of the swordfish the hunter of the sea finds his greatest excitement. There is no slow and careful baiting and patient waiting. The game is seen—a sharp fin cutting the surface of the water—and a chase that often ends in a terrible struggle is begun, for a wounded swordfish often fights fiercely, thrusting its two-edged spear straight through a boat and sometimes stabbing his pursuers.

But a fisherman who has once tried the sport never tires of it or of its excitements.

Not long ago a party set out from Cape May in a little sloop. It was a calm, sunny day, and the man in the cross-trees swept the sea to catch a glimpse of the white bit of foam that would show where a swordfish swam.

For an hour the sloop skimmed lightly along.

"Hey-o," came suddenly from the man in the rigging.

"Where away?" sung out the skipper from his place at the wheel.

"Off the weather bow."

In a moment all eyes were watching a glistening fin that cut the water ahead.

The mate ran to the bow and took his place in the "pulpit," and, seizing the steel harpoon, stood ready for the game.

For a few minutes the vessel and the soldier of the sea ran silently and swiftly. The skipper gradually drew the bow around until the huge fish was close alongside.

Then came the supreme moment.

As the little vessel shot into the wind the mate raised his harpoon and leaped forward from the pulpit. Every eye was upon him. For a moment the steel flashed, and then, with a crashing sound, it entered the back of the fish.

"Stand clear of the line!" shouted the mate, as he sprang to the deck.

The warning was well heeded, for the rope was running over the vessel's side with the sound of a rip saw. The swordfish was in flight. When the last yard spun out the mate tossed overboard



THE MATE RAISED HIS HARPOON.

the keg, to which the rope was fastened, and away it went, followed by a wave of foam and spray.

A moment later the dory, loaded with fishermen, pushed its nose into the sea, and after a spirited race reached the flying keg and pulled it aboard. The half-exhausted fish felt the strain, and the next instant the dory was rushing along—a swordfish express.

Slowly the rope was hauled in, the prey being given plenty of opportunity to spurt and wear himself out. Presently the sharp fin was seen close at hand, and with a rush the great fish was laid alongside.

Hauled partly out of water by the rope, the fish gave a sudden plunge with his weapon. Crash it went through the side of the boat, and the men within rolled over and let go the rope. There was a sudden plunge and a heavy jar. The infuriated fish had thrust his sword through the bottom of the boat, narrowly missing an oarsman's leg.

"To the rope," shouted the bowman, and instantly every man braced himself

and pulled while the water gushed through a hole in the boat.

A few moments more of terrific struggle and the huge fish was brought alongside. Without giving him another chance to strike, the bowman lifted an oar and a violent blow on the head killed the fierce fish.

Luckily the sloop came alongside just as the dory grew dangerously full of water, and the daring fishermen climbed aboard. The fish measured ten feet and two inches in length.—Chicago Record.

### BLIND BOYS PLAY BALL.

Their Game Differs in Many Details from the Regular One.

Prof. R. B. Huntoon, of the Kentucky school, describing baseball among the blind, says: The baseball game differs, of course, in many of its details from the regular games. The diamond is not of regulation size, but it is of regulation form. The distance between bases is but 40 feet. The fielders are stationed the same as in the National league game, with the exception that there is a right shortstop, thus making ten men to a side. In the outfield, in public games, there is an unlimited number of players, each taking a turn at the bat, first moving up one position whenever a batsman is put out.

The catcher sits on the ground, well back from the home plate, and, to guard against injury, he wears a mask and a chest protector. His position is such that when a pitcher delivers a ball it strikes the ground just between the knees and is taken on the short bound.

The batsman takes his position at the plate with a heavy flat bat, somewhat like those used in cricket. The umpire, who must be a man of unimpaired vision, calls upon the pitcher to get ready, and then clearly sings out: "One, two, three!" At the word three the pitcher must loyally deliver the ball. He pitches in the slow, underhand way peculiar to the game 25 or 30 years ago, the idea being to deliver a ball that can be hit by the batsman, who, standing there in the darkness, with a sharpened sense of hearing and a wonderful conception of the time that must elapse before the ball reaches him, is prepared to strike.

If the batsman should miss the ball bounces into the catcher's lap, and is returned to the pitcher by a single toss with a precision that is wonderful. When the ball is batted the umpire calls out quickly to the fielder in whose direction it is traveling, and he, guided by a sense of hearing, either catches the ball or follows it in its course through the grass. Six strikes are an out. In fielding any number of bounds are permitted. If the batted ball is a "hot liner" and traveling straight for an infielder's head, the umpire shouts a warning, and in such cases the player ducks or falls to the turf.

It is possible, in fact the ball is frequently fielded to first in time to put out the runner. When throwing to first the assisting player, who is guided by the voice of the batsman, calculates the distance with nicety and throws the ball so that it strikes the ground a few yards in front of the batsman. The latter hears it coming and usually gets it without further assistance. Running bases was formerly a difficult thing. There were then three trees on the diamond, toward which the runner ran with outstretched hands. Bags have since been substituted for bases, and the runner is guided by the voice of the batsman, who is required to shout "First, first, first!" In like manner the other bags are won. Once on a base the runner is pretty sure to get home, unless his side dies at the home plate. Six outs put a side out.—Boston Transcript.

### Finger-Nail Statistics.

The statistical man, who will tell you how many pounds of leather you will wear from your shoes in a lifetime, and how many tons of food you will eat, provided that you live to the Biblical limit of "threescore and ten," has just finished some odd statistics on finger-nail growth. He finds that the average human being cuts away about the one-thirty-second part of an inch of nail each week, or a little more than an inch and a half each year. He also finds that the average length of life the world over is 40 years, and that there are 1,300,000,000 miles of finger nails in each generation.

### Jay That Lighted Matches.

A dangerous acquirement of a pet blue jay is told about in the American Naturalist by James Newton Basket, of Mexico, Mo. The blue jay referred to somehow learned that parlor, or popping matches, would make a delightful sputter and flame if properly manipulated. The bird was in the habit of beating much of its food against some hard substance, perhaps for the purpose of breaking or softening it. It probably treated one of the parlor matches in this way one day, and so learned that they made a noise. When a match was given to it it would hop on a chair round and strike the fulminate against the wood, end on, repeating it rapidly till the head was ignited; then it would throw it away and watch the flame.

### Peculiar Election Custom.

There is a strange custom attendant upon local elections, which has existed in Brown township, Delaware county, O., for the last 30 years. It is that of eating 40 dozen hard-boiled eggs on election night at the expense of the successful candidates. Neither the bill of fare nor the number of eggs is ever varied. When the count is finished, a committee having been selected to secure the eggs and boil them, they are passed around and everybody eats in the utmost good fellowship. Only one man ever dared to brave popular sentiment, and refused to pay his share of the expense. He had been elected by a large majority, but was defeated at the next election for no other reason than his want of respect for the custom. No one knows how the custom originated.

### A Dog with a Wooden Leg.

Did you ever hear of a dog having a wooden leg? asks a writer in the New Unity. I know a man near where I live who had a small dog, one of whose front legs was crushed by a wagon wheel. Being somewhat of a surgeon his master carefully amputated the crushed leg; and when the wound had healed provided the dog with a light and strong wooden leg. In the course of time the little dog, which is a very intelligent animal, became aware that he could rest his weight upon the wooden leg and use it for all ordinary purposes. In walking or trotting the dog always uses his artificial limb, but if he has occasion to do any fast running or leaping he will gracefully hold up the wooden leg and depend solely upon the other three for the service required.

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The Populist State convention nominated a ticket composed of men who hold the most pronounced views of the party.

The Kansas Republican State convention nominated the present incumbents with the exception of Chief Justice and Lieutenant Governor.

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 political battle in Kansas this year on the State ticket will be waged between those who favor the continuance of the present regime and those who favor the reforms proposed by their opponents. Neither party took a middle ground.

Prof. C. C. Georgeson has just published Kansas Experiment Station Bulletin No. 59, being an account of experiments with wheat. The bulletin is timely at this, the season of preparation for next year's wheat crop. It comes too late for extended excerpts in this week's KANSAS FARMER.

State platforms count for but little in a Presidential election year. The national platforms overshadow them. In nominating Judge Foster, for Chief Justice, the Populists plant themselves upon the most radical doctrines of their party, while in turning down Judge Martin the Republicans take themselves entirely off from middle ground.

Could Chief Justice Martin, of the Kansas Supreme court, have been his own successor a great majority of the people of Kansas, without regard to party, would have been gratified and the great office which he so ably fills would have been held above the reach of suspicion of being susceptible of partisan influence or of being fashioned by other motives than those of law, justice, humanity and equity.

A. B. Hope, of Clearwater, Sedgwick county, says that farmers in his section are every year farming a little better than formerly. In preparing for wheat it has become a maxim to put as much work as possible on the land before sowing. The plowing is done soon after harvest and the ground is broken to a depth of five inches. It is then harrowed repeatedly to retain the moisture and to prevent the growth of weeds or grass until sowing time. This practice is in exact harmony with the best theories on the subject. Indeed, the best and most successful farmers in Kansas are foremost in the consideration of the teachings of science as applied to their industry.

## YEARLY AVERAGE EXPORT PRICES OF LEADING PRODUCTS.

The Cincinnati Price Current of August 13 makes a compilation showing the variation in yearly average export values of fourteen staple domestic products (on currency basis) for twenty-five years ending June 30, 1896, from statistics of the Treasury Department. These are all agricultural products, to some of which added value has been given by processes of manufacture:

Export prices, fourteen products, twenty-five years.

Year ending June 30.	Corn, per bushel	Wheat, per bushel	Wheat flour, per barrel	Cotton (including seed), per pound	Lard, per pound	Mineral oil, refined, per gallon	Bacon and hams, per pound	Pork, salted, per pound	Beef, salted, per pound	Butter, per pound	Cheese, per pound	Sugar, refined, per pound	Tobacco, leaf, per pound
1871.....	75.9	131.6	6.50	14.9	25.3	25.7	11.4	13.2	10.9	8.7	21.5	13.7	13.2
1872.....	69.5	147.9	7.11	19.4	23.7	24.9	8.6	10.1	7.2	7.0	19.4	11.7	12.6
1873.....	61.8	131.2	7.57	18.9	23.5	23.5	8.8	9.2	7.8	7.7	21.1	13.1	11.6
1874.....	71.9	142.8	7.14	15.6	25.2	17.3	9.6	9.4	8.2	8.2	25.0	13.1	10.5
1875.....	84.8	112.4	5.97	15.1	26.0	14.1	11.4	13.8	10.1	8.7	23.7	13.5	10.8
1876.....	67.2	124.2	6.22	12.9	26.2	14.0	12.1	13.3	10.6	8.7	23.9	13.6	11.6
1877.....	58.7	116.9	6.49	11.8	23.9	21.1	10.8	10.9	9.0	7.5	20.6	11.4	10.2
1878.....	56.2	133.8	6.36	11.2	21.8	14.4	8.7	8.8	6.8	7.7	18.0	11.1	10.2
1879.....	47.1	106.8	5.25	10.0	20.4	10.8	6.9	7.0	5.7	6.3	14.2	8.9	8.5
1880.....	54.3	124.5	5.88	11.6	23.3	8.6	6.7	7.4	6.1	6.4	17.1	9.5	9.0
1881.....	55.2	111.4	5.67	11.3	22.6	10.3	8.2	9.3	7.7	6.5	19.8	11.1	9.2
1882.....	66.8	118.5	6.15	11.5	20.9	9.1	9.9	11.6	9.0	8.5	19.3	11.0	9.7
1883.....	68.4	112.7	5.96	10.9	21.1	8.8	11.2	11.9	9.9	8.9	18.6	11.2	9.2
1884.....	61.1	106.6	5.59	10.6	20.6	9.2	10.2	9.5	7.9	7.6	18.2	10.3	7.1
1885.....	54.0	86.2	4.90	10.7	19.8	8.7	9.2	7.9	7.2	7.5	16.8	9.3	6.4
1886.....	49.8	87.0	4.70	10.0	19.9	8.7	7.5	6.9	5.9	6.0	15.6	8.3	6.7
1887.....	47.9	88.9	4.51	9.5	18.7	7.8	7.9	7.1	6.6	5.4	15.8	9.3	6.0
1888.....	55.0	85.3	4.58	9.8	17.3	7.9	8.6	7.7	7.4	5.3	18.3	9.9	6.3
1889.....	47.4	89.7	4.83	9.9	16.6	7.8	8.6	8.6	7.4	5.5	16.5	9.3	7.6
1890.....	41.8	83.0	4.66	10.1	16.0	7.4	7.7	7.1	6.0	5.4	14.4	9.0	7.0
1891.....	57.4	93.0	4.82	10.0	16.4	7.4	7.6	6.9	5.9	5.6	14.5	9.0	5.7
1892.....	55.0	103.0	4.96	8.7	16.0	5.9	8.1	7.2	6.0	5.7	16.0	9.4	4.6
1893.....	53.4	79.9	4.54	8.5	15.5	4.9	9.6	9.5	7.8	5.4	18.7	9.4	4.7
1894.....	46.2	67.2	4.11	7.8	15.1	4.7	9.6	8.9	8.0	5.7	17.6	9.7	4.4
1895.....	52.9	57.5	3.38	5.8	15.2	5.4	8.7	7.7	7.1	5.7	16.3	9.1	4.8
1896.....	37.8	65.5	3.56	8.1	17.9	7.2	8.3	6.6	5.7	5.6	15.2	8.4	4.9

The journal here quoted gives no reason for selecting these specific products, but they are probably fairly representative. It will be noticed that in every one there has been a decline in prices which for the entire time is a severe one.

