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Agricultural Matters.

SOIL FERMENTS IMPORTANT IN AGRICULTURE.

By H. W. Wiley, Chief of the Division of Chemistry, United States Department of Agriculture, from the Yearbook of the United States Department of Agriculture for 1895.

(Continued from last week.)

FERMENTS INIMICAL TO AGRICULTURE.

It has been noticed by many observers that when nitric acid is subjected to certain fermentative processes it becomes decomposed and gradually disappears. In studying the causes which lead to this decomposition it is found that it is due to the action of a micro-organism or ferment, which, by reason of the result of its functional activity, is called a denitrifying organism. While it is true that in numbers and activity this denitrifying organism does not equal its nitrifying relation, yet it is a matter of no inconsiderable importance to know fully the laws which govern its existence. As in the case of bacteria which are found in ripening cream, where some produce evil and some good effects, so it is also with those in the soil. The favoring organisms, whose functional activity prepares nitrogen in a form suited for plant feed, are accompanied by others, doubtless nearly related to them, whose functional activity tends to destroy the work which the first have accomplished. It thus happens that in the fermentation of nitrogenous bodies there is danger of losing, as has already been said, a part of the nitrogen, which may either escape as gaseous oxides unsuited for the sustenance of plants, or even as free nitrogen. The object, or at least the practical object, of the investigation of these denitrifying organisms should be to discover some process by which their multiplication could be prevented and their activity diminished. At the present time all that is known is that in favoring circumstances these organisms are not developed in sufficient numbers to prove very destructive. It has already been mentioned, however, that in case of a very great excess of organic nitrogenous matter a considerable quantity of the nitrogen therein contained may, through the action of these organisms, be lost. The practical lesson taught here is to apply nitrogenous foods in a moderate manner and avoid every unnecessary excess.

PATHOGENIC FERMENTS.

There are also other forms of ferments in the soil of an objectionable nature which are not related to the nitrifying organism. It has been observed in France that in localities where animals are interred which have died of charbon the germs of this infectious malady persist in the soil for many years, and that, especially when cereal crops are cultivated upon such soils, there is great danger of contaminating healthy cattle with the same disease. In one case it was observed that many sheep which were pastured in a field in which, two years before, a single animal which had died of charbon was buried, were infected with the disease and died. In like manner, it is entirely probable that the germs of hog cholera may be preserved in the soil for many years to finally again be brought into an activity which may prove most disastrous for the owners of swine. Every effort should be made by agronomists to avoid infecting the soil by the carcasses which are dead from any zymotic disease. Cremation is the only safe method of disposing of such infected carcasses. The investigations of scientists have shown that there are many diseases of an infectious nature due to these germs, and that these germs may preserve their vitality in the soil. Among others may be mentioned yellow fever and tetanus.

USE OF SEWAGE AS FERTILIZER.

For the reasons given above, the agronomist who also has at heart the health and welfare of man and beast can hardly look with favor upon any of the plans which have been proposed for the use of sewage from large cities for irrigation purposes. There is scarcely a time in any large city when some infectious disease, due to the

activity of germs, does not exist, and the sewage is liable at all times to be contaminated therewith. In view of the fact that the vitality of the germs mentioned above may be continued for a long time in the soil, it is fair to conclude that it is of the utmost importance to avoid the contamination of the soil where it is to be used for agricultural purposes, with any of the dejecta which may come from those infected with any zymotic disease whatever.

THE STORAGE OF NITRATES.

Attention has already been called to the fact that the activity of the nitrifying ferments in a soil is, as a rule, greater than the needs of the growing crop. For this reason the waters of drainage are found to be more or less impregnated with nitrates. The sea is eventually the great sorting ground into which all this waste material is poured. The roller processes of nature, like the mills of the gods, grind exceedingly slow and small, and the sea becomes the bolting cloth by which the products of milling are separated and sorted out. Not only do the drainage waters carry nitrates, but also potash, phosphoric acid, lime, and other soluble materials of the soil. As soon as this waste material is poured into the sea, the process of sifting at once begins. The carbonate of lime becomes deposited in vast layers, or by organic life is transformed into immense coral formations or into shells. Phosphoric acid is likewise sifted out into phosphatic deposits or passes into the organic life of the sea. Even the potash, soluble as it is, becomes collected into mineral aggregates or passes into marine animal or vegetable growth.

All these valuable materials are thus conserved and put into a shape in which they may be returned sooner or later to the use of man. In the great cosmic economy there is no such thing as escape of any valuable material from usefulness. The nitrates which are poured into the sea are sooner or later absorbed by the seaweed or other marine vegetation, or serve for the nourishment of the animal life of the ocean. It is highly probable that the great deposits of nitrates found in certain arid regions, notably in Chile, are due to the decomposition of marine vegetation. There must be present in the sea vast fields of vegetation which, growing in water largely impregnated with nitrates, become highly charged with organic nitrogenous matter. In the changes of level to which the surface of the earth is constantly subjected, the depths of the sea often become isolated lakes. In the evaporation of the water of these lakes such as would take place in arid regions, immense deposits of marine vegetation and common salt, would occur. In the oxidation and nitrification of this organic matter, due to fermentative action, the organic nitrogen would be changed into the inorganic state. In the presence of calcareous rocks the nitrate of calcium would be formed, which finally, by double decompositions, would result in the formation of nitrate of soda, the form in which these deposits now exist. The fact that iodine is found in greater or less quantity in these deposits of soda salt-peter is a strong argument in favor of the hypothesis that they are due to marine origin. Iodine is found only in sea and never in terrestrial plants. Further than this, attention should be called to the fact that these deposits of nitrate of soda contain neither shells nor fossils, nor do they contain any phosphate of lime. It is hardly credible, therefore, that they are due to animal origin. The activity of ferments in these great deposits of marine plants, although taking place perhaps millions of years ago, has served to secure for the farmers of the present day vast deposits of nitrate of soda which prove of the utmost value in increasing the yield of the field. To every quarter of the globe where scientific agriculture is now practiced these deposits are sent. They are of such vast extent that it is not likely they will soon be exhausted, and the labors of the agriculturist for many hundreds of years to come will continue to be blessed by reason of the activity of the insignificant microscopic ferments

which plied their vocation in past geological epochs.

Because at the present time there are no known deposits of marine vegetation undergoing nitrification, is no just reason for doubting the accuracy of the above-mentioned hypothesis. Our geologists are not acquainted at present with any locality in which deposits of phosphate are taking place, but the absence of the process cannot be used as a just argument against any of the theories which have been proposed to account for the immense deposits of this material which are found in various parts of this and other countries. Another illustration of this point may be found in the coal deposits. The environment which determines the geologic conditions now is not favorable to the development of large quantities of organic matter from which coal might be produced by changes in the level of the earth's surface. In fact, all the teachings of paleontology show beyond a doubt that life in the past geological ages was on a far larger scale than at present. In those remote times the mean temperature of the earth's surface was very much greater than it is at the present time. There are many indubitable evidences of the fact that high equatorial temperatures prevailed even at the poles, while the present tropic and temperate zones were probably too warm for any forms of life which now exist. The fossil remains of animals and plants of those ages show the gigantic scale on which all animal and vegetable life was formed. When crocodiles were nearly seventy feet in length and dragon flies three feet long it is not surprising that both terrestrial and marine vegetation existed in a far more exuberant form than at present. The dense terrestrial vegetation which made the coal deposits possible were doubtless equalled by marine vegetable growth capable, by oxidation under favorable circumstances, of forming the vast deposits of nitrates which have been discovered in various parts of the world. The depression of the surface of the land which enabled the coal measures to be developed beneath the surface of the sea, was doubtless compensated for by the elevation of the marine forests into a position favoring the deposits of nitrates. The wonderful conservative instincts of nature are thus demonstrated in a most remarkable manner in restoring to the fields the nitrates leached therefrom in past ages.

GENESIS OF GUANO.

The fermentative action of germs in the production of nitrates on a small scale and their storage to a limited extent are found going on in many caves at the present time. In these localities large numbers of bats formerly congregated, and the nitrogenous constituents of their dejecta and remains, collecting on the floors of caves practically devoid of water, have undergone nitrification and become converted into nitric acid. In a similar manner the deposits produced in rookeries, especially in former ages, have been converted into nitric acid and preserved for the use of the farmer. The well-known habits of birds in congregating in rookeries at night and at certain seasons of the year tend to bring into a common receptacle the nitrogenous matters which they have gathered and which are deposited in their excrement and in the decay of their bodies. The feathers of birds are particularly rich in nitrogen, and the nitrogenous content of their flesh is also high. The decay of the remains of birds, especially if it take place in a locality practically excluded from the leaching action of water, serves to accumulate vast deposits of nitrogenous matter, which is at once attacked by the nitrifying ferments. If the conditions in such deposits are particularly favorable to the process of nitrification, the whole of the nitrogen, or at least the larger part of it which has been collected in these debris, becomes finally converted into nitric acid, and is found combined with appropriate bases as deposits of nitrates. The nitrates of the guano deposits and of the deposits in caves, as has already been indicated, arise in this way. If these deposits be subject to moderate leaching the nitrates may become infiltrated

SPECIFIC FOR SCROFULA.

"Since childhood, I have been afflicted with scrofulous boils and sores, which caused me terrible suffering. Physicians were unable to help me, and I only grew worse under their care. At length, I began to take



AYER'S

Sarsaparilla, and very soon grew better. After using half a dozen bottles I was completely cured, so that I have not had a boil or pimple on any part of my body for the last twelve years. I can cordially recommend Ayer's Sarsaparilla as the very best blood-purifier in existence."—G. T. REINHART, Myersville, Texas.

AYER'S

THE ONLY WORLD'S FAIR
Sarsaparilla

Ayer's Cherry Pectoral cures Coughs and Colds

into the surrounding soil. The bottoms and surrounding soils of caves are often found highly impregnated with nitrates.

(To be continued.)

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. H. Hove, Secretary, Hiawatha; September 15-18.
Chase County Agricultural Association—H. F. Gillett, Secretary, Cottonwood Falls; September 15-18.
Cloud County—Concordia Fair Association—Homer Kennett, Secretary, Concordia; September 29-October 2.
Coffey County Fair Association—J. E. Woodford, Secretary, Burlington; September 15-19.
Douglas County—Sibley Agricultural Association—Wm. Bowman, Secretary, Sibley; September 16-18.
Finney County Agricultural Society—D. A. Mims, Secretary, Garden City; October 6-9.
Franklin County Agricultural Society—Chas. H. Ridgway, Secretary, Ottawa; September 22-25.
Greeley County Horticultural and Fair Association—I. B. Newman, Secretary, Tribune; September 8-9.
Jackson County Agricultural and Fair Association—S. B. McGrew, Secretary, Holton; September 14-18.
Johnson County Co-operative Fair Association—O. 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 20-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.
Sedgewick 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.

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.