To be able to the more readily see what the average decline in export prices has been, the KANSAS FARMER has summarized them. This is done by adding the unit prices\* of the several articles for each year and dividing each of the several sums so obtained by fourteen. This summary is shown in the following table in the second column, and is still further simplified by reducing to percentages of the mean of 1871, as shown in the last column of the summary:

Summary of export prices of fourteen products for twenty-five years.

Year	Means, fourteen products.	Percentages.
1871.....	27.27	100
1872.....	27.06	99
1873.....	26.20	96
1874.....	28.47	104
1875.....	25.83	95
1876.....	25.22	92
1877.....	23.66	87
1878.....	23.15	85
1879.....	18.97	70
1880.....	21.29	78
1881.....	21.18	78
1882.....	22.98	84
1883.....	22.65	83
1884.....	21.70	80
1885.....	18.47	68
1886.....	17.61	65
1887.....	17.44	64
1888.....	17.97	66
1889.....	17.75	65
1890.....	16.30	60
1891.....	18.04	66
1892.....	18.50	68
1893.....	16.48	60
1894.....	15.58	57
1895.....	14.86	54
1896.....	14.52	53

Every person who lives by buying and selling; every dealer in grain or live stock; every merchant, knows how hard it is to avoid losses when trading on a falling market. But the merchant, the grain dealer, the live stock dealer, the buyers and sellers in general, invest their money but a few days, or at most but a few weeks, before they realize their returns. The farmer, however, makes his investment in his crops several months—often a year—before he can realize. A falling market has, therefore, several chances to catch him to one at the mere buyer and seller.

The cost of a crop to the farmer in-

\*An exception was made in the case of wheat flour, the barrel unit for which would have given that article too great an influence in the summary. The prices of wheat flour have been, on this account, divided by 100. No doubt some of the other articles have too great an influence to correspond with the amounts exported; but the general result is probably substantially correct.

cludes many items, some of which are seed and labor, use of machinery and horses, depreciation of buildings and fences, interest on investment, etc. The demagogue often claims that the farmer's own work should not be included in the cost; that the work of his horses costs him nothing, because he owns the horses. A fair consideration of the subject must take these into account. The farmer's labor is an actual expense, which he pays for the maintenance of himself and family.

One reported, as to farming land, a shrinkage of 48 per cent. in value in twenty-five years. The other reported a shrinkage of 50 per cent. in the same period. By the summary table above it appears that the 47 per cent. shrinkage in prices of products in twenty-five years nearly corresponds with the shrinkage in farm values in New York State for an equal period.

It is scarcely necessary, in view of the long-continued and great reduction in the value of productions, to inquire why farming land declines in price or why the farmer—the average farmer—is not prosperous. Producing for a continually falling market the average farmer comes out more in debt, year by year, is sold out, becomes a renter, then a laborer, to contend with the ever-increasing army of the unemployed for the chance to earn a living working for some one else.

The heat of the last week killed 512 people in seven days in New York city.

## Advice as to Broomcorn.

We wish to give the broomcorn-growers a few hints in regard to putting up their corn for the market.

The corn should be well seeded and at the same time they should avoid scraping the small fibers from the tips. Let the corn thoroughly cure before baling and butt it down well before laying in the press; this will make nice, smooth ends and give the bales a good appearance. Corn is frequently received with the bales broken in two when the corn is short. In order to avoid this, when laying the short corn in the press there should be layers put in the center of the bales for binders to hold the corn together and this will make good, solid bales. Care should be taken not to put rubbish or scrapings from the cylinder in the center of the bales, as this is worthless and a total loss to broom-makers. There are always a few who resort to this practice and it is injuring the reputation of all the Western growers. We do not see why the Western farmers should not realize as good prices for their corn as the Illinois farmers, providing the brush is well handled and of as good quality. The last few years the quality of their corn has not been up to the standard and we trust that this year they will have a fine quality of brush, which will bring the West to the front again.

J. P. Gross & Co.,  
249-251 Kinzie St., Chicago, Ill.

## 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, Iola; September 8-12.  
Anderson County Fair Association—George Patton, Secretary, Garnett; September 1-4.  
Brown County Exposition Association—E. Hoyer, Secretary, Hiawatha; September 15-19.  
Chase County Agricultural Association—H. P. Gillett, Secretary, Cottonwood Falls; September 15-18.  
Cloud County—Concordia Fair Association—Homer Kennett, Secretary, Concordia; September 20-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—Chas. H. Ridgway, Secretary, Ottawa; September 22-26.  
Greeley County Horticultural and Fair Association—L. E. 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. C. 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. C. 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.

Some months ago the New York Society for the Improvement of the Condition of the Poor appointed two competent men to inquire into the extent of agricultural depression in the Empire State. These divided the field and pursued the inquiry separately.

## Weekly Weather-Crop Bulletin.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending August 17, 1896, prepared by T. B. Jennings, Section Director:

## GENERAL CONDITIONS.

A hot week, the temperature averaging 7° above normal over the State for the week, with hot winds on several days. The rainfall was above normal from Kearney to Rooks and from the southern part of Washington southward to and through Miami; between these two areas light rains occurred, with no rain in the southern counties.

## RESULTS.

## EASTERN DIVISION.

Three weeks of dry weather and two weeks of excessive heat have very materially injured late corn and gardens, rapidly ripened the hay crop and shortened pastures and stock water. The early corn is beyond danger from early frosts, is matured, and in places is being shocked. Haying has been pushed and at close of week largely finished, also threshing. Late corn is not injured as badly in the field as along the edges.

Allen county.—All green matter is drying from the twenty-two days' drought; grass is cured standing, and in many places will burn readily; early corn is made, medium cut short some, while late has suffered severely and must be cut at once to be of value; all crops are ripening and are out of the way of any early frost.

Brown.—Corn will yield well, nearly all of it will be safe from frost September 1, no damage by hot winds; wheat a heavy crop; oats damaged by rust, only a good half crop; hay plentiful, pastures good; stock of all kinds in fine condition.

Chautauqua.—Hot and dry, no rain

damaged; late potatoes destroyed by web-worm; wild grass holding on well.

Morris.—Another dry, hot week; early corn injured, late corn badly so.

Osage.—Another hot, dry week, with hot winds; late corn badly damaged, most of early corn out of danger; corn-cutting commenced in localities; pastures in poor condition; fruit falling badly.

Pottawatomie.—All crops doing well; early ninety-day corn matured; third crop alfalfa blooming; plowing for wheat nearly done.

Riley.—The week has been very hard on vegetation, the week closing with hot winds.

Shawnee.—Tuesday night's rain refreshed everything and saved most of the early corn.

Wilson.—A dry, hot week; hot winds several days this week; early corn is matured, late corn may be injured some; pastures are drying up very fast—stock water, too; good week for haying.

Woodson.—Hot, dry week; corn drying up fast and cutting begun; corn planted after the hail will make good fodder; haying about over; stock water getting low; threshing about done; apples dropping badly.

## MIDDLE DIVISION.

The week of torrid weather has ripened all crops very rapidly in the southern counties, and those too green to ripen were dried up. In the northern counties crops are in excellent condition. Early corn has matured and is beyond danger, and the corn harvest has begun in many counties. Haying is in progress and a large crop of fine hay is being secured.

Barber.—Excessively hot, intensely dry, and very unfavorable for late corn; range dried up but cattle doing well.

Barton.—Hot winds on four days finished the corn; Kaffir corn is suffer-

danger from frost, that in west portion of county is very good, but in north and east portions it is badly damaged; hay of all kinds very light.

Pratt.—Early corn made, late corn is cut short by dry weather and hot wind to such an extent that early frost could do no further damage; garden truck universally dried up; Kaffir and cane maturing rapidly and being cut; some grass being cut on low land, that on high land drying up; hot, dry, dusty, windy week.

Reno.—The torrid week has reduced the corn crop badly; no such week of heat on our records.

Republic.—Week extremely hot; late corn fired on uplands; hay is good, also early corn; the yield of small grain averages light.

Rice.—The late corn burnt up; all the corn will be light, will shrink by the hot weather.

Saline.—If frost should come to-night it would not catch more than one acre in a thousand of corn; some matured and some dried, still there will be a big crop, though much will be chaffy; haying in progress, quantity and quality never better.

Sedgwick.—Hot and very dry, not a drop of rain for over three weeks; most of the corn is ripe and was not greatly injured; peaches dropping fast and decaying badly.

Smith.—Little rain for the week but nothing suffering; early corn is made; some of the late corn will be benefited by another good rain; farmers haying.

Stafford.—Hot, dry week, but good for haying.

Sumner.—Hot and dry; ground very

hard; dry weather has shortened the corn crop.

Washington.—Fine weather for corn

and fall wheat, the corn being in first-

class condition in south half but is

needing rain in north half.

## WESTERN DIVISION.

Dry weather continues in the extreme southwestern counties, but in Kearney and eastward through Ford and northward through Wallace and Trego conditions have been much more favorable. Corn is now maturing in good shape. Haying and threshing are progressing, with a good hay crop in sight.

Ford.—Warm, dry week; warm weather is ripening corn fast, most of the corn in Ford will be safe from frost in ten days, quite a good deal ripe now; alfalfa and prairie hay are first-class; melons and peaches quite abundant.

Hamilton.—Dry and hot; some good rains in the eastern and northern parts of the county; ditches furnishing good supply of water last two weeks.

Kearney.—Local rains, beneficial to late corn; the alfalfa seed crop is short.

Morton.—No rain yet, wells better than the river now.

Ness.—The excessive heat has about

captured the corn crop in this section.

Thomas.—Dry, hot week; will be

very little corn; wheat turning out poor.

Trego.—Hail storm of the 9th ripped

the blades off the late corn fodder;

though rather fickle weather for hay-

ing, it is the principal work.

Wallace.—Everything growing fine,

but very hot during the week; thresh-

ing in progress; haying being pushed;

range grass fine; third crop of alfalfa

in fine shape and will be cut in about

two weeks.

## Special Inducements

are offered to passengers traveling via the Nickel Plate Road to Cleveland on occasion of the biennial encampment Knights of Pythias, Uniform Rank, at Cleveland, August 23 to 30, inclusive. A smooth roadway, quick time; a train service that is unapproachable and that affords all the comforts available in travel, besides being \$1.50 lower than rates offered by other lines. For this occasion tickets will be on sale August 22, 23 and 24 at \$8.50, Chicago to Cleveland and return, good returning until August 31.

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General Agent, 111 Adams street, Chicago, Ill.

## 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.

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

## Population of Kansas by Counties.

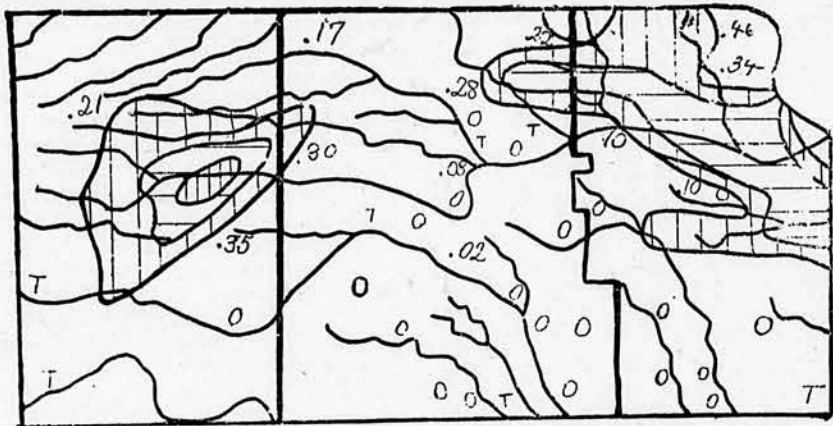
The population of Kansas as returned by township assessors, through their County Clerks, has been tabulated by the State Board of Agriculture, and the total is 1,336,650, or a net increase during the past year of 1,925. Forty-five counties have gained 27,221; the smallest gain is four, in Stevens, and the largest, 3,277, in Cherokee. Sixty counties lost 25,296, the smallest loss being one, in Phillips, and the greatest, 2,234, in Cowley. The following table shows the population and also the increase and decrease in each county:

County.	Pop-ulation.	Increase.	Decrease.
Allen...	14,017	936	
Anderson...	14,310	853	
Atchison...	26,378		617
Barber...	5,290	145	
Barton...	12,361		527
Bourbon...	27,094	1,246	
Brown...	21,035	1,621	
Butler...	20,692		434
Chase...	7,216		11
Chautauqua...	10,826	618	
Cherokee...	33,928	3,277	
Cheyenne...	3,641		88
Clark...	1,435		649
Clay...	14,136		1,506
Cloud...	15,549		
Coffey...	16,369	614	
Comanche...	1,269		451
Cowley...	26,426		2,234
Crawford...	36,381	2,535	
Decatur...	7,152	199	
Dickinson...	19,011		1,015
Doniphan...	15,181	1,186	
Douglas...	24,046	450	
Edwards...	3,147		75
Ellis...	10,356		464
Ellsworth...	7,283		195
Finney...	8,686		187
Ford...	3,505		48
Franklin...	5,003	63	
Geary...	21,835	1,101	
Gove...	10,165	770	
Graham...	2,943		83
Grant...	4,020	195	
Gray...	4,494		38
Greeley...	1,249		7
Greenwood...	851		184
Hamilton...	14,827		134
Harper...	1,529	118	
Harvey...	9,235		3
Haskell...	16,238		12
Hodgeman...	580		15
Hutchinson...	1,860	68	
Jackson...	16,497	1,224	
Jefferson...	17,619	446	
Jewell...	16,632		866
Johnson...	17,282	488	
Kearney...	1,046		113
Kingman...	9,854	454	
Kiowa...	1,923		277
Labette...	27,568	545	
Lane...	1,660	176	
Leavenworth...	33,698		923
Lincoln...	8,988		77
Linn...	18,047	1,709	
Logan...	2,049		22
Lyon...	24,251	456	
Marion...	20,451	77	
Marshall...	24,142		425
McPherson...	20,295		22
Meade...	1,651		90
Miami...	20,175	436	
Mitchell...	13,267		60
Montgomery...	23,824		124
Morris...	11,227	283	
Morton...	320		68
Nemaha...	20,247	347	
Neosho...	18,297		281
Ness...	3,970	185	
Norton...	9,008	337	
Osage...	24,655		163
Osborne...	10,984	107	
Ottawa...	10,342		82
Pawnee...	4,441		356
Phillips...	11,711		1
Pottawatomie...	16,966	613	
Pratt...	6,126		457
Rawlins...	5,079		623
Reno...	25,598		894
Republic...	15,658		1,018
Rice...	13,650	283	
Riley...	12,435	41	
Rooks...	7,270		170
Rush...	5,007	204	
Russell...	7,085		385
Saline...	15,572		1,903
Scott...	1,045		43
Sedgwick...	37,836		1,272
Seward...	688		138
Shawnee...	47,461		517
Sheridan...	2,789	116	
Sherman...	4,081	108	
Smith...	13,280		730
Stafford...	8,052		287
Stanton...	471		142
Stevens...	688		4
Sumner...	22,476		1,662
Thomas...	3,456		56
Trego...	2,131		35
Wabaunsee...	11,893	81	
Wallace...	1,690	98	
Washington...	19,677		1,925
Wichita...	1,431		7
Wilson...	15,036	643	
Woodson...	9,659	346	
Wyandotte...	58,612	1,260	
Total...	1,336,650	27,221	25,296

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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.



Scale of shades less than 1/2 inch, 1/2 to 1 inch, 1 to 2 inches, over 2 inches, Trace

ACTUAL RAINFALL FOR WEEK ENDING AUGUST 15, 1896.

since July 24; stock water getting scarce in many places; hot winds have damaged the late corn, but the early-planted is now dry and is a good crop; corn-cutting and hay-making the order of the day.

Cherokee.—A dry week, and will cut the corn crop one-third if it continues another week, having already injured it badly.

Coffey.—All crops damaged by hot, dry weather; a good rain in north part of county, but all south part suffering; grapes drying on the vines; late corn damaged one-half.

Douglas.—The rain helped the late corn; some of the early-planted corn is being cut up.

Elk.—Corn drying up fast; late corn and Kaffir needing rain; have now had twenty-two days clear weather.

Franklin.—Corn drying up badly, much late corn now ruined; fruit also suffering from the dry weather.

Labette.—We have been bordering very nearly on hot winds almost every day the past week, which is telling on growing crops very clearly; corn is drying up rapidly, pastures getting short, fruit falling badly; corn-cutting commenced; the early corn is about all made and will be out of the way of frost very soon; late corn will not amount to much.

Leavenworth.—Rain benefited corn very much.

Marshall.—All conditions favorable for the growing crops; chinch bugs will prevent a large amount of wheat being sown.

Miami.—The extreme heat and dry weather has ended the corn season; oats very poor; flax crop light; hay good.

Montgomery.—A week of sunshine and high temperature has been very injurious to late corn and we think will shrink the early some; chinch bugs have become numerous, aiding the heat and sunshine in their damaging effects; fruit and gardens seriously

ing; cutting corn for fodder; good haying weather; too dry for plowing.

Butler.—Need rain, none since July 24; much alfalfa, hay and millet being put up; frost would not hurt corn crop now; potato crop damaged some by hot weather; Kaffir corn in good condition yet.

Clay.—Earliest planted now well matured, latest planted now tasseling and silking; corn has not suffered and is in prime condition and promises to be a tremendous crop.

Cloud.—Corn in good condition but needs cooler weather.

Cowley.—Hot, dry week; Kaffir corn heading nicely; sorghum for feed a mammoth growth; late corn badly injured; hay good and being put up in good shape.

Dickinson.—Much of the late corn burned up; grass ripening rapidly, farmers busy making hay; peaches drying up on trees.

Harper.—Very hot and dry, everything drying up; too dry to plow; late fruit not maturing on account of dry weather.

Harvey.—No rain; wind hotter than last week; hottest week on a twelve-year record.

Marion.—Twenty-seventh day without rain; stock doing fair; too dry for fall plowing.

Mitchell.—Hot; first hot winds on 15th; late planted corn is injured—too soon to say how much, but the mass of the early-planted is not seriously damaged and is so far advanced as not to be injured by any ordinary frost; potatoes hardly an average; millet extra fine; alfalfa producing well; sorghum, Kaffir corn, etc., doing well; prairie hay a fair crop and of excellent quality.

Ottawa.—Another hot, dry week; late corn about ruined; early ready to cut; the drought continues to damage everything.

Phillips.—Small grain all harvested and nearly all threshed; corn is in no

## Horticulture.

### CANAIGRE.

The Agricultural Experiment Station of the University of Arizona, located at Tucson, is now distributing another bulletin under the above title, in which are set forth further facts respecting this new and important industry. It is a pamphlet of thirty-five pages and contains a half dozen reproductions of photographs of canaigre plants and roots, showing faithfully the habit of growth and character of the roots. Prof. Robert H. Forbes, the chemist of the station, is the author of the bulletin, which deals more particularly with the chemical side of the question, although some space is given to botanical description, habitat and cultural methods. All who are interested in this plant will want this new bulletin, which will be sent gratis to all applicants applying to the Director of the Station, as above.

As to whether canaigre is to become an important crop of the arid Southwest, Prof. Forbes, of the Arizona Agricultural Experiment Station, seems to have little doubt. In Bulletin No. 21 of that station, just issued, he says:

"Certain peculiarities of canaigre seem favorable to its agricultural future.

"1. It grows in winter when water is more abundant throughout the arid region. This fact may render possible the reclamation of large tracts of land for which there is not sufficient irrigation in summer.

"2. The climate is mild in this season of the year and labor is therefore more comfortable and effective.

"3. In case of extreme drought the crop is not lost, but the plant simply stops growth and waits for better conditions.

"4. Harvesting may occur at any time, the mature crop remaining in the ground indefinitely without injury, and even with a certain amount of improvement.

"As to the value of the product, it appears that under existing conditions the objective point is a crop which can be sold at from \$5 to \$7 a ton."

In Bulletin No. 21 appears the following description of canaigre:

"Canaigre is chiefly remarkable for its tuberous roots, varying under different conditions of growth from almost globular to long and slender forms. Outside the tubers the root system is not extensive, being distinctly smaller than that of beets or potatoes. In weight the roots range from a fraction of an ounce to two pounds. Externally the young roots are light in color, changing to brown, reddish brown or almost black with age. They live several years, usually five or more, but show very little new growth after about the third season. The root increases after the manner of all exogenous stems by adding a layer of new tissue to the heart from without and to the bark from within. At the end of the growing season this white zone of new growth may always be found in living roots between bark and heart, and, since the tissues tend to deepen in color from year to year, the older portions of the root, consisting of the inner heart and the outside layers of bark, usually possess much more coloring matter. Oftentimes the gradations of color in successive rings of growth are so sharply marked that the age of a root is roughly shown by its cross section.

"The brittle, heavy bark, often a quarter of an inch in thickness, is externally quite smooth in young roots, with occasional scars marking the points of attachment of smaller rootlets during the period of growth. The old roots are rougher, often shaggy and deeply cracked as the result of rapid growth. The growing buds are at the crown of the root and are sometimes also borne on the fleshy base of the stems, which occasionally do not die but persist, seemingly, in order to bring the buds nearer to the surface when the roots have been too deeply buried. In young roots the buds are conspicuous and prompt to grow, but small and sluggish in old ones.

"The roots, usually erect in position,

appear normally at less than one foot below the surface. The root clusters, containing tubers of every size and age, vary much in arrangement. Roughly speaking, the new roots surround the mother tubers, making a cluster in which the old growth is centrally placed. Oftentimes the new roots happen to form on one side of the mother tuber, and, continuing in that direction, make a chain of roots connected at their crowns and in which the old growth is at one end, the new at the other. Increasing in this manner, the number of living roots in a single colony is sometimes very large. A thrifty hill dug in a sandy wash near Tucson recently yielded ninety-one roots, weighing about 8 pounds, while a cultivated hill three years old, from Phoenix, gave eighty-seven roots weighing 17.5 pounds.

"As they grow older the roots become more and more dormant, showing less tendency to throw up shoots of their own, but maintaining a feeble vitality through their connection with younger roots. In nature, the old roots seem to serve as a safeguard against extermination, being less easily affected by adverse conditions. They also seem to be concerned in the work of seed production, since it appears, other things equal, that good seed stalks are associated with strong old roots. Seedling roots do not produce seed during their first year of growth.

"The seeds, especially in arid situations, are largely infertile. In this section wild seedlings have not been observed, though said to be common in certain moist localities of New Mexico and California. In one trial of mixed wild and cultivated seed, two years old, sown in drills one-half inch deep, 9 per cent. came up. In nature, canaigre is spread by occasional seed germination and by accidental scattering of roots, but is maintained in place by its peculiar root system."

The following extract from the bulletin will give the information asked by many, as to whether canaigre may be grown in their respective localities:

"The best conditions for the growth of canaigre are a cool but not freezing climate, a moderate amount of moisture, sandy, fertile soil, and probably, also, a sunny and arid atmosphere. These conditions are nowhere combined more perfectly or for a longer period of the year than during the six or seven cooler months in the arid Southwest. A mean temperature of about 70° or less is required for the growth of canaigre. Above this, even though there be abundant rain, as was the case in August, the roots will not do more than sprout feebly, and various attempts to make them grow in warm weather have failed. This seems to limit canaigre to the Southwest, for nowhere else, excepting possibly in some Southern States, is there so long a period of mild weather. It has been grown experimentally in Florida with some success, but in the Northern States the interval between the severe cold of winter and the extreme heat of summer is too short to allow of much root development. The sprouting of the roots in August under the influence of rain suggests that in the culture of canaigre one or two summer irrigations would prepare the plant to grow more promptly on the advent of cool weather.

"The growing plant will stand a good deal of cold. When frosted the leaves lie prostrate upon the ground, but immediately regain position when thawed out by the sun. The root also will endure freezing. It has been left in the ground all winter, sixty miles north of New York city, 'subjected to a temperature as low as 15° below zero, without injury.' 'At Lincoln, Neb., the roots stood a very severe winter without any damage whatever.' At Peoria, Ill., plantings made in 1892 were still alive in 1895, and similar results are noted at Washington, D. C., and Garden City, Kas. The new root development, however, is stated in a number of cases to be insignificant under such conditions.

"As to locality, canaigre is found more commonly in sandy washes where water is more abundant. With irrigation it will make a good growth in any fertile, tillable ground, but the influence of soil conditions on actual pro-

duction has been little studied. It seems to stand considerable alkali and is even reported in the salt grass meadows of Tia Juana valley, near San Diego, Cal."

"The tanning materials in canaigre remain pretty constant throughout the growing season, with, however, a small but distinct increase after the plants become established in vigorous growth. The amount of this increase in mature roots from year to year was further shown by taking four samples of wild roots, comprising every age up to about five years, dividing the samples as near as possible into successive years' growth, and analyzing. It was found that the average increase of tanning materials from year to year in ten instances was 1.64 per cent. (in water free material). In one set of cultivated samples the averages of the first and second year's roots differed 2.64 per cent. This indicates a small but constant increase in the per cent. of tanning materials from year to year, but holds true only so long as the roots retain their vitality. When they die the tanning substances quickly disappear. Although the percentage does not increase remarkably from year to year, the roots themselves become larger, so that the actual amount of tanning materials is much greater.

"As regards the value of canaigre tanning materials, the earlier favorable opinions of tanning chemists have been excellently supported by the ex-



CANAIGRE

perience of the trade. From various sources it is learned that canaigre chips and extracts have been successfully employed, either alone or in connection with other tanning materials, for the production of a remarkable variety of leathers, including both heavier and lighter grades. According to the statements of different tanners it is employed in the production of:

"1. Patent and enamelled leathers for the carriage, saddlery and upholstery trades.

"2. Patent and enamelled leather for fine shoes.

"3. Carriage covers and dashboard leather.

"4. A high grade of carriage and furniture leather and a fair grade of patent shoe tipping.

"5. Upper, grain, or similar light leather.

"6. East India kips finished as waxed leather.