The Stock Interest.

THOROUGH-BRED 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 17—W. H. Wren, Poland-Chinas, St. Joseph, Mo.
OCTOBER 1—E. E. Axline, Poland-Chinas, Oak Grove, Jackson Co., Mo.
OCTOBER 23—Gudgell & Simpson and J. A. Funkhouser, Herefords, Independence, Mo.
OCTOBER 30—J. R. Killough & Sons, Poland-Chinas, Richmond, Kas.

CORN STALK DISEASE.

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

For many years, ever since corn has been grown extensively in this State, it has been a common practice to gather the corn from the standing stalks and then turn cattle into the stalk fields, thus utilizing as forage quite a large portion of the stalks that would otherwise be wasted.

Since the practice of pasturing the stalk fields during the fall and winter has been followed, there have been serious losses reported among cattle that were running in the stalk fields. To the disease or condition which has caused the death of cattle under these circumstances the term "corn stalk disease" has been applied. While there are objections urged against this name by those who are of the opinion that the cause of death is indigestion, and also by others who believe that the cause of death is a poison, yet it seems best, by virtue of long usage and common interpretation, to use the well-understood term "corn stalk disease" until the real nature of the disease is determined positively, and not manufacture new names which will only serve to confuse.

The corn stalk disease is extremely difficult to study satisfactorily, owing to the uncertainty of its occurrence, the varied conditions and circumstances under which it occurs, and the rapid course of the disease. It is rarely that a person can respond to a call to investigate this disease, if necessary to go any distance, and find an animal sick with the disease, and *post-mortem* examinations do not furnish conclusive or satisfactory evidence as to the cause of death.

The loss to the live stock industry of this State is difficult to estimate, but it is probably greater than that caused by any other disease except hog cholera. It has been estimated that the loss from this disease in the State of Nebraska during the fall and winter of 1889-90 was about \$60,000. It is probable that this State suffers greater losses than any other on account of the large acreage of corn, the great number of cattle handled, and the usually mild winters, offering favorable opportunities for pasturing cattle in the stalk fields until mid-winter or later. While the losses in the aggregate and often individually are severe, it is the opinion of many stockmen of experience that if cattle are carefully handled it pays to pasture the stalk fields; that the gain from utilization of the forage more than compensates for the losses of cattle which die from eating it.

There is a great diversity of opinion as to whether the corn stalk disease is increasing or decreasing in prevalence in recent years. The opinion seems to vary with the seasons; if there have been quite severe losses in a neighborhood in a season the opinion prevails that the disease is on the increase, and *vice versa*. It seems that the losses at the present time are not proportionately as great as they were in former years, but this may be accounted for, partially, at least, by the better conditions surrounding cattle at the present time, both as regards food and shelter.

The corn stalk disease is not confined to any particular part of the State, but is liable to occur wherever corn is grown and the stalk fields pastured, especially if the pastures are dry and there is no laxative green food. From reports which I have observed the disease seems to prevail most extensively in a belt comprising the central two-thirds of the State. The less frequent reports from the extreme west may be accounted for by the small amount of corn grown. In the extreme

eastern part of the State the reports may not have come under my notice, or it may be, as the country is divided into smaller farms and fewer cattle, the conditions for serious outbreaks of the disease would not be so great, while the proportionate loss may be fully equal to any other part of the State. The greater abundance of tame grasses, especially blue grass, which remains green later in the season, may also have some effect on lessening the prevalence of the disease.

The prevalence of the corn stalk disease varies in different years, being most prevalent in years when there has been a large corn crop. This may be accounted for, partially at least, by the increased growth of stalks, which contain a relatively larger amount of indigestible material. It is noticed that the disease seldom occurs where the stalks are small and fine. More cattle are probably pastured in the stalk fields on account of the larger amount of stalks, and thus increase the fatalities.

Outbreaks of the disease are more likely to occur with, or to follow closely after storms, especially cold rain storms. While the disease occurs at other times, the increased prevalence with or following storms seems remarkable. Whether this increase is due to the wet condition of the stalks, or whether it is caused by the well-known tendency of animals to eat large quantities of food just preceding a storm, or whether it is caused by a lowered vitality of the animal brought on by the storm, or to a combination of these, it is difficult to say.

The disease also seems more likely to occur when cattle are just turned into the stalk fields or changed from a stalk field that has been pastured to a new stalk field which has not been pastured. The increased tendency to the disease under these circumstances may be the result of indigestion, which was induced by a change of food when first turned into the stalk fields. It is well known that a sudden change of food in animals is liable to cause indigestion. Or the increase in the disease may be caused by engorgement or from some injurious or poisonous substance which may be upon or contained in the corn stalks themselves.

There is also a tendency for the disease to attack younger cattle, yearlings and two-year-olds, in preference to older cattle. Whether this increased mortality is caused by indigestion induced by incomplete mastication, due to shedding of temporary teeth and cutting of the permanent teeth, or whether it may be due to the fact that the digestive organs of young cattle are not mature enough to thoroughly digest such coarse food, or it may be due to the susceptibility of younger animals to poisons; for it is well established that younger animals require proportionately smaller doses of poison to affect them seriously than older animals.

The corn stalk disease occurs under a great variety and apparently diverse conditions. It may occur in one bunch of cattle, while another bunch of cattle in an adjoining field under apparently the same conditions are not affected. This great variation in the occurrence has resulted in many theories which have been advanced by stockmen and others as to the probable cause of the disease.

CORN SMUT.

A very common theory that has been held for some time is, that the disease is caused by eating corn smut (*Ustilago maidis*). Corn smut is a fungus which attacks the growing corn stalk or ear of corn. As the corn matures the smut is readily recognized by the presence of large dark brown or black masses of spores. Cattle will often eat this corn smut quite readily, whether it is on corn stalks or corn in the field, or on fodder that has been cut and cured. As the corn stalk disease does not occur in cattle that are fed on corn fodder, even when the fodder contains unusually large quantities of the fungus, indicates that the corn smut is not especially injurious to cattle, and experimental evidence proves conclusively that corn smut is not injurious to cattle.

In 1868, Prof. John Gamgee, in inves-

tigating the corn stalk disease, fed experimentally forty pounds of corn smut to two cows, beginning with six and increasing to twelve ounces daily. The smut was fed with ground grain and chopped hay. To one cow it was given wet, to the other dry. The cow that received the wet ration gained in weight during the trial, the other lost in weight but both remained well.

Several years ago Mr. John Booth, a farmer living north from Manhattan, being of the opinion that corn smut was liable to produce corn stalk disease, took pains to gather the smut from the field. One night his cattle broke into the inclosure where the smutty corn and smut had been thrown out and ate all they wished. No injurious effects were noticed.

The Bureau of Animal Industry of the United States Department of Agriculture made two experiments of feeding corn smut to cattle under the direction of Dr. F. L. Kilborne, as follows:

"The load of corn stalks affected with smut (*Ustilago maidis*) removed from the field used in the preceding experiment (page 44) were fed to three two-year-old steers placed separately in box stalls in a barn on Mr. McCleary's farm. The animals had been in a corn stalk field for about five weeks prior to the feeding. They were fed exclusively on the smut-laden corn stalks and free smut mixed with a small quantity of a mixture of corn meal and wheat bran for seven days without ill effects. Owing to the absence of necessary appliances the weight of the animals and of the smut fed was not taken. It is safe to say that these animals consumed a much greater quantity of smut than the animals which died in the field. It was observed that the animals did not eat the smut readily in the field, and in this experiment the animals refused it until apparently hunger compelled them to eat. The mixing of mill feed with the pure smut made it more appetizing, and consequently a much larger quantity was eaten than otherwise would have been. The fact should be borne in mind that the smut used in this experiment came from a corn field in which several animals had died within five days after they were turned into it.

"(2) In December, 1893, six barrels of corn smut were collected from several corn fields in which cattle had not been turned, near Van Meter, Iowa, and shipped to the experiment stations of this bureau. This material comprised both abortive ears with the husks attacked by the smut and the masses of pure smut found growing on the stalk. The total weight was 280 pounds, of which at least one-half was smut.

"Two heifers, Nos. 238 and 284, 15 to 18 months old, were placed in separate box stalls. They were bedded with peat moss instead of straw, in order that the food should consist exclusively of the prescribed ration. They were allowed to run in a small yard (sixteen by thirty feet) for about five hours daily.

"During the experiment the animals were given all the well water they wished. They were not salted. The smut was apparently not relished by the heifers, especially by No. 238, so that it required considerable inducement to get them to eat the desired quantity.

"Beginning on the morning of January 17, 1894, and continuing until noon of February 2 (sixteen and one-half days), the heifers were fed morning and evening with from two to three quarts of a mixture of equal parts by weight of cut hay and a mixture of corn meal middlings and wheat bran, and sixteen quarts of smut. The actual quantity of the fungus consumed by No. 238 was sixty-one pounds, or a daily average of nearly three and seven-tenths pounds, and by No. 284 sixty-seven and one-half pounds, or a daily average of four and one-fifth pounds. The temperatures of the animals were taken every morning and evening. The animals appeared to be perfectly well throughout the time of feeding and continued so for several months, during which time they were kept under close observation." [Bulletin No. 10,

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United States Department of Agriculture, Bureau of Animal Industry, "Corn Stalk Disease and Rabies in Cattle."

In the winter of 1895-96 the Michigan Experiment Station also made some experiments in feeding smut to cows, some giving milk and others pregnant. They commenced with small doses of corn smut and increased until enormous quantities were fed. The experiment continued for one month. No bad effects were noticed either on the digestive or nervous systems, and of the animals giving milk the milk flow was not lessened.

In November and December, 1895, I had some corn smut collected from the college farm and other fields in the vicinity. One lot of 500 grams of pure smut was extracted with alcohol; the alcohol was then driven off by evaporation at the temperature of the room to thirty cubic centimeters. This was tested upon guinea pigs by giving them 2 and 3 c. c. doses. No ill effects were noticed.

Another test was made by taking the corn smut and steeping in distilled water slightly acidulated with sulphuric acid, and after filtration the filtrate was tested with the following reagents for the presence of an alkaloid or nitrogenous base which might be poisonous: Mayer's reagent, iodine and potassium iodide, sodium phosphomolybdate, and platinic chloride. No reactions were obtained, nor were any reactions obtained by testing the evaporated alcoholic residue by dissolving in acidulated water and testing with the same reagents.

Such a mass of evidence from many sources shows conclusively that corn smut is not injurious to cattle and consequently is not the cause of the corn stalk disease.

(To be continued.)

Hog Cholera--Government Prescription.

Inquiries as to the best preventives for hog cholera suggest the publication, at this time, of the prescription recommended by Dr. Salmon, of the Bureau of Animal Industry. It is:

1 part wood charcoal.
1 part sulphur.
2 parts sodium chloride (salt).
2 parts sodium bicarbonate (soda).
2 parts sodium hyposulphite.
1 part sodium sulphate.
1 part antimony sulphide.