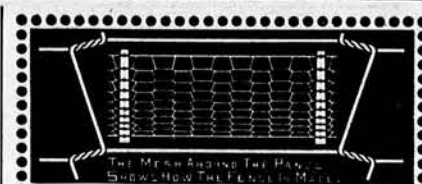
"7. Yellow for mittens, horse hides, butts, kangaroo, glazed kid, and other fine shoe leathers.

"8. The heaviest sole and harness leather, and the lightest calf and sheep, with best results for all kinds."

All the work thus far done at the Arizona station has led Prof. Forbes to deduct the following conclusions respecting this important industry:

"1. Canaigre is best adapted to a mild, dry, sunny winter climate of the Southwest. Although it will endure frost, and will grow in rainy regions, it does not promise good results in these uncongenial situations.

"2. Canaigre roots and leaves are damaged to some extent by insects,



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but the plant is not known to be seriously threatened by them.

"3. Canaigre tanning materials are found throughout the plant, being in greatest quantity in the central portions of the roots.

"4. The tanning materials form rapidly during the first year of growth, showing a small percentage increase after the first year, and as long as the root retains its vitality.

"5. During the dormant summer period of the plant, the tanning materials seem slightly to increase in young roots. Sprouting does not affect the quantity of tanning materials. The evidence thus far does not show that irrigation lessens the percentage of tanning materials.

"6. Heat, air and fermentation, acting on either roots or extracts, all destroy canaigre tanning materials.

"7. The red and yellow coloring matters of canaigre affect the quality of leather produced. The red matters are less desirable and are formed chiefly in the wild crop. They are not present in quantity in cultivated roots. This fact is considered an improvement in the quality of the root for tanning purposes.

"8. The sugar contained in canaigre gives roots and extracts their "plumping" qualities. If properly managed it is a valuable factor in the production of heavy leathers.

"9. Canaigre bagasse, properly prepared, should be about equal to mesquite wood in fuel value. When well rotted it ought also to have a considerable value as a fertilizer. It promises little as a stock food.

"10. Canaigre draws heavily upon the soil, especially for nitrogen. Its total drain is about twice as costly as that of sugar beets.

"11. The utility of canaigre is demonstrated. Properly handled it produces an unusual variety of leathers of excellent quality.

"12. The agriculture of canaigre is yet in its experimental stage. A fair estimate shows that it will be necessary to produce an annual crop of about seven tons, or a biennial crop of about thirteen tons an acre in order to equal the profits of sugar beet culture. On present evidence this yield seems highly probable, but, so far as known, has not yet been demonstrated."

### Note on a New Peach Pest.

BY PROF. E. A. POPE, STATE AGRICULTURAL COLLEGE.

D. G. Curtis, Spearville, Kas., under date of August 10, writes: "I inclose two specimens of a bug that seems to work on fruit, attacking especially peaches, of which they destroy very many just as they are ripening. Please give name, habits, and means of preventing the damage."

The insects referred to me, accompanying the letter above quoted, prove to belong to a large true bug, known to entomologists as *Leptoglossus zonatus* (Dallas), allied distantly to the well-known squash bug, and belonging to the same family. This insect is not sufficiently well known to have received a common name, though from its abundance in this vicinity upon blooming yuccas, it is known to our local entomological students as the yucca bug. Our species belongs to the same genus as another large bug that, in the South, attacks variously cotton bolls, oranges and other fruits. Both of these forms find their normal food upon other plants than those which bring them to practical notice, the Southern form breeding upon a large thistle, from the heads of which the insects suck the juice as their natural food. From its

prevalence upon the blooms and pods of the yucca, there seems to be no doubt that our species finds its native food in the juice of this plant. From this, however, as I have seen, it wanders to rose hips, which it saps in the same way, and it even punctures the leaves and twigs of the young cedar.

Except by the method of gathering the troublesome bugs one by one, as they are seen at their work, there is at this season no good way to destroy them. The use of kerosene spray would do the work, but this mode is evidently inapplicable unless the bugs are very abundant, and it seems necessary to destroy them regardless of the fate of the ripe fruit. A better plan is to find the plants upon which they multiply—probably in our correspondent's locality the yucca (soap weed) as here—and destroy them upon these plants by the early and free use of kerosene emulsion. In Hubbard's work upon the "Insects of the Orange," noting the attacks of the related species already referred to, it is stated that the orchardists finally got rid of that pest by destroying all the thistles, that constituted the natural food plant of the insect, from which it spread to the orange groves. From my own observations upon the occurrence of this insect, it is my belief that it is quite local in its distribution, which is principally determined by the presence of yucca plants in the vicinity. If this is so in the neighborhood of our correspondent's orchard, it may secure relief to destroy the yucca plants, a plan at any rate worth the trying.

#### DESCRIPTION OF THE INSECT.

A large species of the general form and nearly the size of the well-known squash bug, rather narrower than that species, and with sides more nearly parallel. Its color, reddish brown, the folded wings crossed near the middle with a dentate line of yellowish white. The second joint of the hind legs broadly flattened on the basal two-thirds into a leaf-like expansion, with a white spot on the inner half. This bug is most active during the warm part of the day, flies readily, with a deep buzz or humming noise, and is easily driven from its place when the branches are shaken, returning after the disturbance has ceased.

## In the Dairy.

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

#### Butter-Making Without Ice.

"One great advantage the creamery has over the private dairy is in a supply of ice to use in hot weather," says a writer in *Epitomist*. "Ice in a creamery comes so near a necessity that few would undertake to run one without ice. But an abundant supply of water will answer the purpose. It takes longer to cool with water than it does to throw a lot of ice into the cream, but there are objections to cooling by putting ice into the cream. The reports from all markets now contain the information that most of the creamery butter has defects, due to hot weather. And yet the creameries all have ice. In the private dairy it is much easier to get along without ice. In the first place no cream has to be carted along the road in hot weather and become heated. In the second place there is less cream to cool and, therefore, less water will be needed. In the third place the cows need water, and the water used to cool the dairy house can be run through it and go to the cows, so there is no extra water needed to cool the cream. In the fourth place a large tank of water should stand in the dairy house and the cream can be set in this and it will keep cool and need no extra cooling. When the butter comes, cold water is necessary, not ice. If the wind blows, this problem is already solved on Iowa farms, for they have windmills to pump for stock and the stock water can run through the dairy house. But if the wind will not blow at that time, then hand pumping must be resorted to for the supply, or other provisions made. No hand pumping is done for our dairy. A tread power stands in a power house near by and a shaft runs through the dairy

house. If cold water is desired when zephyrs are asleep, a horse is led into the tread and he does the work. No ice is desired for butter-making with such conveniences. Pure, fresh, cold water suits better than stale water made cold with ice. A refrigerator is in the dairy house also. No ice is used in it, but simply cold water. Instead of putting cold water into this refrigerator, the refrigerator is put into the cold water. It is a galvanized iron tank inside of the water tank, and the water passing through this water tank for all stock purposes, keeps butter hard and nice in the refrigerator. In hot, still weather there is no trouble, for, if the wind is missing, the supply of water is kept up by a horse-power for stock, and so the water in the dairy house tank is always cold."

#### Report on Skimming Milk.

Bulletin No. 42 of the Utah Experiment Station reports results of experiments in creaming, made by F. P. Linfield, B. S. A. The following are the conclusions drawn from the experiment:

1. As regards thoroughness of skimming, the effectiveness of the methods of creaming milk, according to our work, stands in the following order: (1) Separator, (2) shallow pans, (3) deep pails.
2. When the setting methods are practiced, the pans will give much the best results during the winter, or cold months.
3. There is no advantage, but rather the opposite, in moving the pans into the house during the cold weather, provided that they be kept in a place where the milk will not freeze.
4. Of the deep setting cans, those which are skimmed by drawing the skim-milk from the bottom, give the better results; but the Cooley or submerged can, as regards thoroughness of skimming, does not seem to possess any advantage over those not submerged.
5. From the results given it is evident that from a herd of ten good cows, a separator would be a wise investment. The extra butter obtained by its use, valued at 20 cents a pound, would pay 20 per cent. a year on its cost, as compared with results from shallow pans, and 50 per cent. a year, as compared with deep setting.
6. With the deep setting methods, the cooler the water is kept, in which the milk is set, the better the skimming. In fact, to do the best skimming, it is absolutely necessary to use ice, and a sufficient quantity of it to keep the water at 40° or below, at all times.

#### Exports of Butter and Cheese from New York Last Week.

The following exports of butter and cheese are from the port of New York for the week ending July 21, 1896:

Bremen—18,032 pounds butter	\$1,892.
Bristol—18,954 pounds cheese	\$1,239.
British West Indies—18,069 pounds butter	\$2,952; 15,101 pounds cheese
	\$1,765.
Copenhagen—25,783 pounds butter	\$2,817.
Central America—1,084 pounds butter	\$147; 430 pounds cheese
	\$52.
Cardiff—6,048 pounds butter	\$875.
Cuba—1,016 pounds butter	\$169; 2,967 pounds cheese
	\$487.
Glasgow—23,059 pounds butter	\$2,696; 62,797 pounds cheese
	\$4,303.
Hamburg—5,200 pounds butter	\$5,300.
Hull—53,220 pounds cheese	\$3,974.
Hayti—6,064 pounds butter	\$828; 6,700 pounds butter
	\$952; 1,316 pounds cheese
	\$155.
Liverpool—635,927 pounds cheese	\$46,275; 20,975 pounds butter
	\$2,470.
London—21,924 pounds cheese	\$1,505; 16,843 pounds butter
	\$2,050.
Mexico—1,030 pounds butter	\$185; 1,119 pounds cheese
	\$200.
Southampton—20,869 pounds butter	\$2,840; 9,814 pounds cheese
	\$810.
United States of Colombia—4,113 pounds butter	\$522; 1,932 pounds cheese
	\$239.
Aux Cayes—22,000 pounds butter	\$267.
Gonaives—3,500 pounds butter	\$450.
Guayaquil—1,620 pounds butter	\$193.
Port Limon—181 pounds butter	\$20; 346 pounds cheese
	\$48.
Trinidad—388 pounds butter	\$75; 3,983 pounds cheese
	\$479.

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

#### THE LIGHT OF LIFE.

How it is Preserved by Modern Science.

A Discovery that is Driving Disease Out of the World.

The world is startled almost every day by wonderful inventions all directed to the single purpose of saving power and force. The latest electrical wonder is a lamp which saves 12 per cent. of the electricity which it uses and turns it into light. An ordinary



gas burner only gives 1 per cent. of light from all the gas it uses up; the other 99 per cent. is wasted and lost.

An incandescent lamp only gives 3 per cent. of light from the electricity used; 97 per cent. is lost. Where does it go to? Nobody knows. It disappears somewhere along the wire with nothing to show for it.

If science could find a way to save only half of this wasted power, that would solve the problem of lighting the civilized world. Nearly all the problems of life would be solved if we knew how to save the energy and force that is wasted.

The great problem of health would be solved if we knew how to save all the forceful, nutritive elements contained in the food we eat and turn them into life-power and vitality. If we could always do this—there would never be any more sickness.

Disease is simply the result of wasted power. When you are sick or "run-down" or losing flesh and strength, it simply shows that most of the vital force which you ought to get from the food you eat is wasted and lost because the digestive and nutritive functions are only able to extract a very small percentage of the nourishment which the food contains.

That is why people grow thin and pale and emaciated in spite of the best food the market affords; that is why people die of consumption in spite of all the cod liver oil emulsions they can swallow.

For all these wasting diseases and broken-down conditions, Dr. Pierce's Golden Medical Discovery is a thousand times better than any amount of fat-foods because this "Discovery" acts directly upon the nutritive organs and gives them power to obtain all the nutritious, force-giving elements out of every particle of food which is eaten, and to transform this nourishment into healthy vitality.

It strengthens the digestive fluids; helps the liver to clear out all bilious impurities; enables the blood-making glands to pour into the circulation a fresh supply of pure, rich, highly vitalized blood; which builds up new tissue, solid flesh and muscular energy.

It increases the percentage of nourishment so immensely that loss is turned into gain, the process of disease is completely reversed and turned into a process of health. Dr. Pierce's marvelous "Discovery" does for human life what the electricians are trying to do

for illuminating science. It saves the life-power and energy that would otherwise be wasted.

It cures consumption after all the "emulsions" and all the other usual remedies have been tried in vain. It cures all those severe chronic bronchial affections, lingering coughs and obscure wasting diseases which will not yield to any other treatment. It cures skin and blood diseases, liver complaint and indigestion.

It restores a hearty appetite, sound sleep, a clear skin, natural color, active mental faculties and nerve-power. It does not make flabby fat. It only brings the weight to the standard of perfect health. For this reason it is the best tonic and strength-builder in the world for corpulent people.

No physician in America has a higher reputation than Dr. Pierce for successful treatment of severe chronic diseases. For thirty years he has been chief consulting physician of the famous Invalids' Hotel and Surgical Institute, of Buffalo, N. Y. His great thousand-page illustrated book, "The People's Common Sense Medical Adviser," contains more valuable information than any other popular medical work in the world. 680,000 copies were sold at \$1.50 each. A copy of the paper-bound edition will be sent absolutely free to any one sending 21 one-cent stamps to pay the cost of mailing only. Address World's Dispensary Medical Association, Buffalo, N. Y. A cloth-bound copy will be sent for 10 cents extra (31 cents in all), to pay the extra expense of this handsome and more durable binding.