Pulverize and mix thoroughly. Dose, one tablespoonful for each 200 pounds weight of hog once a day.

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.

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Irrigation.

DIFFERENT METHODS OF IRRIGATION.

The advantages of irrigation have been dwelt upon so much and the profits to be derived have been set out so persistently that a demand has been created for information as to practical details. The methods of securing the supplies of water have been dwelt upon so that most people are ready to give instruction about this branch of the subject. Or if there be a suspected shortage of knowledge on this score, it is only necessary to drop a hint to some of the many manufacturers of machinery and all doubt on this score will be met with positive assertion as to the means to apply. But the beginner finds himself lacking in knowledge of the practical details of the art, and is likely to conclude that there is a shortage of literature on this essential. That the young man may know that there is no dearth even here, we reproduce from the 1871 report of the United States Department of Agriculture the following, which was written and published before many an inquirer of to-day as born:

"There are several different modes of irrigation, and each of them has its peculiar crops and lands to which it is best adapted: 1. Bedwork; 2. Catchwater; 3. Warping; 4. Flooding; 5. Subterranean.

"*Bedwork irrigation.*—This is done by a series of hatches or sluices in the main ditch, on either side, opening into lateral branches, generally at right angles, and much smaller in size than the main, and generally, though not necessarily, at regular distances from each other; the land between each forming planes of sometimes thirty, forty or fifty feet each, with a water-branch running down their slopes, upon the old ridge and furrow principle, though the draining branch of the feeder ditch is slightly more marked than the old shallow furrow. These planes or ridges must vary in width and extent, according to the necessities of the case. If it is a soil hard to irrigate and hard to absorb, they must be smaller in measure across them. If the soil absorbs moisture readily, a longer distance across them will be sufficient. The crown of the ridge should not be over fifteen inches higher than the furrow. These lateral branches must all be carefully regulated as to the quantity of water necessary to effect the object, and, if possible, not have any waste or surplussage when the object is accomplished and the lowest point properly watered. A careful farmer, who has executive ability and understands the principle, can so regulate the water as to have scarce any surplussage, which is a very great consideration in dry localities. Care must also be taken that the surplussage, if any, should be carried off immediately, by proper drains, as standing water on crops is quite as disastrous as no water at all. Bedwork irrigation, however, will not pay in Colorado, because the land requires beveling and so much expense to be laid out upon it to prepare it for the water. The best irrigators there have entirely given it up, and prefer a medium plan of embodying the catchwater and flooding modes.

"*Catchwater irrigation.*—This is carried on upon quite a different principle. Lateral branches are used from the main ditch, as in the bedwork plan, but not in such numbers. Only one hatch and lateral is ordinarily used for one class of altitude slope or declivity. The water is taken from the main and passes down the slope a short distance, then takes a turn horizontally along the side or face of the slope, and sometimes parallel with the main ditch, continuing to the farthest point of the slope; it is then let down to a lower point, and returns on a lower parallel, say twenty or thirty feet, to just below the starting point; thence it again doubles at a lower point, and repeats the process until the whole of the water is exhausted or the land irrigated. This process is carried on at different places in the field, according to the topography, contour or profile. If there is one locality or one descrip-

tion of crop which needs more water than this plan gives, the water in the channel can be stopped or dammed up by sods or little board sluice gates, and the water made to run over the edges and flood the neighboring area, the next parallel below catching the surplus. It is not sound policy or economy to dam up the main ditch in this manner, which should be used as a head-main and source of supply alone.

"Another plan can be adopted, and is usual in Colorado, to construct laterals down the slope from the main ditch, with diagonal furrows, about every four or six feet, more or less, as circumstances may require, to carry the water on either side of the laterals. In this case, a mere plow furrow is sufficient, and is temporary, being plowed every year, and locations changed as the experience of the farmer may determine. Another plan is to throw laterals from the main ditch down the face of the slope, and draw a harrow in various directions from the laterals, continuing the teeth marks with the grade of the slope. This is a very good arrangement, and perhaps is better than flooding for ordinary crops, as the little rivulets caused by the harrow teeth can be better controlled than by flooding, though for permanent, sound, compact, close old grass sod, the flooding is preferable.

"*Flooding.*—This system is very commonly used in connection with the catchwater plan, and is really the very cheapest and easiest understood of either. It is done by closing the laterals with temporary dams or boards, and flooding the water over the edge. This is as cheap as any of the systems, and finds much favor, though great caution is necessary, as if the slope of the ground is too heavy, washing of the soil and the seed with it may result. This mode by some is called terrace-work, and Governor Hunt, at Denver, has practiced it to some extent on clover, with admirable success. Another kind of flooding is by letting a body of water from one side of a river run all over a low piece of land, and letting it off into the parent stream at a lower point.

"*Warping.*—This is applied to lands submerged with water, and is scarcely ever used, except on the seaside, where the tides can be employed. It is done by embankment of the land, and letting in the water; allowing it to stand until the sediment or warp is deposited.

"*Subterranean irrigation.*—This is done entirely by letting the water into deep drains, or ditches, to reach down into the subsoil, and is admirably adapted to a very dry climate, and for crops which extend very deep, as it does not appear on the surface, except by absorption or upward percolation. This kind can be used any time in the day, when the sun is ever so hot, and it does not scald the plants like the other systems. The ditches are usually made the same as underdrainage, by brush or large stones to fill the ditch, allowing the water to soak or seep through the soil. The only difference between subterranean irrigation and underdrainage is in the location of the ditches; in the first you place them on the highest and in the latter on the lowest point of the land."

The Jumbo Windmill.

The "Jumbo" wind engine has been in use, in a limited way, for the last ten years. The first one was built somewhere north of Garden City, and was called the "Dutch windmill." Why it was so named I have never learned. The principal incentive to its construction and use was economy in cost. It was not thought at that time that great power could be obtained from them (much greater than from any other form of windmill known), and yet keep the diameter of the wheel so small as not to endanger it in high winds.

This invaluable property has been determined quite recently. The growth in size and usefulness has been quite gradual, and not until within the last few years have they been sufficiently perfected to give a definite idea of the scope of their usefulness. The first wheel of any considerable power that I am familiar with was erected by John H. Churchill, of Dodge City. This has

a diameter of fourteen feet, with a shaft twelve feet in length. It is built with eight radial fans. Mr. Churchill is able, with this wheel, to run two pumps, one of six and the other of four inches diameter. Since the construction of this, one of large size has been built at the Soldiers' Home, near Dodge City, furnishing power for a six and an eight-inch Gause pump.

I have recently constructed the largest "Jumbo" yet attempted. The diameter of the wheel is twenty-one feet, with eight radial fans, mounted on a steel shaft twenty-seven feet in length. The wheel is in two sections, with central bearings for the shaft. This wheel is intended to run a pump fifteen inches in diameter, twenty-four-inch stroke, furnishing about 700 gallons of water per minute, fourteen-foot lift; also a water elevator with a capacity of 800 gallons per minute. I find that I have power going to waste in a fifteen-mile wind. The question of how great a diameter can be given a wheel built upon this plan and yet not be endangered by the high winds has not been determined. However, should twenty, forty or 100 horse-power be required, the shaft can be extended indefinitely, adding sections of radial fans of ten or twelve feet in length, doubling the power whenever we multiply the number of fans by two. I am satisfied that a "Jumbo" can be built with 100 horse-power at not to exceed \$500. If the cost should be double the estimate, it would still be a marvel of cheapness.

One objection urged by those who had not observed their work, was that only north or south winds would furnish power. This objection has no foundation; in fact, I have found that when the wheel is properly constructed it works equally well with the wind in any quarter, and only stops when the wind comes directly from due east or west, which is so seldom as not to be taken into account. Wheels of great power should always be mounted on a steel shaft, not less than two and a half inches in diameter—the spokes secured in cast spiders, secured to the shaft by means of keys and set-screws. Two or more pulleys with eight-inch face will be found necessary, to which to apply brakes, or to carry power to grinding or other farm machinery. These large wheels can be turned loose in the highest winds without injury—in fact, when all other windmills are thrown out of gear by high winds, the Jumbo is doing double work. The castings and shafts can be obtained at any foundry; the other materials at any lumber yard, and any farmer, with the assistance of the neighborhood carpenter, can build his own wheel. Where large quantities of water are to be raised from a depth of from 100 to 300 feet, as is the case on the table lands of western Kansas, or where a large head of water (with low lift) is desired, no power that I know of will compare in point of economy with the latest improved "Jumbo."—*Dr. W. J. Workman, Ashland, Kas., in Western Homestead.*

How Harvest the Kaffir Corn.

EDITOR KANSAS FARMER:—Having read your articles in the FARMER of March and April last, on Kaffir corn, I thought I would give it a trial. I planted fifteen acres with a wheat drill, forty inches apart; thirty-five acres with a wheat drill, twenty-four inches apart, which I cultivated; and fifty acres with a wheat drill, eight inches apart, three-fourths of a bushel to the acre. The weather has been so favorable for its growth that it stands about six feet high, and some of it seven feet high. I wish to cut and thresh the whole crop. Will you please advise how to proceed? There is quite a large acreage in this county. The wheat and oat crops are light, but Indian and Kaffir corn crops are good.

J. A. FARMER.

Independence, Kas.

—Some cut with the ordinary wheat header, but it is doubtful whether Mr. Palmer's tall Kaffir corn can be conveniently handled with such machinery. Better write to some of the manufacturers of special Kaffir corn machinery who advertise in the KANSAS FARMER.



When a baby comes into this world he is going to have a struggle to keep his foothold in the difficult places of life, and battle against the misfortunes that will probably beset him. No matter how well off his parents may be, they can't insure him against misfortune. The best they can do is to start him with a good, healthy, vigorous constitution.

A mother who wants to bequeath her baby a good store of strength and hardihood ought to keep herself in the best physical condition during the time her little one is expected. Dr. Pierce's Favorite Prescription has been a wonderful blessing to mothers and their children. It gives strength to the special organism concerned in maternity; it purifies the system and imparts healthful vitality to the nerve-centres. It makes the coming of baby safe and comparatively painless.

It is the only medicine in the world designed by a regularly graduated physician and skilled specialist to cure all weaknesses and diseases of the feminine organism.

W. R. Malcolm, Esq., of Knobel, Clay Co., Ark., writes: "My wife for perhaps four months previous to the birth of our child took the 'Favorite Prescription.' This strengthened her entire system, and child-birth, to her, was very easy, being attended with little pain. Our baby Ruth is 13 months old and she had never been sick a day, not so much as had the colic; she is hearty and stout, and pretty as a picture—pretty because she is healthy, and we very much blame Dr. Pierce's family medicines for it."

We keep Dr. Pierce's Golden Medical Discovery, the 'Favorite Prescription' and the 'Pleasant Pellets' in our home and use them. We have been married most three years and I have called a physician into my family but one time—at birth of our baby."

If all the maladies due to constipation were taken out of medical books, there would be little left but the covers. Constipation is positively, permanently cured by Dr. Pierce's Pleasant Pellets. Never gripe. Druggists sell them. Nothing is "just as good."

Improved Blue Valley Corn Harvester.

Improved machinery is in constant demand by the progressive element of mankind. In no field of labor has there been more varied and wonderful progress than in that of agricultural pursuits. Sixty years ago men cut their grain by the sickle; to-day it is all but ground by a machine in the field. Ten years ago nobody heard of any other corn harvester than that of the sword knife and the farmer's strong right arm; to-day it is possible for a man to have his corn cut while he rides upon the machine, only dismounting to shock the corn that has fallen upon the platform at his feet.

The Blue Valley Foundry Company, in placing upon the market the Improved Blue Valley Corn Harvester for the fifth consecutive year of successful operation, is pleased to announce that it has solved many of the difficulties in making a perfect machine at a low price. The corn falls upon the platform in a position to be easily removed. The knife has two adjustments, either up or down, or in or out, to suit the pleasure of the operator. The back stay-rod, which has interfered with a free action from the back part of the machine in removing the corn to begin the shock row, is obviated by removing it entirely and placing a different brace in position to hold up the guide rest.

The machine is lengthened to accommodate the exceedingly large corn of this year and will cut shorter corn with the same ease. The guide-bar is changed so as not to interfere with the taking off of the corn.

Hundreds of sled harvesters have been made by the farmers of the West for cutting their corn. Every one of these machines has been found to be very dangerous, both to man and beast. The knife is placed at the forward end of the machine and the corn is allowed to fall backward, besides the operator has to stand and kick the corn upon the sled as it falls. Oftentimes he loses his balance and falls before the knife, thus maiming or killing him outright; besides many valuable horses have been entirely ruined by backing upon the knife. In our harvester the knife is placed at the back of the machine, the corn falls forward upon the platform and every stalk is cut instead of some of it being pulled up by the roots. The operator stands behind the knife, and in case he should fall he cannot fall forward upon the knife, on account of the guards, and for the same reason the horse cannot back upon the knife, as the arms act as a guard.

The Blue Valley Foundry Company also manufactures feed mills of excellent design and construction and at reasonable prices. In writing mention KANSAS FARMER.

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

Hoagland's Poland-Chinas.

The reputation and high standing of Kansas swine husbandry becomes better known as time goes on, and among others that are keeping pace with the development of this industry is Mr. J. E. Hoagland, whose farm, known as the Lawn Ridge stock farm, is situated three and a half miles southeast of Whiting, in north-eastern Jackson county, where the visitor finds a select herd of well-bred Polands, consisting of about 180 head, all ages. Mr. Hoagland began breeding registered swine fourteen years ago, and as experience grew from year to year, he recruited with new blood until he feels warranted in making his bow to the breeders and farmers of the West more generally through the columns of the "old reliable" KANSAS FARMER.

The writer made a day's visit last week at the farm and found a strong collection of animals in excellent condition and of more than just the ordinary kind. Three herd boars were used during the past year—Young Competition 15082 S., Kansas Chip 15083 S. and a grandson of J. H. Sanders, the noted World's Fair winner. Young Competition was sired by Competition 10360 S. and he by Mc. Tecumseh 4430 S.; his dam was Miss Tecumseh Corwin 23524 S., by Chip's Perfection 10079 S. and out of Grand Quality 23527 S. This harem master is an individual of great size, scaling 68 inches in length, heart 78 and flank 79. His breeding and size warrants his use in herds when the "just a little" under size predominates in the females belonging to the Black U. S. and the Wilkes families, and especially when more size is desired in any herd that size in brood sows is wanted. Young Competition now has to his credit in the youngster division of the herd twenty-nine sons and nineteen daughters, all out of well-bred dams. His chief coadjutor, Kansas Chip 15088 S., was farrowed June 22, 1894, sired by the \$250 boar, Admiral Chip 7919 S.; his dam was Gold Coin Model 20745 S., by Gold 7412 S. and out of Protection Queen 16926 S. The up-to-date Poland man will at once recognize that his breeding is all right and the visitor finds the seventeen boars and twelve gilts by him are above the average. They have good backs, are mellow and have stout, short legs on good feet. His sire, Admiral Chip was a sure winner when out in his yearling and two-year-old show-yard dress. Both these herd masters having been used at Lawn Ridge farm as long as they could be from the modern breeder's standpoint of experience, have been catalogued and will be included in the annual sale offering of Mr. M. C. Vansell, of Muscotah, Kas., which will take place on Mr. Vansell's farm, near Muscotah, Tuesday, September 8, when those that are desirous of securing a tried and sure breeder will have an opportunity to get what they want from the competitive sale ring. The young lieutenant is a grandson of J. H. Sanders 11205 S. and has the sure-enough Sanders back, ham and bone. Space forbids further detail concerning him at this writing.

Among the harem queens is Our Pride 35616 S. by Lord Wylie 14899 O. and out of Miss Whiting 9594 C. This is doubtless one of the most profitable females in the State. Her record for three years shows three litters in less than twelve months each year, with an average of about eight to the litter. She belongs to the useful kind and has, as it were, the premier place in the herd and several daughters and granddaughters in the herd. There are far too many females to enter upon a detailed description at this time.

In the youngster division the visitor finds a strong, thrifty lot of mellow ones, possessing size and quality and of the kind that extra good top selections can be made of either sex and of groups not akin. The farm is easy of access, being situated on two railroads, that afford easy, rapid shipments in the four cardinal directions. Those desiring further information concerning the herd are very cordially invited to visit the farm or send for a free copy of the herd catalogue. W. P. BRUSH.

Gossip About Stock.

STANDARD HERD OF POLAND-CHINAS—Is located near the city limits of Hutchinson, Kas., and is owned by Mr. L. Nation, who has one of the best equipped farms for a model hog breeding establishment in Kansas. He has been breeding the proper sort of Poland-Chinas for a number of years in Kansas and is a well-known buyer from the best breeders of the country, and has been able to dispose of his surplus stock to regular customers until the present time, but owing to the fact that during the past year he has increased his breeding herd largely by the purchase of the cream of "Circle U" herd of Poland-Chinas, formerly owned by W. H. Underwood, and with the addition of choice selections from other noted herds, he now has twenty brood sows of elegant breeding and all choice individuals, also four herd boars that are exceptional sires and their produce are remarkable for their uniformity as the get of the respective sires, so much so indeed that almost any one can tell at sight the sire of any of them, the pigs being so well marked. The stock is of extra size, yet strong and smooth finish.

The herd boar, Seldom Corwin, was farrowed October 4, 1894, sired by Seldom 14251 and he by Seldom Found 23037. This boar was one of the litter that won class and sweepstakes prizes at the World's Fair. Another choice herd boar is Standard Wilkes by Billy Wilkes Jr., he by Billy Wilkes by George Wilkes. The produce of these two boars are sure to give splendid satisfaction. The brood sows in the Standard herd are a superior lot of large, vigorous animals of splendid finish and quality, and to give some idea of their breeding we notice the following: Frances, sired by Graceful Index 27089 and he by Seldom Seen 2d, dam Graceful L. Another aged sow is Beauty S. sired by Seldom Found 23545 and he by King Butler 5577; her dam is Beauty 7329, sired by Rome Park 155449 and out of Hubbard's Beauty. Another favorite sow is Pocahontas, bred by O. W. Seneby, of Waterloo, Iowa. She is Wilkes and Black U. S. breeding. The brood sow, Model, by Graceful Index 27089, dam Model F. Another type of sow worthy of mention is White Face U. S. by Darkness Quality 14361 out of U. S. White Face 33711. The sire of this sow traces closely to Graceful Index and Seldom Found, Darkness and King Butler, and his dam to Black U. S., Success and Tom White Face. These few animals noted show something of the character of the breeding in the Standard herd. About fifty head are now ready for fall trade, a number of which will be included in the public sale with Quality herd, owned by Willis E. Gresham, at Hutchinson, next month. Mr. Nation's regular card appears in our "Breeder's Directory" and his herd is Standard, as the name indicates, because he has met with great success in the mating and mingling of the best blood with pronounced individual types, so that intending buyers are sure to find strong, healthy and fancy animals at all times.

Bert Wise, of the State Line stock farm, Reserve, Kas., and Frank Daeschner, of the Artificial Lake stock farm, at Preston, Neb., have clasped hands and said they are going to offer one of the grandest opportunities to breeders of thoroughbred Poland-China swine that has ever been offered in the West. In order to do this they have concluded to select one hundred of the best out of nearly two hundred head of these two great herds and make a combination sale on September 2, at the home of Bert Wise, Reserve, Brown county, Kansas. Look up their advertisement in the next issue of this paper and send in your order for a catalogue, which will be free to all and will contain some very valuable information. Write to either Frank Daeschner, Preston, Neb., or Bert Wise, Reserve, Kas. Send in your order at once and convince yourself of the merits of this grand offering, and you will soon come to the conclusion that this is an opportunity that you cannot well afford to miss.

Publishers' Paragraphs.

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.

We can furnish you KANSAS FARMER and Peterson's Magazine, each one year, for \$1.75. Or KANSAS FARMER and Arthur's Home Magazine for \$1.65. Send to this office amounts above named.

"Dairying for Profit, or the Poor Man's Cow," is practical, was written by a woman who knows what she is talking about, and is cheap—only 10 cents for a 25-cent book, to subscribers for the KANSAS FARMER. Send to this office.

Many of KANSAS FARMER readers are familiar with the New York Tribune, the paper upon which Horace Greeley expended the best labors of a lifetime. We have perfected arrangements by which we can furnish one year's subscription to KANSAS FARMER and New York Weekly Tribune for \$1.25, received at this office.

W. McKay Dougan, M. D., surgeon in charge at Western Shoshone Agency, at White Rock, Nev., owns a fine farm in Noble county, Okla. He desires to contract with some good farmer to take charge of and cultivate his farm for several years. Any one desiring such a situation, will do well to write the Doctor, at White Rock, Nev.

We have received the announcement of the Kansas City School of Law, at Kansas City, Mo., of which Hon. Francis M. Black, ex-Chief Justice of Missouri, is President. It discloses a splendidly arranged course of instruction and a corps of able lecturers and instructors, including some of the most eminent lawyers of the West. One thing which has contributed largely to the great success of this institution is the plan of having its sessions in the evening, which appeals to the need of a large class of students by enabling them to be employed during the day and thus earn their way through college. Such opportunities for education are much needed in the West and are welcomed by many who are dependent wholly or in part upon their own efforts.

Green Manuring.

EDITOR KANSAS FARMER:—Mr. C. C. Waters, of Wellsville, Kas., asks about the advisability of plowing under a green crop of cane. To this question I say "don't." Unripe cane contains a large amount of matter similar to vinegar, and when turned under it will take the soil about three years to work off and recover from this violent application of acid matter.