#### For the Biennial Encampment

of the Knights of Pythias, Uniform Rank, at Cleveland, August 23 to 30, the Nickel Plate Road will sell tickets, available on all trains August 22, 23 and 24, from Chicago to Cleveland and return, at \$3.50 for the round trip, good returning until August 31. This is a saving of \$1.50 on the round trip as compared with other lines, and our passenger service includes fast trains, drawing-room sleeping cars and unexcelled dining service. For further particulars address J. Y. Calahan, General Agent, 111 Adams street, Chicago, Ill. 125

#### 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.

#### Popular Low-Price California Excursions.

The Santa Fe Route personally conducted weekly excursions to California are deservedly popular. About one-third saved in price of railroad and sleeper tickets as compared with first-class passage.

The improved Pullmans occupied by these parties are of 1896 pattern and afford every necessary convenience. A porter goes with each car and an experienced agent of the company is in charge.

The Santa Fe's California line is remarkably picturesque, and its middle course across the continent avoids the discomforts of extreme heat or cold.

Daily service, same as above, except as regards agent in charge.

For descriptive literature and other information address G. T. Nicholson, G. P. A., A. T. & S. F. Ry., Chicago.

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. Griess, 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, Role 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.,  
399 W. Water St., Syracuse, N. Y.

## The Apiary.

### STEPS IN BEEKEEPING.

**How to Avoid the Rocks on Which Beginners Usually Split.**

The first step is to get a good text book on bee-keeping and study it thoroughly. Then get another one and study that. Perhaps a third could be profitably added to the list. If a beekeepers' convention should be held near by, attend that; if not, visit neighboring beekeepers and "talk bees" with them—perhaps this would be better than the ordinary bee conventions, though both are good. After this, if it is the intention to make of beekeeping a special business, much time may be saved by spending at least one season with some professional apiarist. If this cannot be done, the best way will be to begin at home with a few colonies, and allow the bees and the knowledge to keep pace one with the other. The beginner is quite likely to make some mistakes, and it is better to make them with a small number of colonies. Perhaps ten colonies would be sufficient to begin with. Many recommend buying cheap colonies of blacks in box hives, transferring them to moveable frames, and Italianizing them; but transferring as usually done is a very disagreeable job, requiring some nerve, patience and skill, and seems scarcely the proper work at which to set a novice. In Italianizing there is also a risk of losing queens, particularly if the work is done by an inexperienced person. Still, if one has plenty of determination and little money this course may be advisable. It is much more pleasant, however, for the beginner to begin with Italians in moveable comb hives.

Spring is the best time to buy bees, and it is better to get them as near home as possible, as express charges are very heavy, and long journeys are likely to injure the colonies. I would advise even a beginner to buy black bees in box hives near home, and then transfer and Italianize, rather than have bees shipped many hundreds of miles.

The cost of beginning in bee-keeping might be estimated something as follows:

Bee literature.....	5.00
Bee-smoker and veil.....	1.50
Ten colonies of bees at \$5.....	50.00
New hives for swarms.....	10.00
Sections and comb foundations.....	10.00
Total.....	\$76.50

It might be well for the beginner to produce extracted honey at first, in which case an extractor would be needed. This costs about ten dollars, but no sections would be needed, nor so much foundations, though there would be needed some vessels in which to store the honey. The one thing that the beginner needs to avoid in producing extracted honey is extracting too closely, taking away too much honey and leaving the bees short of stores. No honey should be taken from the brood nest.

Another rock upon which the beginner is likely to split, is dividing colonies too early, too frequently or too late. To allow each colony to swarm once, if it will, and prevent after-swarms, would be a safe plan for a beginner to follow.—Country Gentleman.

### WATER HYACINTHS.

**A Simple Plan Which Has Saved the Lives of Many Bees.**

A great many bee-keepers are troubled with their bees going into water buckets, troughs for watering stock and other places, where they are in the way, seeking water, and in the warm, dry weather we all know they consume a great deal. I want to give a plan that will do away with all this annoyance, says R. P. Johnson, in the American Bee Journal. Take a whisky barrel, saw it in two in the center, and locate it in a position to suit, no matter if in the hottest of sun. Fill half full of well rotted manure or rich soil, then procure some bulbs of the water hyacinth (*Pontederia grassipes*); place them in the tubs, and fill with water. In three weeks the top of the tubs will be covered with the foliage of the plants, and under the foliage the bees crawl and sip water without let or hindrance, never a bee getting drowned. The whisky barrel, if sawed down, after being sawed in two, say six inches off the top of each would do better, the roots would strike the water sooner. In the absence of the

barrel, any good, stout box will do. It is best to start the plants where you have only two or three bulbs, in a smaller vessel, and transplant to the larger vessel as they grow larger. To keep through the winter, keep the roots always moist. They should be put into a greenhouse and kept moist during the winter, or they can be taken to the cellar, the tub inverted on the ground, and they will come out all right in the spring. Remember, when you put the plants in the water they are planted, the roots will find the soil below in due time, and when the long, full spikes of superlatively beautiful flowers appear, no praise can be too high for them. After they begin blooming you can get half a dozen fine spikes any time you go for them. When the tub gets too full, they must be thinned out, or they will quit blooming. Keep the tub full of water, as it evaporates rapidly.

### Grain Raisers, Attention.

EDITOR KANSAS FARMER:—I suppose the grain-raisers of Kansas have about the same difficulties to contend with as do the grain-raisers of South Dakota, of whom I am one, and while we can all raise good crops when the season is favorable, to sell the crop at a profit at present prices is not an easy matter.

The great drawbacks here are the high transportation rates and immense profits made by the local elevator companies. When a farmer comes in with a load of grain, the buyer offers him from 5 to 10 cents a bushel less for his grain than he could get for it if he shipped it himself, and as none of the other buyers will raise the bid, the first one usually gets the load.

Besides the big profit made, the elevator company expects each buyer to forward one or two car-loads more in a season's run than his books show him to have bought, which is done by stealing a little from each man that sells to them. If he doesn't steal any, he is soon replaced by some man more "identified with their interests."

Three years ago I proposed to the farmers here that instead of all going to town on different days that we all go on the same day, previously agreed on, and having ordered a car for that day we weigh our grain and load directly into the car. This plan works splendidly here and I think would work equally well in Kansas.

I would order a car for Friday, and if unable to fill it on Friday, would hold it until Saturday. Before filling the car, sweep it out clean and patch all the holes. Lumber for this purpose can be had of the railroad agent, but you will need to find your own hammer, saw and nails. When ready to begin loading, put down one of the side doors and then fill as much grain into it as possible without having it run out of the open door. Be sure the doors are securely fastened or grain will work out at the sides. Twenty-four thousand pounds is the smallest amount taken for a car-load. If you send less than this you will have to pay for that amount anyway. Every car has printed on it its capacity in pounds, but if the car is a good one it is safe to overload its capacity. When the car is loaded, have the agent bill it to some commission firm that has no buyer in your town, and send the bill of lading with your letter, instructing them to sell the grain on arrival and remit the proceeds to you by draft. If you must have money the day the car is loaded, take the bill of lading to the bank and ask for an advance on it of one-half or two-thirds of what the grain is worth. The bank will pay you that amount and will charge you 25 cents for doing it. They will keep your bill of lading and send to your commission company with their draft attached. When your car arrives at its destination it will be inspected by the State Inspector and graded by him. It will then be weighed by the State Weighmaster, and be sold by sample by your commission house.

In Minneapolis \$1.50 to \$2 is charged for switching the car to the elevator, which I regard as a clear steal, for they have already charged 18½ cents a hundred for the freight for 300 miles. Twenty or 25 cents will be charged for inspection, and the same for weighing.

These charges will be paid by your commission man, as well as the freight and switching charges. The net proceeds will reach you in about a week from the time of loading.

When you load your car, look out for the local buyers, as they will try to accomplish your defeat by inducing you to ship to some firm that they are interested in. Their love for you is much like what a hungry wolf feels for a fat lamb.

C. E. KITTINGER.

Powell, S. D.

### Bogus Paints and Oils.

One might well think that the long prevailing cheapness of pure white lead and linseed oil would make the adulteration or imitation of either of these articles an unprofitable business. It is, therefore, surprising to find, by careful inquiry, that the market is still largely supplied with imitation leads and worthless compounds, masquerading as "pure lead in oil," or under other misleading and fictitious labels, and that adulterated linseed oils, or bogus oils containing no linseed, are to be found in almost every interior town. We do not mean to imply by this geographical distinction that the New York market is free from this class of oils, but their manufacture and sale appear to be much more extensive elsewhere.

For years the paints brought most conspicuously to the notice of the consumer have been the ready mixed products, and the demand for these compounds has opened a field for fraud that has been largely occupied by the cheapest mixtures. These have, in the long run, proved costly to the consumer and have caused him, for the lack of a correct understanding of the relation which such paints bear to pure pigments, either to regard the whole list of latter-day paints with distrust, or to place himself unreservedly at the mercy of the paint quack. Unfortunately, the consumer naturally knows but little concerning the qualities which make a paint most desirable for use under certain conditions, and is seldom led to make personal investigation of the subject. His information has, therefore, been gained mainly from the circulars of the mixed paint manufacturers, which have been largely directed against lead, or from the dealer in paints with whom he dealt, in whose intelligence and integrity he has a blind trust. To the extent that these representations have persuaded him to believe that ready mixed compounds are better than pure lead, or to trust the statements of some unknown maker as to the quality of his product, just so far they have left him a prey to unscrupulous mixers and vendors. The result has been experiences such as to make him distrustful of all paints whatsoever.

The necessity thus brought about for the makers of honest goods doing some educational work among consumers, as well as among those dealers who have no special familiarity with paints, but handle them simply as merchandise, has been apparent to many, but few have undertaken the work. Two years ago the National Lead Company began such a work in the advertising columns of the class of publications which reached the homes of consumers, and any one familiar with the business who has observed the character of the advertising cannot have failed to be impressed with the benefit which it is likely to exert upon the trade as a whole. The company, from its prominent position among the industrial corporations of the country, and with the prestige of the long line of old-established brands of white lead which it controls, was in a position to speak with authority upon this subject, and when it took up the cudgel in behalf of pure white lead it began an educational effort which was certain to command attention.

The company in its utterances has shown no antagonism to any form of paint, except those based upon unscientific methods and misleading claims, but has supported the position which the more intelligent and honest painters have assumed. On the other hand, the plain facts concerning paint adulterations with which the consumer has thus been made familiar have led to a keener discrimination on his part in favor of pure and durable paints for his buildings. The efforts of the company, in the course it has taken and followed with no little boldness, have, therefore, been equally for the public benefit and that of the makers and distributors of honest paints. They might well encourage more of the latter to similar effort, in which the makers of pure linseed oil might join with salutary effect upon the quality of much of the oil that is sold to consumers throughout the country.

The combinations of mineral and non-drying animal and vegetable oils sold in many localities, if employed in the mixing of paints, however pure the pigment may be, cannot fail to yield disappointing results on wood or ironwork. If the claim that such oils are pure linseed is unchallenged, the reputation of pure oils as a



### KENDALL'S SPAVIN CURE

THE MOST SUCCESSFUL REMEDY FOR MAN OR BEAST.

Certain in its effects and never bilsters. Read proofs below:

### KENDALL'S SPAVIN CURE

SHELBY, MICH., Dec. 16, '93.

DR. B. J. KENDALL CO.

Sirs:—I have used your Kendall's Spavin Cure with good success for curbs on two horses and it is the best Liniment I have ever used.

Yours truly, AUGUST FREDRICK.

For Sale by all Druggists, or address  
Dr. B. J. KENDALL COMPANY,  
ENOSBURGH FALLS, VT.

## FARMERS

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

vehicle for paints is damaged, and the opportunity for makers of the cheap compounds is correspondingly widened. The value of a paint depends equally upon the integrity of the pigment and of the oil, and the adulteration of either cannot fail to be damaging to both.

At the same time the safety of dealers, no less than of consumers, lies in the use of such paints and oils as bear the brands of makers whose reputation and commercial standing are known and are beyond question. The most successful dealers and painters of the country to-day are those who have confined themselves to goods from makers whose guarantee of purity could be unhesitatingly accepted, and their success proves how largely the public use and toleration of inferior products is the result of ignorance rather than choice.—Oil, Paint and Drug Reporter.

### Fruit Evaporators.

The American Manufacturing Co., Waynesboro, Pa., will, upon request, mail its "Red Book" treatise, worth its weight in gold, to any fruit-grower.

### LIVE STOCK AUCTIONEERS.

**LiveStockAuctioneer. 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.

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**C. A. SAWYER, FINE STOCK AUCTIONEER—**N. 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.

## CRIPPLE CREEK

The Santa Fe Route is the most direct and only through broad-gauge line from Chicago and Kansas City to the celebrated Cripple Creek gold mining district. Luxurious Pullmans, free chair cars, fastest time, and low rates.

## GOLD! GOLD!!

Address G. T. Nicholson, G.P.A., A.T.&S.F. Ry., Monadnock Bldg., Chicago, or W. J. Black, A.G.P.A., Topeka, Kas., and ask for free copy of profusely illustrated book descriptive of Cripple Creek. It is well worth reading.