Mammoth clover is the very best green manure and should be grown on every farm. The crop ripens for hay about July 10 to 15, after we are done cultivating and when the weather is good for haying. The second growth is very valuable for fertilizer. However, it is erroneous to suppose that the clover tops give the desired fertility to the soil, save as the producing of a good mechanical effect on the soil. It is the clover roots that have the great value, hence the tops can be used for hay and not much taken from the land in the form of fertilizer. It will be seen from this that very young clover has not enough root growth to be of much value, but should be allowed to grow a year, then cropped for hay, then plowed under for fertilizer.

It has been generally understood that clover absorbed free nitrogen from the air and deposited it in its roots. It is now known that the activity of the lower forms of life—bacteria or microbes—cause the plant to produce little nodules or tubercles on the roots, and it is through these little tubercles that the plant gets its atmospheric nitrogen. The air enters the soil and the nitrogen is extracted and deposited by these little microbes. In some soils the necessary microbe is absent and clover will not do well there until other soil containing these microbes is spread on, and this is called soil inoculation. It will be seen that clover, peas and other legumes get their nitrogen from the air and when we plow them up we add just so much nitrogen from the air. On the other hand, such plants as buckwheat, mustard or any non-leguminous plants, draw their nitrogen from the soil, and when we plow these under we do not add anything except the good mechanical effect that the top produces on the soil.

I would advise Brother Waters to feed down his cane, either by pasturing it or curing it, and apply the manure from it, but to be careful how he plows it under.

Every thinking farmer will admit that the time has come when we all must use clover, and the farmer who has pure seed for sale should advertise it, stating that it contained no foul seeds. A large per cent. of the seeds found in stores for sale are badly mixed with other seeds and should be avoided. Early or May clover is fit to cut here in May and a seed crop can be cut early in August and another crop can be allowed to grow and be plowed under. It is not so good for fertilizing as Mammoth clover, and must be cut for hay at the season when we are having heavy rains and right in cultivating time. C. J. NORTON.

Can't Loan His Turkey Hen.

EDITOR KANSAS FARMER:—Mr. A. T. Ellison asks for my turkey hen and brood to eat his potato bugs. I cannot spare her. At present, and for some time past, she has kept the worms off of the cabbages. I have never seen over 100 potato bugs in my life and that was this year. I shall be prepared to fight them next year, and had about concluded to get a powder gun and apply dry Paris green, two rows at a time.

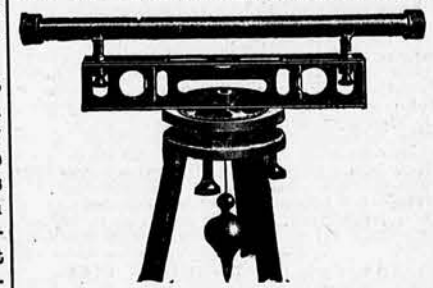
Slugs can be knocked off into pans with oil in them, by using a stick to hit the vines and holding the pan under the vines. C. J. NORTON.

One Fare to Cleveland and Return.

For the biennial encampment of the Knights of Pythias, Uniform Rank, at Cleveland, August 23 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. 124

Leveling Instrument.

In laying off land for irrigation, a matter of first importance is to determine the levels. The KANSAS FARMER has desired to offer its patrons a reliable, low-priced instrument for this purpose, and has finally secured the one herewith illustrated. It is



manufactured by L. S. Starrett, a well-known and reliable manufacturer of fine mechanical tools at Athol, Mass., who warrants it to be true in every respect.

The price of the instrument is \$12.50 at the factory. By a special arrangement we are able to furnish it to subscribers, together with a year's subscription to the KANSAS FARMER, delivered at any express office in Kansas, charges prepaid, at the manufacturer's price. Send orders with money to KANSAS FARMER Co., Topeka, Kas.

Large and frequent doses (twenty drops every four hours) of tincture of aconite are recommended by Professor Law in congestive cases of milk fever.

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.

VETERINARY SURGEON.

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

LIVE STOCK AUCTIONEERS.

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

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

S. A. SAWYER, FINE STOCK AUCTIONEER—S. Manhattan, Riley Co., Kas. Have thirteen different sets of stud books and herd books of cattle and hogs. Compile 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.

\$4.00 DO YOU WANT A JOB SEND \$2.50 PER DAY EASILY MADE STAR HOME FASTENER CO. CHICAGO, ILL.

Stack Covers Cheap!

Also Awnings, Tents and everything made of cotton duck. Every farmer should have a stack cover. Address best house in the country for these goods. C. J. Baker, 104 W. Third St., Kansas City, Mo.

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

Bannerman's Phenyle Has Been Tested

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-cent pail, \$1.50. 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.

Study Law In a Practical Way.

follows a practical plan. Its sessions are held in the evenings. During the day students either attend some one of the numerous courts that are always grinding or employ themselves as clerk in some good law office. In either case he gets practical experience and in the latter case **Makes His Living.** Better by far than the ordinary Law schools and Universities offer. The best lawyers in the U. S. lecture and instruct here. Special lines taught if desired. Graduates stand high and admitted to the bar at once. Session opens Sept. 14th. Address for full information.

Kansas City School of Law, WM. P. BORLAND, Dean, 711 N. Y. Life Bldg., KANSAS CITY, MO.

The Home Circle.

TOO LATE.

What use for the rope if it be not flung,
Till the swimmer's grasp to the rock has
clung?
What help in a comrade's bugle blast
When the peril of Alpine height is passed?
What need that the spurring pean roll
When the runner is safe within the goal?
No, no; if you have but a word of cheer,
Speak it while I am alive to hear.
How much would I care for it could I know
That when I am under the grass or snow,
The raveled garment of life's brief day
Folded and quietly laid away,
The spirit let loose from mortal bars,
And somewhere away among the stars,
How much do you think it would matter then
What praise was lavished upon me when
Whatever might be its stint or store,
It neither could help nor harm me more?
—Margaret J. Preston.

AS YOU GO THROUGH LIFE.

Don't look for the flaws as you go through
life;
And even when you find them
It is wise and kind to be somewhat blind,
And look for the virtue behind them.
For the cloudiest night has a tint of light
Somewhere in its shadows hiding;
It is better by far to look for a star,
Than the spots on the sun abiding.
The current of life runs ever away
To the bosom of God's great ocean;
Don't set your force 'gainst the river's course
And think to alter its motion.
Don't waste a curse on the universe—
Remember it lived before you;
Don't butt at the storm with your puny form,
But bend and let it go o'er you.
The world will never adjust itself
To suit your whims to the letter;
Some things go wrong your whole life long,
And the sooner you know it the better.
It is folly to fight with the infinite,
And go under at last in the wrestle;
The wisest man shapes into God's plan
As water shapes into a vessel.
—Jewish Tidings.

FAMILY SCRAP BAG.

Mice love pumpkin seeds, and will be
attracted to a trap baited with them
when they will pass by a piece of meat.

A thin coating made of three parts
lard, melted with one part rosin, and
applied to stoves and grates, will pre-
vent their rusting during the summer.

Cream or milk that has turned but is
not soured may be made sweet by stir-
ring into it one teaspoonful of carbon-
ate of magnesia to each quart of milk.

To keep flatirons clean and smooth,
rub them first with a piece of wax tied
in a cloth and afterward scour them on
a paper or cloth strewn with coarse
salt.

The best way to remove sand and grit
from small fruit, when washing is nec-
essary, is to lay the fruit loosely in a
clean basket and dip the basket into
fresh, clean water.

Currants dried at home for winter
use are much nicer than those that can
be bought and are easily done. Pick
them over and remove the stems, spread
them on plates, sprinkle well with
sugar, and dry them in the sun or in a
slow oven.

It is said that if a lamp wick is
soaked in vinegar 24 hours before being
placed in the lamp a clearer flame will
be insured. Wicks should be changed
often, as they soon become clogged and
do not permit the free passage of the
oil.

If a cloth is wet in vinegar and then
wrung out as dry as possible with the
hands and wrapped around cheese and
then the whole put in a large paper bag
and kept in a cool place the cheese will
retain the moisture and freshness of a
new-cut cheese, and will not mold.

The severe itching and smarting pro-
duced by being poisoned with ivy oak
or dogwood may be relieved by washing
the parts affected with a solution of
saleratus water—two teaspoonfuls to a
pint of water—and then applying cloths
wet with extract of witch hazel.

If oil is spilled on a carpet immediat-
ly scatter corn meal over it, and the oil
will be absorbed. Oil that has soaked
into a carpet may be taken out by lay-
ing a thick piece of blotting paper over
it and pressing with a hot flatiron; re-
peat the operation, using a fresh piece
of paper each time.

Often a defective cover will be found
among the fruit jars and cannot be
screwed down to make the jars tight.
Put a little putty around between the
cover and rubber, and when the top is
screwed down as tightly as possible
press the putty in around the crevice;
when the putty becomes hard the jar
will be found air tight.

Hall's Vegetable Sicilian Hair Renewer
has restored gray hair to its original color
and prevented baldness in thousands of
cases. It will do so to you.

THE JEWELED GLOVE.

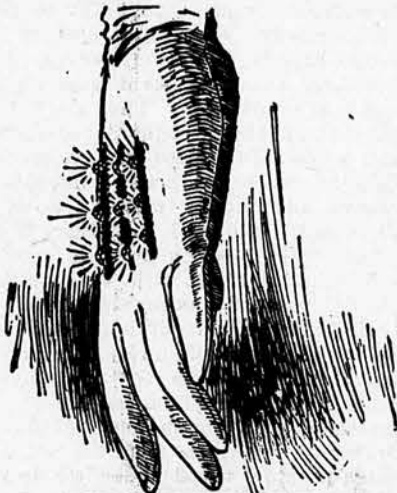
Latest Parisian Fad Which Is Now on Its
Way Here.

The latest fad in the way of eccentric
dress is the wearing of jewels upon va-
rious articles of clothing. This extrava-
gance originated in Paris where the
jewelers are falling over one another
in the attempt to find some new use to
which to put gems.

There are now on the market as a
unique result of this attempt to find or
devise something new, gloves, in the
backs of which are set precious stones,
diamonds, rubies, pearls, and emeralds,
and in fact any gem whose natural col-
or harmonizes or makes a pleasing con-
trast to the color of the glove. Dia-
monds seem to be the favorite gems
used for this purpose.

The jewels are set in the back of the
glove, along the seam, and are held in
place by means of a small nut attach-
ment. Thus far only few of the more
advanced women of the ultra-fashion-
able set have taken to wearing the di-
amond ornamented gloves, but the fad
is slowly but surely spreading and no
man can tell to what extent it may be
carried.

The wearing of gems, according to
jewelers have never been so widespread
and extensive as at the present time.
While a year or two ago it was con-
sidered bad form to wear any but the
plainest jewels, the other extreme will



THE JEWELED GLOVE.

soon be reached, and jewels will be
worn in ways never before thought of.

Like every other fashion which origi-
nates in Paris, the fad of wearing di-
amond backed gloves has crossed the
English channel and a few of the more
daring English leaders of fashion have
promptly had jewels set in the backs of
their gloves. Following the invari-
able order of such things, the fad will
reach this country during the present
season.

American girls will doubtless com-
bine this fad with the other one of
wearing the stones appropriate to the
month of their birth. Then those who
believe in planetary influence upon the
human disposition will have only to
glance at the glove to know the charac-
ter of the girl.

WOMEN AS INVENTORS.

History of the Progress of the Inventive
Faculty Among Them.

The United States patent office
records give some interesting informa-
tion in regard to the progress of the
inventive faculty among American
women. The office was established in
1790, but it was nearly 20 years before a
patent was issued to a woman. The
first was in 1809. This was issued for
a method of weaving straw with silk or
thread. In 1826 there were 14 patents
issued to women, a larger number by
far than had been issued any previous
year. It is singular to note that the
feminine genius for invention ap-
peared to slumber from that time, un-
til it was suddenly aroused by the
great war. Many of the women's pa-
tents that then poured into the patent
office were for implements and ma-
terials of war and for hospital appli-
ances and sick-room devices. From the
60s the number of women patentees
steadily increased. In 1870 it was 60;
in 1880, over 90; in 1890, over 200, and in
1893, over 300. From 1809 to 1888 women's
inventions averaged 30 a year. From
1888 to 1892, 230 a year; and since 1892,
280 a year. Of the subject of these in-
ventions, wearing apparel heads the
list, with 160 different patents in two
years and a half. Next come cooking

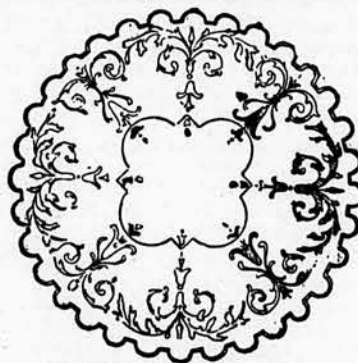
utensils, with 100 inventions; fur-
niture, 55; heating or washing or
cleansing apparatus, more than 40
each; sewing and spinning devices and
building apparatus, about 30 each; and
educational and surgical apparatus,
toys and trunks, about 20 each. Other
lines in which women have tried their
inventive genius are preambulators,
barrel and bicycle attachments, print-
ing and bottling apparatus, boxes and
baskets, clocks, horseshoes, mo-
tors, musical instruments, plumbing
and preserving devices, screens, sta-
tionery, theatrical apparatus, toilet
articles and typewriter attachments.
Most of the patents were for improve-
ments on some previously existing de-
vice.

ROUND CENTERPIECE.

Description of a Pattern Which Is Very
Popular in France.

A design for a round centerpiece that
will work out beautifully is shown in
cut; and while it may seem elaborate
and a great deal of work, it is in reality
quite a simple pattern to carry out.
As the ornament is distributed around
the outer edge it lends a pleasing con-
trast to the open center when it is
worked either in outline stitch or solid.
From 15 to 20 inches is a good size to
make a centerpiece of this design, but
it will not develop well if made small-
er than 14 or 15 inches, as it would
crowd the ornament too much; 18
inches is perhaps the best size, meas-
uring from the outer edge of the but-
tonholed scallops. The buttonholed
edge is preferred to a fringed one, as it
is more durable and launders better.
However, if the fringe be desired, the
scallop may be worked and the linen
fringed up to them, and after the piece
has been used for awhile and the fringe
begins to show sign of wear, it is an
easy matter to cut it off.

For fine work it is hardly necessary
to state that the best quality of round-
thread linen is the most satisfactory;
it may be frequently laundered without
showing the slightest signs of wear,
it is easy to embroider on, it holds its
shape well, and these are not the only
advantages it holds over other mate-
rials, as those who have used it already
know. For very fine work, such as
some of these designs suggest, a very
good material may be found in Japan-
ese grass linen; it is very fine and thin,
having a surface somewhat like bolt-
ing cloth, and its general appearance is
like that of good surah silk. Its great-
est width is only 34 inches, and it will



ROUND CENTERPIECE.

range from two to three dollars a yard.
It may not be possible to find it at
the large dry-goods houses, but it can
always be had at the shops which make
a specialty of importing Japanese and
Chinese goods. Take care in selecting
it, however, as there are several
grades, and only the best is
smooth enough in texture for
our purpose. As the threads are hand-
spun, and the fabric hand-woven, it is
impossible to get it as regular as Irish
linen; but for fine embroidery it is
most desirable, and its beautiful finish
recommends it for all kinds of dainty
embroidery when hemstitching is not
desired. The threads may be drawn,
but are so fine and irregular it is a
somewhat difficult matter, and when
drawn the result is not always satisfac-
tory.—Demorest's Magazine.

To measure a room in order to find
out how many rolls of paper will be
required to cover the walls, multiply
the length by the height of each wall,
add together the number of square feet
of the walls, getting total number of
square feet. Allow one-half roll of
paper for each door and window. Di-
vide the whole amount by 33, which will
give you the number of rolls of paper
required for the walls, including waste.

THE LATEST PARASOLS.

More Gorgeous and Dainty This Season
Than Ever Before.

Parasols have blossomed out more
gorgeous than ever this season, and ma-
terials are employed which never en-
tered into their construction in years
gone by. Rich, soft tints, rather than
bright, glaring colors, are most fash-
ionable, and Dresden flowered and
chinese patterned taffetas and brocaded
silks make the most useful parasols,
which in some instances match the cos-
tume. But this is not considered nec-
essary to good style, as one flowered-
silk parasol, well chosen, is equally
pretty with many different gowns.

Parasols of grass linen come in great
variety, and they are extremely useful,
too. Plain parasols of silk in delicate
colors and with dainty enameled han-
dles are the favorites with the most
distinguished women in society, but
the elaborate confections of lace and
chiffon must have some mission among
the wealthy portion of the fair sex.
Many of the chiffon parasols are lined
with chiffon, and it is shirred and
ruched up and down the sticks with
reckless disregard of the quantity of
the material. Two or three ruffles trim
the edge, with a ruche above and around



FASHIONABLE PARASOLS.

the top, and one novel design is a white
silk parasol covered with white chiffon
ruffles edged with narrow cream lace.
Colored chiffon parasols are also fash-
ionable. Glace silk parasols are lined
with cascades of chiffon and fringed
with green leaves, and with the new
fad for soft, quiet colors comes the
dove-colored parasol lined with pink.
Knife-plaited frills of silk trim the
edge of some of the shot silk para-
sols. Carved ivory, Dresden china and
all sorts of natural wood handles have
usurped the place of gold and silver,
and added to these are enameled
handles, and all sorts of freak handles,
with an orange an apple or a bunch of
cherries at the end, and parrots and
birds of various kinds are represented.
—Chicago Chronicle.

"Canst thou minister to a mind dis-
eased?" asks Macbeth. Certainly, my lord;
the condition of the mind depends largely,
if not solely, on the condition of the stom-
ach, liver and bowels, for all of which com-
plaints Ayer's Pills are "the sovereignest
thing on earth."

FREE trial in your home. Cut this out and send for
free catalog. Prices to suit you. Oxford Sew-
ing Machines awarded World's Fair Medal.
DOES WHAT ANY WILL DO. FULL SET OF ATTACHMENTS.
TRY THEM GUARANTEED. FREIGHT PAID. ADDRESS:
OXFORD SEWING CO., 240 Wabash Ave., CHICAGO.

Forty for \$1.00.
For the next 60 days we make
this extraordinary offer on our
HIGH-ARM SEWING MACHINES.
On receipt of \$1 we will send
our No. 3 High Arm on 30
days' trial (price \$12.25), or
our No. 1 (price \$16.75). Our ma-
chines are the best made; our No.
1 beats the world; 10 years' guar-
antee with each. Deal with a reli-
able house; buy at factory prices.
H.R. Eagle & Co., 70 Wabash, Chicago

BRIGHT'S DISEASE

can be cured
by using

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

The Peerless Remedy

For Sale at Druggists. Price, \$1.00 Per Bottle

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

The Young Folks.

THE WEB OF LIFE.

A thousand busy fingers,
Day and night,
Weave a wondrous web of mingled
Shade and light.
O the glory of its beauty
As it swiftly is enrolled!
Oh the shining of its silver threads,
The flashing of its gold!
The devices quaint and rare,
Which the flickering and the gleaming
Of its mystic tissue bear!

Bright as the dew
To the lily cup given—
Soft as the blue
Of the midsummer heaven—
Slowly, slowly, slowly
The glowing gold grows dim,
The busy fingers silently instead
Weave in the darkness of a sable thread.
The early splendor waxeth cold and dead;
As when at vesper hour
A cry of human woe shall overpower
The jubilate of a choral hymn.
For the child asleep on the mother's breast,
Is the marvelous web begun;
When the daisies bloom on the old man's
grave,
The web of life is done.

Bending from heaven,
Joyous or grieving,
Angels watch over
The web in its weaving.
Oh tried and true,
How shall the garment be wrought for you,
That your souls may stand
Crowned and exultant at God's right hand?
No richer gem in the diadem
Encircling a monarch's brow appears
Than the priceless pearls of a mother's tears
For a charm against the tempter's snares,
Weave in the gold of a mother's prayers.

Tinsel of falsehood
Glistens there never;
Truth alone dureth
Forever and ever.
Weave in the might of a woman's heart
The strength of a hero's soul—
So shall your garments be silken soft
When you reach the distant goal.
But strong as the knights of long ago,
When they went forth to fight with their
armor on.

O dearly loved,
When the day is done,
May angels rejoice
In a victory won!
And your robes be free from travel stain,
Washed in the blood of the Lamb that was
slain.
—Gail Hamilton.

PHOSPHORUS MAGIC.

A Popular Amusement Which Is Full of Danger and Perils.

Parents, school principals and others are just beginning to realize the danger attendant upon the practice, which is becoming quite too common, of using phosphorus as an agent for playing boyish pranks, or for the purpose of making miniature fireworks in parlor magic shows. It is also frequently used in "hazing" tricks by college boys, and is freely sold and recommended by amusement promoters.

It is generally prepared for such purposes by placing a half pint of solid phosphorus in a pint Florence flask,



WHEN HEATED STREAMS OF FIRE ISSUE FROM IT.

adding water and heating over a spirit lamp.

The Florence flask, used by the Italians principally for putting up wine, is round-bottomed and covered with wicker work. As soon as the water in the flask becomes heated streams of fire issue from it in the shape of miniature skyrockets. If the heat be removed and reapplied three or four times the upper surface of the flask becomes dry and the particles adhering to the side of the flask scintillate like stars, emitting brilliant rays, and many of the stars will shoot from side to side. Such exhibitions as these are strenuously condemned by practical chemists.