## SANTA FE ROUTE

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 SOW.—I have a sow that is helpless in her hind parts. I have rubbed her with kerosene and given her a tablespoonful twice a day. What can I do? D. T. Auburn, Kas.

Answer.—Give turpentine in the same doses instead of kerosene, and rub her legs and back thoroughly with it.

DEAD STALLION.—QUESTION.—(1) I had a two-year-old stallion that lay down on Monday and could not get up, and died on Saturday. (2) When do you advise to castrate? D. A. D. Sand Creek, Okla.

Answer.—(1) Your stallion died of paralysis, of which your description gives no clew to the cause. (2) In the spring of the year, at 1 year old.

POLL-EVIL.—I have a mare that has the poll-evil. Give treatment. Will her colts be affected? H. J.

Answer.—Open the sore to the bottom and then fill the cavity with chloride of zinc. After a few days the diseased membrane will come out, then dress once a day with 1 dram of the zinc dissolved in water, to heal it. There is very good reason to believe that it is hereditary.

DISEASED TEETH.—I have a horse that has lumps on both sides of his nose half way between the eyes and the nostrils. One of them has ulcerated a little. L. M. J. Liverpool, Kas.

Answer.—The lumps are caused by ulceration at the roots of the teeth. The only remedy is to have the teeth extracted, which is no small task unless you are well prepared.

INFECTIOUS ABORTION.—My cows are losing their calves. Some of them are only five or six months gone and some are nearly full time. They began last winter on dry feed and are now doing the same on pasture. I have lost ten calves. I. B. Burden, Kas.

Answer.—It is a case of infectious abortion, the cause of which might be revealed by a careful investigation of the premises. It will pay you to call in a competent veterinarian at once.

BLOODY MILK.—I have a cow that gives bloody milk at times. What can be done? C. K. P. Mankato, Kas.

Answer.—When bloody milk is due to an injury the case is likely to recover. But many cases are due to some constitutional trouble and become chronic, and incurable. Keep her thoroughly milked twice a day and bathe the udder each time with cold water. Also give the cow a tablespoonful of saltpeter twice a day.

CONTAGIOUS OPHTHALMIA.—A contagious disease called pink-eye is among the cattle in this country. Please prescribe for it. A. T. A.

Answer.—Place the animals in a dark, cool stable, and mild cases may be bathed twice a day with cold water. Severe cases should be bathed twice a day with hot water and a little of the following applied each time: Sulphate of zinc, 20 grains; nitrate of potash, 20 grains; fluid extract of belladonna, 4 drams; water, 1 pint; mix.

FREE TO ALL WOMEN.

I have learned of a very simple home treatment which will readily cure all female disorders. It is nature's own remedy and I will gladly send it free to every suffering woman. Address MABEL E. RUSH, Joliet, Ill.

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

John Moffett, Manager. L. B. Andrews, Office. T. S. Moffett, W. C. Lorimer, Cattle Salesmen. H. M. Baker, Hog and Sheep Salesman. W. A. Morton, Solicitor.

MOFFETT BROS. & ANDREWS Live Stock Commission Merchants.

Feeders and stockers purchased on orders. Personal attention given to all consignments. Correspondence invited. Market reports furnished. References:—National Bank of Commerce, Kansas City, Mo.; Citizens State Bank, Harper, Kas.; Bank of Kiowa, Kiowa, Kas. Rooms 67-68 Live Stock Exchange, Kansas City, Mo.

MARKET REPORTS.

Kansas City Live Stock. KANSAS CITY, Aug. 17.—Cattle—Receipts, since Saturday, 7,844; calves, 658; shipped Saturday, 1,358 cattle, 42 calves. The market was strong, higher and active on the best and steady on the medium grades. The following are representative sales:

SHIPPING AND DRESSED BEEF STEERS.			
No.	Ave. Price	No.	Ave. Price
49.....	1,430 \$4.30	57.....	1,403 \$4.10
23.....	1,100 3.90	42.....	1,428 3.75
62.....	1,273 3.60	5.....	1,214 3.55
14.....	1,287 3.55	21 yrs.	1,179 3.40

TEXAS AND INDIAN STEERS.			
No.	Ave. Price	No.	Ave. Price
71.....	1,127 \$3.00	75.....	1,027 \$2.80
72.....	1,005 2.70	19.....	942 2.60
31.....	937 2.55	27.....	830 2.40
39.....	892 2.35	48.....	786 2.25

NATIVE COWS.			
No.	Ave. Price	No.	Ave. Price
1.....	1,010 \$2.90	7.....	971 \$2.65
6.....	1,018 2.40	11.....	940 2.25
2.....	925 2.00	4.....	1,197 1.90
1.....	830 1.70	1.....	1,020 1.25

NATIVE FEEDERS.			
No.	Ave. Price	No.	Ave. Price
13.....	1,130 \$3.32 1/2	2.....	1,080 \$3.25
27.....	1,049 3.10	13.....	926 3.20
14.....	957 3.00	1.....	400 3.00
2.....	631 3.37 1/2		

NATIVE STOCKERS.			
No.	Ave. Price	No.	Ave. Price
4.....	550 \$3.30	1.....	810 \$3.25
1.....	840 3.20	26.....	867 \$3.20
1.....	840 2.50	1.....	830 2.50
1 Hol.....	860 2.45	4 Hol.....	805 2.35

Hogs—Receipts since Saturday, 1,691; shipped Saturday, 327. The market was steady to 5c higher. The following are representative sales:

115.....	303 \$3.17 1/2	62.....	191 \$3.15	73.....	265 \$3.15
23.....	221 3.15	74.....	225 3.15	66.....	196 3.15 1/2
37.....	181 3.12 1/2	73.....	184 3.10	31.....	140 3.10
72.....	196 3.10	96.....	193 3.07 1/2	68.....	211 3.07 1/2
66.....	219 3.07 1/2	70.....	225 3.05	72.....	249 3.05
68.....	247 3.05	61.....	228 3.05	63.....	226 3.05
64.....	264 3.02 1/2	8.....	160 3.00	82.....	253 3.00
61.....	255 3.00	58.....	289 2.95	15.....	345 2.95
43.....	342 2.85	110.....	326 2.85	4.....	300 2.75
1.....	550 2.75	2.....	325 2.75	40.....	133 2.50
1.....	140 2.00	1.....	90 2.00	2.....	100 2.00

Sheep—Receipts since Saturday, 2,045; shipped Saturday, 201. The market was steady and active. The following are representative sales:

11 lambs.....	84 \$4.40	11,072 Utah.....	91 \$2.40
12 stks.....	60 1.85	145 N. M. st.	61 2.10

Horses—Receipts since Saturday, 120; shipped Saturday, 30. The market was steady but slow. Receipts were quite heavy.

St. Louis Live Stock. ST. LOUIS, Aug. 17.—Cattle—Receipts, 4,000; market steady; native beef steers, \$3.75@4.40; stockers and feeders, \$2.35@3.00; Texas steers, \$2.70@3.70; Texas cows, \$1.70@3.00. Hogs—Receipts, 1,500; market 5 to 10c higher; light, \$3.10@3.35; mixed, \$2.00@3.25; heavy, \$3.00@3.81. Sheep—Receipts, 1,500; market 5c higher.

Chicago Live Stock. CHICAGO, Aug. 17.—Cattle—Receipts, 15,000; market steady to 10c higher; fair to best beefs, \$3.25@4.65; stockers and feeders, \$2.40@3.60; mixed cows and bulls, \$1.25@3.50; Texas, \$2.50@3.10. Hogs—Receipts, 26,000; market strong to 10c higher; light, \$3.15@3.50; rough packing, \$2.70@2.90; mixed and butchers, \$3.05@3.40; heavy packing and shipping, \$2.95@3.30; pigs, \$2.50@3.45. Sheep—Receipts, 14,000; market 10c higher; native, \$2.00@3.25; western, \$2.30@3.15; lambs, \$3.00@3.15.

Hogs—Receipts, 26,000; market strong to 10c higher; light, \$3.15@3.50; rough packing, \$2.75@2.90; mixed and butchers, \$3.05@3.40; heavy packing and shipping, \$2.95@3.30; pigs, \$2.50@3.45.

Sheep—Receipts, 14,000; market 10c higher native, \$2.00@3.25; western, \$2.30@3.15; lambs \$3.00@3.15.

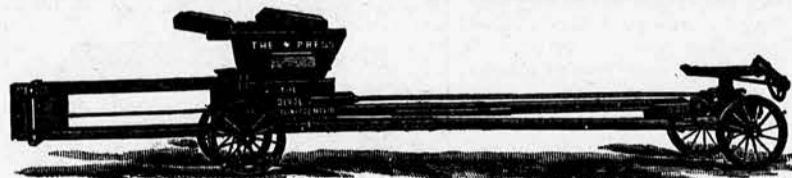
Kansas City Grain. KANSAS CITY, Aug. 17.—No. 2 hard wheat was about 1/4c lower, grades under that a cent lower than Saturday. There was a more general demand than for some time past. Soft wheat continues very scarce and choice samples could not be bought at any decline. Receipts of wheat here to-day, 164 cars; a year ago, 82 cars.

Sales were as follows on track: Hard No. 2, 2 cars 50 1/2c, 12 cars 50c; No. 3, 3 cars 47c, 6 cars 46c, 48 cars 45c, 17 cars 44c; No. 4, 5 cars 42c, 2 cars 41 1/2c, 20 cars 41c, 16 cars 40c, 1 car 39c, 1 car 38c; rejected, 1 car 35c, 1 car 38c, 1 car 37c, 1 car 36c; no grade, nominally 25@30c. Soft, No. 2 red, 1 car choice 55c; No. 3 red, 1 car 51c, 2 cars 50c, 1 car 49c, 1 car 48c; No. 4 red, 1 car 47c, 1 car 44c, 1 car 41c; rejected, nominally 35c; no grade, nominally 25@30c. Mixed corn met with good demand at steady prices and there was not much for sale. White corn was half a cent lower. The nominal river price was 20 1/2c, and the New Orleans price 26 1/2c. Receipts of corn here to-day, 67 cars; a year ago, 69 cars.

Sales by sample on track: No. 2 mixed, 14 cars 21c; No. 3 mixed, nominally 20c; No. 4 mixed, 1 car 18c; no grade, nominally 14@15c; white, No. 2, 3 cars 22c, 3 cars 21 1/2c; No. 3, nominally 21c; No. 4, 1 car 18c; no grade, 1 car 15c. Oats were so varied in quality that they sold at all sorts of prices. Good samples were scarce. Receipts of oats to-day, 25 cars; a year ago, 13 cars.

Sales by sample on track: No. 2 mixed, nominally 19@17c; No. 3, nominally 14@15c; No. 4, 1 car 12 1/2c; no grade, nominally 8@11c; No. 2 white, 1 car new 20c, old choice, nominally 22c; No. 3 white, 1 car 19c, 1 car 17 1/2c, 1 car 17c, 1 car 16c; No. 4 white, nominally 14c. Hay—Receipts, 29 cars; market weak. Choice

CHAS. SOMMER, President. M. S. MCCAY. A. J. PORTER, General Manager. The International Land and Colonization Company, Ltd. INCORPORATED UNDER LAWS OF MEXICO. CAPITAL, \$100,000. Owns and controls for sale: Coffee, Cocoa, Vanilla and Rubber.....LANDS Sugar, Tobacco, Corn and Cotton.....LANDS Fruit, Vegetable, Timber and Grazing.....LANDS in large or small tracts, suitable for colonists or others. Located in the best and most fertile sections of the most prosperous country on the Continent—THE REPUBLIC OF MEXICO. For fuller information address as above.



STAR and FARMER'S HAY PRESSES combine the features of perfect tension, great power, ease of draft, well made and handsomely finished. Fully warranted equal to any in the market and to press one ton of hay per hour if properly operated. Write for circulars and full information as to price, etc. (Mention this paper.) KINGMAN-MOORE IMPLEMENT CO., Kansas City, Mo.

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IF SILVER WINS and if farm produce, labor and labor products double in price, then metals must also double in price, as they are 95% labor. If labor doubles in cost and the product of the mine doubles in cost, Aermotors, Pumps, Spiral Pipe, Fittings, Cylinders, Tanks and Substructures, being the product of the mine and labor, must also double in cost and price; therefore, your \$1 now will buy as much as 2 of the same dollars if silver wins, or if people think it will win, or in a week. Aermotor prices will not advance unless compelled by an advance in labor and material. Our prices on Brass Cylinders are 40% below anything ever quoted, and our other goods are as low as they can be produced, even with our splendid facilities. A general rush to cover future needs, while \$1 buys so much, may quickly exhaust our immense stock and compel the advance. Great saving can be assured and advance avoided IF YOU BUY NOW

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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	567,016		
Sold to feeders.....	392,263	1,876	111,445		
Sold to shippers.....	215,222	273,969	59,784		
Total Sold in Kansas City, 1895.....	1,533,234	2,446,203	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.

timothy, \$7.00@7.50; No. 1, \$6.00@6.50; No. 2, \$5.00; 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. 17.—Receipts, wheat, 171,800 bu.; last year, 106,639 bu.; corn, 308,700 bu.; last year, 27,000 bu.; oats, 78,430 bu.; last year, 68,600 bu. Shipments, wheat, 11,635 bu.; corn, 186,130 bu.; oats, 7,125 bu. Closing prices: Wheat—Cash, 60 1/2c; September, 67 1/2c; December, 60 1/2c; August, 61c. Corn—Cash 21c; September, 21 1/2c; December, 22 1/2c; August, 21c. Oats—Cash, 18c bid; September, 18c; August, 18c.

Kansas City Produce. KANSAS CITY, Aug. 17.—Butter—Creamery, extra fancy separator, 13c; firsts, 12c; dairy, fancy, 12c; fair, 10c; store packed, fresh, 7@8c; packing stock, 7c. Eggs—Strictly candied stock, 7 1/2c per doz. Poultry—Hens, 5 1/2c; roosters, 15c each; springs, 8c per lb.; turkeys, hens, 6c; gobblers, 5c; old, 4 1/2c; spring ducks, 7c; old, 6c; spring geese, 6c; pigeons, 7 1/2@8c per doz. Fruits—Peaches, home grown, 20@55c a peck; shipped stock, 1/2 bushel boxes, fancy, 40c; inferior stock, 3 1/2@3 3/4; 4-basket trays, extra fancy, 60@65c; inferior to good, 40@50c; 20-lb box (solid packed), 40@50c; Michigan stock, 25c per peck basket. Apples, Maiden Blush, 30@50c a bu.; common kind, 15@20c a bu.; other varieties, except fancy stand stock, sell from 40@50c a bu.; cooking, 20@35c; Maiden Blush, shipped stock, ranges from \$1.00@1.25 per brl.; sweet apples, 75c@81.00 per brl.; Siberian crabs, 50c a bu.; other varieties, 20c a peck. Grapes, Concord, Moore's Early and Wardens are the varieties on sale, and the values range from 15@20c a peck; white grapes for jelly purposes, 15@17 1/2c a peck. Potatoes—Home grown, 20@25c per bu. in a small way; in round lots, 17 1/2c; car lots, 20c. Sweet potatoes, new stock, 40@60c per bu.

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

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ROBT. C. WHITE Live Stock Commission Company KANSAS CITY STOCK YARDS.

Money loaned to responsible parties for feeding purposes. Market reports free upon application. Consignments and correspondence solicited. Stockers and feeders bought on order.

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GROWERS OF AND DEALERS IN

Cattle, Hogs and Sheep

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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.

## The Poultry Yard

### SIMPLE EGG TESTER.

No Poultry Keeper Should Be Without One of Them.

One thing that is very essential in hatching by either the artificial or the natural way is an egg tester. Most incubator companies send a tester with every machine they sell, free of charge.

For those who are not so fortunate as to have one I will tell you how to make the kind I use at present. First, saw off two pieces 16 inches long from a hard pine board three-quarters of an inch thick and six inches wide; also two pieces 16 inches long from a pine board nine inches wide and one-half an inch thick, marking one with the figure 1 and the other 2. In one end of No. 1 saw three notches like the letter V. About seven inches from one end of No. 2 bore a hole large enough to place a piece of thick magnifying glass (those round disk-like glasses found on the sides of many lantern globes will do).

The center of the hole should be seven inches from the end, whatever the size of the hole.

On one side of No. 2 nail around the hole a square frame of cleats 5x5, the cleats being an inch square. (See Fig. 1.) This done, cut out a piece of leather about 4½ inches square. In the center of this cut an oval or egg-shaped hole about 1½ inches long and 1 inch wide at its widest point. Nail this on the frame just made and nailed around the hole; then nail the four boards in the form of a box, placing No. 1 and No. 2 opposite each other. Be sure and have the end of No. 1 that has the notches cut in it placed down

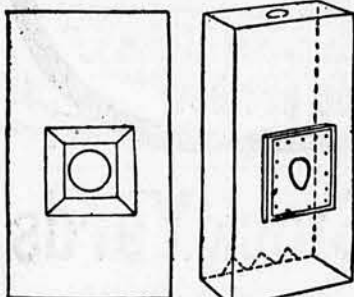


FIG. 1.

FIG. 2.

and the end of No. 2 nearer the hole down also.

Then cut out a piece of heavy tin large enough to cover the top part of the box. In the center of this cut a two-inch hole for the fumes of the lamp to pass through, and nail it on the top end, and your box or tester will look as shown in Fig. 2. Now nail a piece of very bright tin, or a reflector, 6x6 inches on the inside of the box just opposite the hole with the glass in it.

It is now ready to be placed over a lamp, which should be just high enough that the flame will come up level with the center of the hole with the glass in it. By placing an egg on the egg-shaped hole in the leather over the hole with the glass in it you will be able to see the required results. Use a No. 2 burner lamp and test the eggs in a warm, dark room.—Western Rural.

#### Ground Bone for Poultry.

Probably no people in the world waste so much as the Americans, simply because no people have so much that can be wasted. It seems a great loss when we consider the vast quantities of bone going to waste every day. This can be easily ground with small outlay for a bone grinder or cutter. The elements that are found in green bone are those of great value to the hen. She uses a part to make bone and a part to make egg shells and some of it even goes to make muscle; for lime is not the only thing found in the bone in its green state. Bones can be obtained from the butcher at a very low price, and in country places can doubtless be had for the asking. We as a people should save the vast amount of valuable food matter going to waste in the form mentioned.—Farmers' Review.

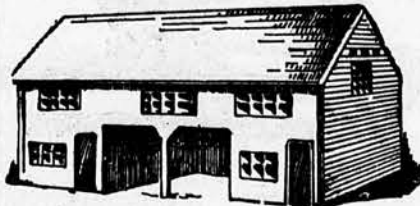
Success in the poultry yard is not so much in the hatching as in the feeding.

Late hatched chickens should be well fed and kept growing if possible. Unless this can be done, they will never make large birds.

### COMBINATION HOUSE.

A Convenient Building Suitable for Poultry and Pigeons.

A correspondent furnishes us with the drawing of a building suitable for poultry and pigeons. The lower story affords two rooms and a scratching shed for poultry. Each room may be used for a separate flock, having its own



COMBINATION HOUSE.

yard, or one may be kept for a laying-room and the other for the roosting-room.

The upper story is intended for pigeons, and has an entrance for the attendant opening from the shed below. It would be better to have a small room in the upper story reserved for the storage of feed.

The dimensions of this house are not stated, but the principle may be adapted to any size and to the requirements of the builder. In any case the corner posts should not be less than 12 feet.—Farm Journal.

#### Effective Cure for Roup.

One of the best, cheapest and most cleanly cures for roup in fowls is said to be sulphur, alum and magnesia, equal parts, in the form of a powder. We have had no experience with it, but give it as it was tried by a poultry raiser and found to be very effective. He got a sort of dry powder sprayer, such as is used in applying insect powder, and applied the mixture to a hen having the roup. The effect was a cure, and he has since recommended his remedy. The powder should be blown over the head of the fowl, and into the eyes, throat and nostrils. When there is canker in the fowl, the cankerous growth should be removed with a blunt stick and the powder applied over the affected parts thoroughly. This will effect a cure.—Dakota Field and Farm.

#### A Dirty Poultry House.

The great drawback to the many in poultry culture is disease. Many are deterred from buying good stock on account of possible disease. The main trouble in this line is want of care. Other stock on the premises get reasonable care, but the poultry have to care for themselves because of the general opinion that they amount to but very little. One neighbor lately said: "I don't see what is the matter with my chickens. I clean the hen-house every year, and nearly every season have cholera among them." What farmer should expect success with animals and give them such care? The poultry house should be cleaned once a week and often disinfected with lime or carbolic acid.—G. W. Fry, in Farmers' Review.

#### Special Foods for Poultry.

Philip Snyder, writing in the Country Gentleman, thinks the hen's gizzard is a sort of chemical laboratory that converts the disgusting and repulsive things she may eat into wholesome and savory egg meat, but an exclusive diet of nastiness might in time affect the quality of the eggs. She has too much sense, however, to confine herself to such food, and may be allowed to eat anything she wants to. Mr. Snyder's idea is that too much stress is given of late to the notion that special foods should be fed in order to produce wholesome eggs.

#### 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.

We will give One Hundred Dollars for any case of deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free.

F. J. CHENEY & CO., Toledo, O.

Sold by druggists, 75c.

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MISSOURI  
St. Louis.  
RED SEAL  
St. Louis.  
SOUTHERN  
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JOHN T. LEWIS & BROS. CO.  
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WHAT IS BRIGHTER, more attractive, than the homestead painted white, with green blinds? It may not suit the critic, but we like it and it will please the owner. Painted with

## Pure White Lead

and Pure Linseed Oil, it will look fresh and clean longer than anything else; if properly applied, it will not scale, chip, or chalk off, but forms a perfect base for subsequent repainting; is therefore economical.

To be sure of getting Pure White Lead, examine the brand (see list of genuine brands). Any shade of color desired can be easily obtained by using NATIONAL LEAD CO.'s brands of Pure White Lead and Tinting Colors.

Pamphlet giving valuable information and card showing samples of colors free; also cards showing pictures of twelve houses of different designs painted in various styles or combinations of shades forwarded upon application to those intending to paint.

NATIONAL LEAD CO.,  
1 Broadway, New York.

## WE SELL DIRECT TO FARMERS.



Three-wheel Rake.....\$16.50  
Two-wheel Rake.....14.50

Sections, with rivets......06  
Guards......32  
4½-foot knife..... 2.75  
5-foot knife..... 3.00  
6-foot knife..... 3.25

We have them for every machine in the world.

Write for our Complete Hay Tool Catalogue.

THE KANSAS CITY MACHINERY CO., 1006 Hickory St., Kansas City, Mo.

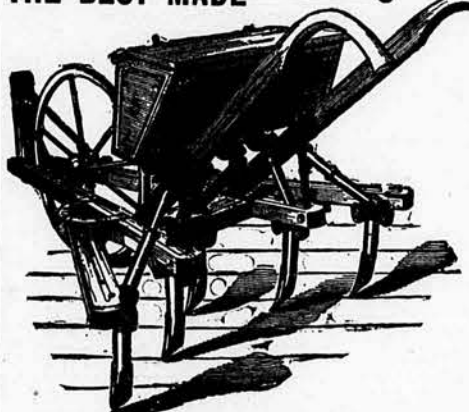
## WE MAKE WHEELS, TOO!

We make them easy-running, durable, satisfactory, and the finish is far beyond any other you have ever seen. . . . .

Our Catalogue gives you a full description. If you want one we will send it, if you will drop us a line.

National Sewing Machine Co., Belvidere, Ill.

### THE BEST MADE



### FIVE HOE DRILL

The outer hoes are regulated by springs which adjust themselves automatically. It is the shortest, lightest and best-constructed Drill on the market.

### THE FEED IS PERFECT

and can be adjusted to seed any quantity desired.

Weights only 100 pounds and draft less than any other.

See it and you will have no other.

SOLD BY

FERGUSON IMPLEMENT CO.  
1217-1219 Union Ave., Kansas City, Mo.

## DEAD • EASY!

The Great Disinfectant Insecticide  
KILLS HEN LICE

By simply painting roosts and dropping-boards. Kills Mites and Lice, cures Colds and Cholera, also kills Hog Cholera germs. If your grocer or druggist does not keep it, have them send for it.

THOS. W. SOUTHWARD,  
General Agent, 1411 Main St., Kansas City, Mo.

## To Cripple Creek

—VIA COLORADO SPRINGS

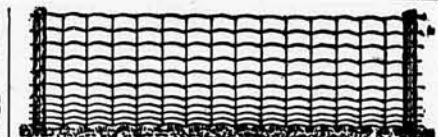
The Chicago,  
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Railway is

4 hours quicker

To Cripple Creek  
than any other line.

Full particulars by addressing  
JOHN SEBASTIAN, G. P. A., Chicago.

\$4.00 DO YOU WANT A JOB SEND  
SELL AT SIGHT 25c  
FOR SAMPLE  
EASILY MADE STAR NAME FASTENER CO. CHICAGO, ILL.



## The Cream, Please! Thanks!

We sell fence for the best railways in the country, hundreds of miles each, in many cases. Sell the National, State and City Governments for parks, etc. Have also a long list of millionaire customers with game preserves, and country residences, yet more than two thirds of our immense output goes to practical every day farmers. Through no fault of ours, they are of the more intelligent and successful class. Write for evidence.

PAGE WOVEN WIRE FENCE CO., Adrian, Mich.



Instantly and positively prevents flies, gnats and insects of every description from annoying horses and cattle. It improves the appearance of the coat, dispensing with fly-nets. Applied to cows it will give them perfect rest, thereby increasing the quantity of milk. It is also a positive insecticide for plants. We guarantee it pure, harmless and effective. Recommended by thousands using it. One gallon lasts four head an entire season. Price, including brush, quart cans, \$1.00; half-gallon, \$1.75, and one gallon, \$2.50. Beware of imitations. Made only by The Crescent Manufacturing Co., 2109 Indiana Avenue, Philadelphia.