Durand Woodman, one of the leading chemists in New York, whose attention was drawn to the subject by the writer,

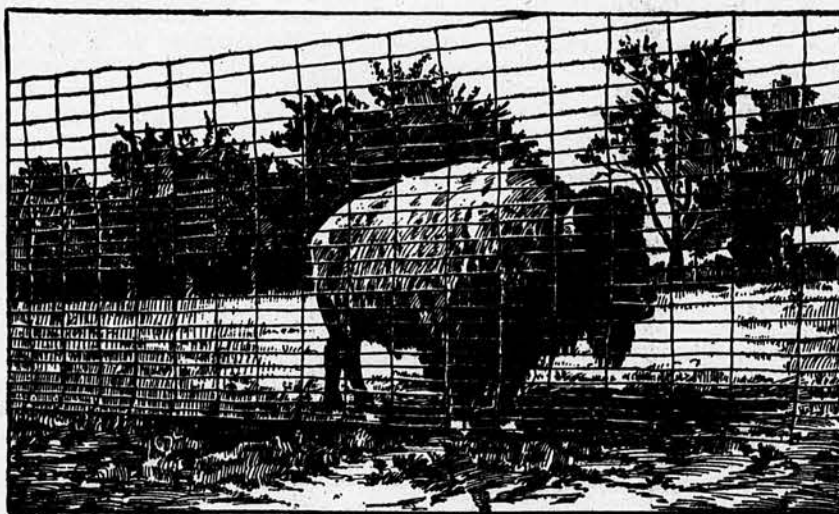
said: "Tricks and games in which phosphorus is used should not be indulged in by persons who are not used by long experience to handling such stuff. Phosphorus is one of the most dangerous commodities which we have to handle, and should never be used for amusement purposes, or in playing tricks, unless by a chemist or some one else thoroughly familiar with its use."

"In parlor magic games, if it must be used, a large kettle full of water should



THE BOTTLE MAY EXPLODE.

always be in position beneath the bottle containing the phosphorus, so that if the flask should break the fiery fluid



PRESERVING BIG GAME.

ADRIAN, MICH., June 30.—The recent death of Austin Corbin, the New England multimillionaire, at his villa, near Newport, N. H., elicits special interest here. Mr. Corbin has the most extensive private preserve for large game that probably exists, covering 25,000 acres in the Blue mountain forest. On this magnificent range much of the Page Woven Wire Fence has been used, the works for the manufacture of which exist in this city.

The great financier had adopted the Adrian product in preference to all others. He had given much attention to preserving from extinction the American buffalo; and one of the stipulations submitted for enclosing his New Hampshire domain was that the fence should be proof against attempts to leap it, or break through, on the part of these powerful and agile animals.

Unlike barb wire and analogous devices, the Page product is a protection instead of a menace to animals within its enclosure. A short time ago he donated to the Park Commissioners of New York a number of bison from his Blue mountain herd, with the con-

dition that none but Page fencing be used to enclose them. Stimulated by Mr. Corbin's example, the Page people have instituted a zoo of their own. A range of thirty-seven acres has been enclosed, and in this the company has placed a number of deer and elk, with nine bison. These were obtained after considerable trouble and expense, so rare are full-blooded specimens of the American bison becoming. Nero, a superb animal weighing 2,000 pounds, died recently from injuries sustained in its transportation to the Adrian park, and has been mounted, together with a beautiful elk, and donated to the museum of Adrian college.

Having succeeded so well in corralling the brawny bison, the Page people are now preparing a fence to enclose the elephants in Lincoln park, Chicago, and relieve the animals from the chains which keep them in subjection at the expense of their tempers and physical condition.

The company has also made a tender to the government to enclose a range at Yellowstone park, and save from depredation and loss the few buffalo that remain.

up ran his old ram, jumped on his back, went on to the hedge and over into the mangel field, and all the flock in Indian file scampered after him over the back of Harry. Very early in the morning the rogue went into the devastated mangel field, put his head against the hedge, bent his back, called "Tup! Tup! Tup!" and up came the ram, ran over his back on to the hedge and returned to the barren quarter again, followed in Indian file by all the flock. That was done several times and no signs appeared anywhere of the hedge being broken through, or of a padlocked gate having been opened. At last the farmer who was robbed hid himself one night, and saw the whole proceeding. Tup-Harry did not try that trick on again.

"No chemist could conscientiously recommend the use of phosphorus for any such purposes," he concluded.

A Really Wonderful Flower.

The most wonderful flower in the world, as well as one of the very largest "blossoms" known, is a native of the Malay peninsula. It is simply a gigantic flower without either stem or leaves, and has more the appearance of a fungus than anything else. It is about three feet in diameter and has a globular central cup which has a capacity of nearly two gallons. This cup is always filled with a fetid liquor which attracts an immense swarm of flies and other insects. The pistils of this queer flower distill the liquid and it is believed that the rank odor attracts the flies in order that the flower may be fertilized.

TUP-HARRY'S STRATEGY.

How His Sheep Grew Fat at a Perplexed Neighbor's Expense.

In the west of England a hedge top is usually finished off with slates that project, and this is to prevent rabbits, even sheep, from overleaping them. In Cornwall, on the hedge top is a footpath beside a large deep cleft in the land, that converts itself into a torrent in wet weather. It is a common sight to see women, and children on their way to school, penciled against the sky walking on the hedge tops. So when certain hedges have thus been converted into footways, then a rail is often put across them to prevent horsemen from using them in like manner.

Anent sheep jumping hedges, a writer in Chambers' Journal tells a tale of a certain old rogue who went by the name of Tup-Harry. This is how he got his nickname. Harry was a small farmer, and he had a neighbor with better means and a better farm than his own. One very dry season Harry had come to the end of his grass for a flock of sheep he possessed. His neighbor had, however, got a fine field of mangel-wurzel. Harry looked over the hedge—a hedge furnished with outstanding slates—and greatly longed for these mangels for his sheep; but he did not relish running the risk of being caught taking them. So he went in the evening into his field, that was bare of grass, put his head against the hedge, bent his back and called: "Tup! Tup! Tup!" whereupon

THE CLEVER YAKAMIK.

A South American Bird Which Knows How to Herd Sheep.

A dog that, unaided, may be trusted to shepherd a flock of sheep is considered a sagacious animal, but a shepherd bird which will drive its charges to pasture, protect them from prowling animals, and gathering them carefully together at nightfall, bring them safely home again, is something till recently unheard of in this part of the world.

Such a bird is the yakamik of South America. The settler in Venezuela and British Guiana needs no dog to care for his sheep and poultry. He has an efficient guardian in the shape of a crane which he, or an Indian for him, trains to obey the voice of its master.

To the care of this bird, says the Youth's Companion, he intrusts his sheep, his ducks and other poultry, and sees them depart to their feeding-grounds secure in the knowledge that the crane will bring them all back safely. Woe to the unlucky animal that, prowling about to steal, is detected by the vigilant yakamik. The bird savagely attacks the marauder with wing and beak, and forces it to retreat in haste. A dog is no match for the crane.

At nightfall the bird returns with its flock, never losing the way, no matter how far it may wander, for its sense of location is very acute. Arrived at home, it roosts upon a tree or shed near its charges, to be ready to resume its supervision of them when they are let out again in the morning.

The bird is as affectionate as it is trustworthy. It will follow its master about, capering with delight and showing its appreciation of his caresses by the most absurd movements.

Mr. Carter Beard, in an article in the Popular Science News, says that the yakamik is so jealous of other household pets that when it appears at meal-times it will not take its own food until it has driven off every cat and dog and secured full possession for itself.

It can bear no rival in its master's favor, and will not even tolerate the negro waiters unless it knows them well.

Pursued by a Mad Bear.

A ranchman in Jackson's Hole, Idaho, set a trap for wolves, and on the next day found that a black bear had been trapped. The skin was no good, however, as a grizzly had attacked and killed the captive, literally tearing him to pieces. The ranchman reset the trap, and the next day found that the grizzly had been caught in it, but had run away with the trap and log. The man started off on the trail, and after a mile chase came across the trap with half the bear's foot in it, either chewed or torn off. While looking at it, the grizzly hove in sight, wild with rage, and the ranchman, after firing a futile shot, ran for home. He reached his cabin in safety, and it was two days before he ventured out after his trap.

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

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KANSAS FARMER and Semi-Weekly World (N. Y.), you can have for \$1.65 one year.

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.

Shawnee County Horticultural Society held its monthly meeting for August at Wakarusa. The KANSAS FARMER regrets that its editor was unavoidably detained and that the Secretary neglected to report the proceedings to this office.

A milkman in Kansas City has been arrested for selling adulterated milk. Chemical analysis showed that his milk contained preserving salts and boride of borax saturated with glycerine. It is just such deviltry as this that creates the need of a thorough and scientific milk inspection in every city.

Acting Secretary Barnes, of the State Horticultural Society, assisted in the organization of the Doniphan County Horticultural Society, on Saturday, August 8. He will be on hand at similar organizations at Sabetha, August 26, and at Hiawatha on the 27th. President Wellhouse and Secretary Barnes will meet the Labette county society, August 22.

Arid America is a beautiful publication. Mechanically it is in the highest style of the art preservative. In the selection of matter excellent taste and judgment is evident. An editorial—it must be an editorial for it is in the editorial department and neither signed nor credited—in its latest number under the caption, "What is Meant by 16 to 1?" is word for word identical with an editorial under the same heading in the KANSAS FARMER about a month ago. No better proof than this is needed to establish the fact that *Arid America* is a good paper.

The investigations of the "Corn Stalk Disease" of cattle entered upon by Prof. Mayo, of Kansas Agricultural college, are timely and important. We begin the publication of Prof. Mayo's bulletin this week. There is no corn stalk disease abroad now and will not be until cattle are turned into the stalk fields next winter. Then the losses are likely to be so great as to more than equal the expense of saving all the corn fodder of the State by the aid of the improved corn-harvesting machinery now on the market. Prof. Mayo's bulletin shows that the investigation thus far discloses no way to certainly escape the disease except by curing the fodder, as is done by many of the most successful feeders. Every corn-raiser who keeps cattle is advised to read the bulletin now and see for himself what chances he is taking in winter pasturing corn stalks.

A FORMER KANSAS FARMER EDITOR AT REST.

Ex-Governor George T. Anthony died at Topeka, August 5. On September 1, 1867, Mr. Anthony became the editor of the KANSAS FARMER, then a monthly paper, and continued in that position for several years. He was a vigorous writer, with rather a strong inclination to "boom." He was never dull, and it is well known that to the end of his life his words never failed of point and keenness. His salutation to the farmers of Kansas is here reproduced, not only to show the buoyancy of the writer, now laid to rest, but also on account of his estimate of the possibilities of the State of Kansas:

GREETING.