**"JONES HE PAYS THE FREIGHT."**  
**Farm and Wagon SCALES.**  
 United States Standard. All Sizes and All Kinds.  
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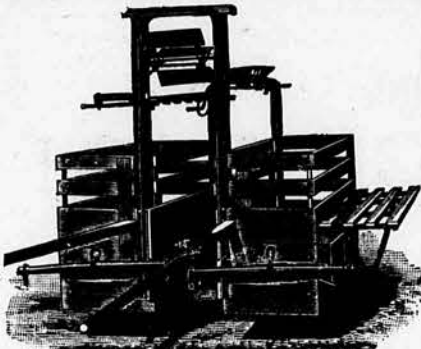
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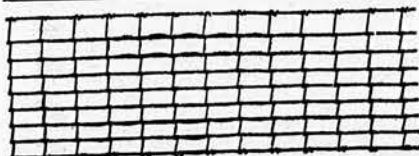
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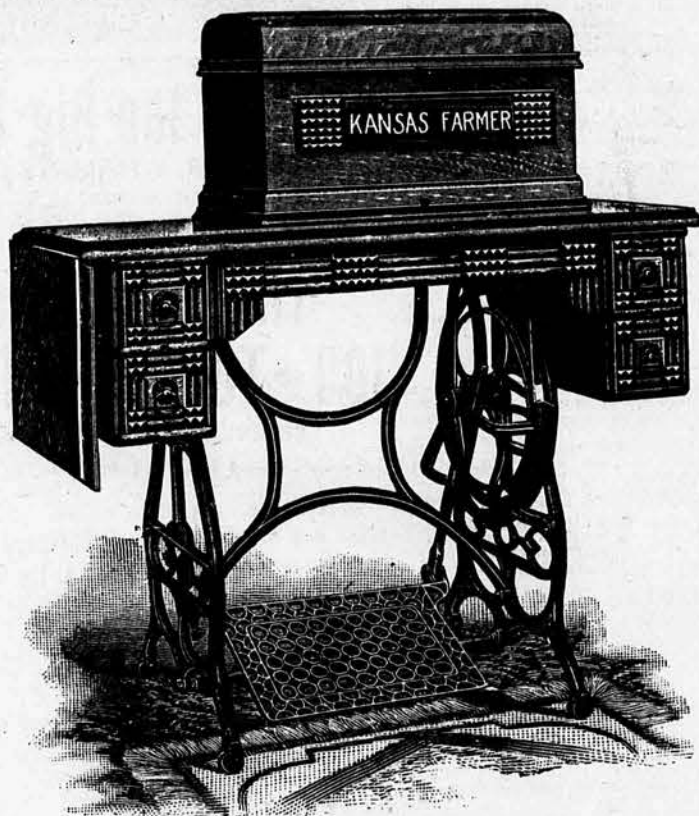
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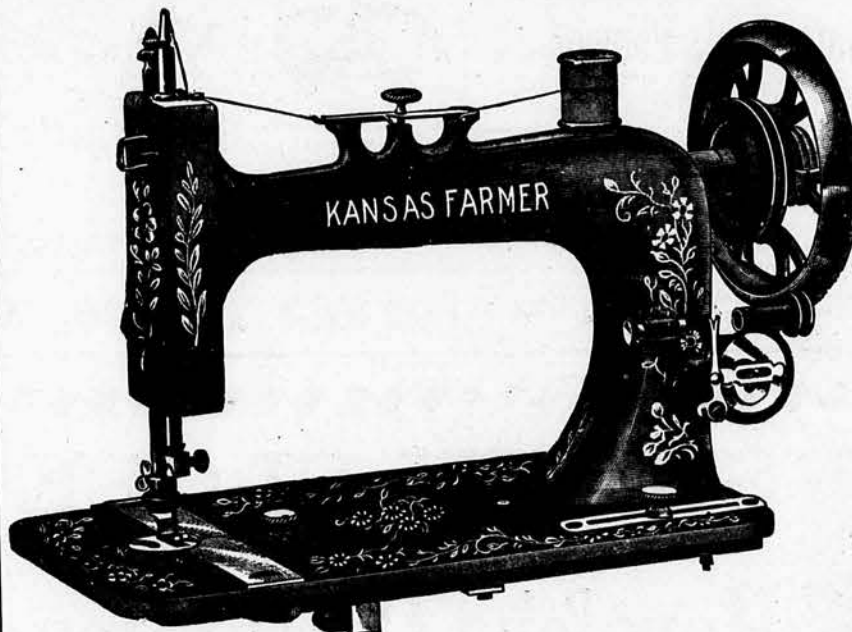
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This machine is of the same high  
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**We Claim for It** That it has all the good points found in all other machines  
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**The Attachments** supplied without extra charge are of the latest design,  
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**The Accessories** include twelve Needles, six Bobbins, Oil Can filled with oil,  
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 Certificate of Warranty good for five years, and elaborately illustrated Instruction Book.

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Train will leave Kansas points Sunday,  
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 The equipment of train will be High-Back  
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Falling Sexual Strength in old or young men can be  
 quickly and permanently cured by me to a healthy  
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**NERVOUS DEBILITY,  
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 send the recipe of this remedy absolutely free of  
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## 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.

**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; 560 acres; good buildings, house, barn, sheds, cribs; fenced and cross-fenced; 150 acres under plow; 60 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. Out 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 elder mill, three miles west of Kansas Ave., 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.**—Crulckshank-topped, for sale. Choice animals of splendid breeding. Address Peter Sim, Wakarusa, Shawnee Co., Kas.

**SHORT-HORN BULLS FOR SALE.**—Crulckshank and Bates breeding. Sired by Valley Champion 10477. Address C. Chambers, Mont Ida, Anderson 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, 900 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.

## SPECIAL WANT COLUMN--CONTINUED.

**DISEASES OF YOUNG AND OLD MEN.**—Private and skin diseases a specialty. Wm. H. Righter Ph. G. M. D., 505 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.

**GREAT BOAR, ROYAL PERFECTION 13159 S.**—A son of King Perfection 11315 S. and out of Tecumseh Model 30895 S., for sale. King Perfection was a first-prize winner State fairs and won sweepstakes at St. Louis fair in 1894. Was afterwards sold for \$1,000. Royal Perfection is a sure breeder, his get good ones. Can't be used longer in our herd. Will sell him at hard-times prices. T. E. Martin & Bro., Fort Scott, Kas.

## THE STRAY LIST.

FOR WEEK ENDING JULY 30, 1896.

Cherokee county—T. W. Thomason, clerk.

**HORSE.**—Taken up by R. W. Miller, in Logan tp., July 10, 1896, one sorrel horse, sixteen hands high, both hind feet white; valued at \$12.50.

**HORSE.**—By same, one bay horse, white hind feet, white spot in forehead, branded 8 on left shoulder; valued at \$12.50.

Cheyenne county—G. A. Benkelman, clerk.

**MARE.**—Taken up by Jacob Weist, in Cleveland Run tp. (P. O. St. Francis), May 15, 1896, one sorrel mare, 3 years old, branded 1 inside of larger U; valued at \$15.

**MARE.**—By same, one gray mare, 6 years old, brand and value same as above.

**COLT.**—By same, one yearling mare colt, roan; valued at \$10.

FOR WEEK ENDING AUGUST 6, 1896.

Wilson county—T. D. Hampson, clerk.

**HORSE.**—Taken up by W. R. Burkopple, 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 B. 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 Barnard 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.

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For Hog Lice, Chicken Lice, Horn-fly, Sheep Tick and Maggots and Hog Cholera. Nothing equals Bannerman's Phenyle as a germicide. It is all that is claimed for it. A trial package, 5-pound can, \$1, or 25-pound pail, \$3.50. Once tried you will not be without it. Mention this paper. For full particulars address The Anglo-American Stock Food Co., 113 Adams St., Chicago, Ill.

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CLOVERS  
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GRASS SEEDS.

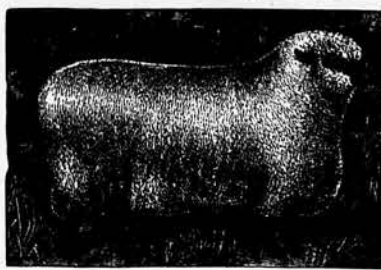
SEEDS

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The home of the great breeding boar, SIR CHARLES CORWIN 33095. Our 1896 crop of pigs are by six different boars and out of fashionably bred sows, including such grand individuals as the prize-winning \$500 Lady Longfellow 34099 (S.), that has eight pigs by the prize boar, King Hadley. STOCK FOR SALE at all times and at very reasonable prices. We also breed Short-horn cattle. Write or come and see us.

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A choice lot of yearling and two-year-old rams, sired by Rector 94 and Grand Delight 2d and other noted rams, and a grand lot of imported and American-bred ewes. Prices in keeping with the hard times and the quality.

KIRKPATRICK & SON,  
Connors, Wyandotte Co., Kas.

## Wait for the Big Sale of Poland-Chinas

CONNORS, WYANDOTTE CO., KAS., SEPTEMBER 29, 1896.

KIRKPATRICK & SON, at Riverview farm, will sell seventy-five head of tops. Twenty sows bred to the great Hadley Jr. Sows sired by Chief I Know, Black U. S. King Perfection, Hoosier Boy 2d. Sows rich in blood of Chief Tecumseh 2d through Chief I Know and L's Tecumseh, and pigs by Hadley Jr. and Wilkes Sanders. Catalogues ready; sent free.

THE GREAT COMBINATION SALE!  
100 ♦ TOP-BRED POLAND-CHINAS ♦ 100  
RESERVE, BROWN CO., KAS., WEDNESDAY, SEPTEMBER 2, 1896.

At the State Line Stock Farm of Bert Wise, one and a half miles northeast of Reserve, Brown county, Kansas.

Here is the blood and merit that wins and sells. Paste this in your hat.

Butler's Darkness 6846 and King Butler 620 blood at the top, but all the leading families are represented.

For full description of animals and pedigrees send for catalogue, which also contains historical information of value to every breeder.

WRITE TO EITHER

BERT WISE, Reserve, Brown Co., Kas. FRANK DAESCHNER, Preston, Rich'dsn Co., Neb.

COL. F. M. WOODS, Auctioneer. Sale will be under cover. Free entertainment.

SEVENTY-FIVE HEAD. SEVENTY-FIVE HEAD.

GREAT COMBINATION SALE OF  
POLAND-CHINAS!

At Quality Place, the home of Quality Herd, the World's Fair Winners, one mile north of Santa Fe depot.

HUTCHINSON, KAS., THURSDAY, SEPTEMBER 10, 1896, 10:30 A.M.

Consisting of aged and yearling sows safe in pig, six-months sows, trios (two sows and one male), yearling, under 1 year and six-months males, sows with pigs by their sides. Also a half interest in the great Darkness Quality 1436, the greatest boar in the United States to-day—girth and flank 73 inches, length 70, leg 94. A prize-winner, whose breeding cannot be surpassed and a No. 1 sire. Dam, the great \$500 Darkness F. 7322. This fellow is of the World's Fair litter (October, 1893). The Black U. S. King Butler, Darkness, Wilkes, Tecumseh, Lawrence Perfection—in fact, the offering is loaded to the gunwale with the great World's Fair winners' breeding, as well as other leading strains. Catalogues now ready.

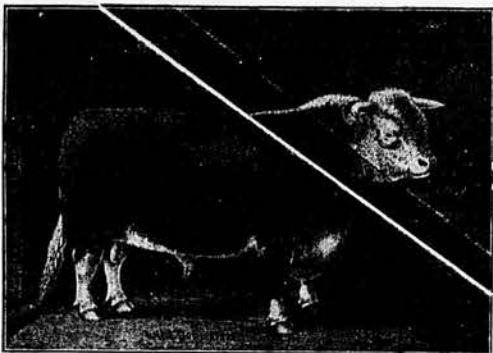
Also a choice draft from the Standard Herd of Poland-Chinas, owned by L. Nation, Hutchinson, Kas.

Bids by letter or wire treated as fairly as though bidder were present. Free lunch at noon. Lodging at our expense. Street car line runs within eighty rods of sale. Come and secure some of the best breeding on earth. Address

Or, Col. S. A. Sawyer, Auctioneer, WILLIS E. GRESHAM, Hutchinson, Kas.

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WILD TOM 51592.

Sweepstakes bull Wild Tom 51592. Weight when thirty-four months old 2,205 pounds in show condition. He is the best living son of Beau Real 11055. Dam Wild Mary 21238. Winnings:—Iowa State Fair, 1895, first in class, first in special, first in sweepstakes, and Silver Medal; Kansas State Fair, first in class, first in special at head of herd, first bull and four of his get.

FARM—Two and a half miles northwest of city. We furnish transportation to and from the farm if notified.

## SUNNY SLOPE FARM

♦♦♦♦♦ EMPORIA, KANSAS, ♦♦♦♦♦

## Hereford Cattle Headquarters

Sunny Slope Farm is one of the largest breeding establishments in the United States. Three sweepstakes bulls in service—Wild Tom 51592, Climax 60942, Archibald VI. 60921, also the great breeding bull, Archibald V. 54433, who was the sire of two sweepstakes animals (Archibald VI., sweepstakes under one year of age, and Miss Wellington 5th, sweepstakes heifer over all beef breeds when twelve months and twenty days old. We have thirteen serviceable bulls for sale, ranging from eight to twenty months old. We also have forty bulls for sale, ranging from five to eight months old. Also a choice lot of heifers and cows. We combine the blood of Anxiety, Lord Wilton and Grove 3d. Breeders are invited to inspect our herd.

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EMPORIA, KANSAS.