Two months ago the writer laid down the pen editorial with no expectation of again taking it up. To-day he takes it up, not again to lay it down while its use can serve a good purpose.

The sanctum he then left was but a temporary halt, a noon-day bivouac upon life's march. The one he now occupies is the deliberately chosen field for a business conflict, where industry and enterprise must earn a victory or die in the trenches.

Immediately after the close of the late war I came to Kansas, animated by a desire to visit the State and see the people that events had woven into so distinct a figure in the fabric of our national history. The thought of settling here was as foreign as that of emigrating to China; for Kansas was remembered as pictured upon school-boy memory—the Sahara of America—an inviting country to dwell outside of.

To learn something of the State and its people a trip was made, by private conveyance, embracing a circuit of 500 miles in this interior of the State. This trip reversed all my preconceived notions of Kansas. I saw in her broad, deep-solled valleys, in her upland prairies, rich, almost, as boundless; in her abundance of stone, pure water and genial climate, the elements of a State, prosperous, rich and powerful. I saw, too, in the hard, common sense, practical character and sharp energy of the people a power sufficient to send the State out upon the track of progress at a speed that would unnerve the slow-going people of older States.

In short, before returning to Leavenworth, the place of starting, a fixed resolve had been formed to make Kansas my future home. It was not her boasting cities and bragging towns, each of which was sure to be "the great railroad center of the West," that tempted this resolve, but the extent of cheap and fertile lands that lay within her borders.

I was forced to believe then what all observation and testimony since have gone to confirm, that of the eighteen States whose surface had become familiar to me from travel, not one possessed the natural agricultural advantages of Kansas. In richness and uniformity of soil none could compare with it. I believed then, and still do, that no body of land of equal size with Kansas can be found within the limits of our organized States promising so much and so surely to the faithful husbandman.

Will fruit grow here? Upon this question hung a single doubt, a mental reservation in my resolve to live in Kansas. Intelligence, morality, refinement and religion may be made to flourish where fragrant flower and juicy fruit do not grow. If so, however, they are harder plants than I ever took them to be. One thing is sure; I would not live in a country where the earth was silver and the heavens gold, if it did not produce fruit.

This doubt has been put at rest. Every observing man must agree with me that we live in one of the finest fruit belts of country to be found in the United States. Only the rapid influx of immigration can prevent fruit being as plenty, almost, as air, within a few years.

With this statement, no one will be at a loss to know why I have undertaken the conduct of the FARMER. It remains for a discriminating and in every way competent public to judge of my qualifications and fitness for the task. For information upon this point I take pleasure in referring to the columns of the FARMER. Price, \$1 a year; single copies, 10 cents.

This opportunity must not pass without an acknowledgment of the obligations under which I rest to the press of Kansas. I am profoundly grateful for the friendly and generous hand extended to me, both on going out and again returning to the editorial circle. It shall be my highest ambition to deserve their good opinion by co-operating with them in everything that will tend to maintain the good character of the press and promote the best interests of the State.

GEO. T. ANTHONY.

A most valuable circular in these political times of misinformation is that recently issued by the United States Treasury Department, entitled "Infor-

mation Respecting United States Bonds, Paper Currency, Coin, Production of Precious Metals, Etc." It seems to be fair and impartial. We advise every reader of KANSAS FARMER to write to the Secretary of the Treasury, Washington, D. C., and obtain a copy.

HOW MANAGE BUFFALO WALLOWS.

EDITOR KANSAS FARMER:—Please state, in your columns, how to treat "buffalo wallows" so that the soil will produce as good crop of grain as can be grown elsewhere.

W. MCKAY DOUGAN, M. D.

White Rock, Nev.

The editor of KANSAS FARMER has no experience with buffalo wallows in Nevada, but submits a few remarks as to their treatment in Kansas. Persons who saw buffaloes in their freedom on the prairies, as they existed in Kansas a quarter of a century ago, know that they were much given to wallowing, either in the dust or in the mud. Whether this was to rid themselves of lice, or for some other purpose, does not matter in this discussion. After a rain, the traveler along one of the transcontinental trails or roads would find the buffaloes rolling in the soft mud, much as a horse rolls. Away from the roads they would wallow, one after another, in the muddy depressions known, then as now, as buffalo wallows. In dry weather the bottoms of these wallows were wrought into dust instead of mud, and the wallowing was then less observed on the hard trails but was scarcely less frequent in the wallows.

The result of the wallowing in the mud was the complete puddling of the bottoms of the places frequented wherever the soil was of a nature to puddle. These puddled basins were almost water-tight, allowing but slow seepage. As the water dried up in them the moisture which raised from below brought with it the soluble alkaline salts and left them at the surface, as it, too, was evaporated. In many cases the action of the frosts of winter broke up the puddled surface and allowed the moisture to pass more easily downward, but with the repetition of the wallowing the puddled condition was renewed and the alkaline salts were again brought to the surface as before. It thus came about that the soil of the buffalo wallows is of different texture and different composition from that around them. That it is less productive every farmer who has experience with wallows knows.

In seeking a remedy, it is well, if possible, to discover and remove the cause—a truism of which it is scarcely necessary to remind our correspondent, who is a medical man.

The first thing to do is, to fill up the wallows, or, if possible, to provide drainage. In some way water must be prevented from accumulating and standing in them and drying up in them.

If but few and not very large wallows are to be filled, a common slip scraper may be used, care being exercised to avoid making other water-holding depressions in obtaining soil to fill those now in existence. If much of this work is to be done the writer has found most effective a land grader made as follows: Take lumber, two pieces 2x10 inches, 16 feet long; four pieces 2x8 inches, 2 feet long; two pieces 2x8 inches, 2½ feet long; two pieces 2x8 inches, 4½ feet long. Bolt to one side of each of the sixteen-foot pieces a strip of iron or steel, say two inches wide, in such a way as to project half an inch beyond the edge. With these iron edges down, fasten the sixteen-foot pieces in position by spiking the two-foot pieces between, making all flush at the upper edges. With four iron rods, each twenty-nine inches long, secure the 2x10's in place, passing the rods through them near the lower edges of the cross-pieces. Bolt the two two and a half foot pieces across the top at the ends of the sixteen-foot pieces. Bolt the two four and a half foot pieces across the middle, allowing them to project one foot in front of the grader. Fasten about 300 pounds of stone or other weight on the front ends of these four and a half-foot pieces. Hitch to this four horses, attaching the eveners to chains or ropes extending to the top cross-pieces at the ends of the grader. When loading this grader, stand on the rear ends of

the four and a half foot cross-pieces. When unloading get off. Of course the soil to be moved should be first plowed.

With such a grader buffalo wallows may be filled rapidly and easily and without much liability of making other depressions.

Such filling will usually, but possibly not always, cure the wallows. If the spots have become strongly alkaline and so puddled that the soil runs together at every rain, it sometimes happens that the amount of fresh soil required to fill the depressions is insufficient to effect a cure. In such cases some farmers in central Kansas have resorted to sand and manure as remedies, with good success. Twelve loads of sand and twenty-five loads of manure per acre will generally bring the soil into good condition. It will be well to continue to get vegetable matter into the soil each year by sowing clover or alfalfa, by plowing under green crops, corn stalks, etc. Such treatment is reputed to be effective for all alkali spots as well as for buffalo wallows.

KANSAS CROPS OFFICIALLY.

A report on the condition of growing crops, July 31, together with estimates by its correspondents of the yields of wheat, rye, oats, barley, flax and hay, applied to acreages of each returned by township assessors, was issued by F. D. Coburn, Secretary of the Kansas Board of Agriculture, August 6. The figures on yields are a consensus of those made by farmers, millers and threshermen, each one specially counseled to "make none but safe estimates." The effort to ascertain the facts as to wheat has been even more than usually painstaking so early in the season, and it is believed the results obtained will very closely correspond with those developed later, when most of the threshing shall have been done and the final revision made.

WINTER WHEAT.

The yield of winter wheat for the State aggregates 29,258,449 bushels, an average of 9.14 bushels per acre on the 3,198,983 acres sown; the range being from practically nothing in five or six southwestern counties to 23, 23 and 25 bushels in Brown, Nemaha and Washington counties respectively. A fraction less than 75 per cent. of the total product, or 21,892,403 bushels, has been grown in fifty-nine counties in each of which the average is 10 bushels or more per acre. These counties, according to their rank in total product, leading with Sumner, which has 2,389,673 bushels, are McPherson, 1,726,740 bushels; Marion, 1,255,586; Ellsworth, 1,137,996; Harvey, 1,003,120; Sedgwick, 971,802; Dickinson, 920,689; Saline, 890,560; Cowley, 680,650; Harper, 674,220; Brown, 649,796; Montgomery, 631,740; Ottawa, 589,446; Marshall, 572,556; Labette, 557,689; Reno, 553,140; Doniphan, 552,040; Mitchell, 487,355; Clay, 415,242; Cherokee, 397,350; Washington, 325,825; Smith, 316,320; Osborne, 305,833; Cloud, 286,322; Neosho, 277,800; Crawford, 248,495; Atchison, 224,120; Chautauqua, 221,494; Leavenworth, 216,912; Sheridan, 212,010; Johnson, 201,488; Jewell, 198,944; Geary, 189,012; Nemaha, 186,461; Douglas, 182,850; Butler, 154,908; Wilson, 121,282; Pottawatomie, 84,240; Franklin, 79,668; Elk, 75,531; Wabaunsee, 72,300; Jefferson, 69,135; Riley, 66,960; Republic, 63,825; Wyandotte, 61,755; Coffey, 57,036; Chase, 51,833; Bourbon, 47,910; Miami, 37,360; Woodson, 27,659; Greenwood, 27,489; Linn, 24,206; Jackson, 20,816; Lyon, 20,196; Morris, 19,513; Allen, 15,939; Shawnee, 14,445; Anderson, 13,902; Osage, 13,325.

In quality four-fifths of it is reported "medium," or below, while the remainder is rated "good," and in a few instances "very good." The better grades are as a rule found in the localities having the heavier yields, but not invariably. In the western and southwestern counties the poor quality is due to lack of seasonable moisture to properly develop the berry, while in the others considerable injury was sustained from a succession of heavy rains after the grain was in shock. In much of the territory where the crop failed in yield the failure is reported as not due to lack of rainfall alone, but to

strange and unexplained atmospheric conditions, blasting and withering the plants from the tops downward before and at the time of heading, in fields that were most promising. The estimates indicate that 35 per cent. of the year's product will be marketed within the next sixty days, and that where the crop has done fairly well this year the acreage for next will not be materially diminished. The quantity of wheat on hand in March as found by assessors was 1,973,958 bushels; one year before it was 3,672,083 bushels.

SPRING WHEAT.

The land in spring wheat is returned as 164,072 acres and its yield 1,148,504 bushels—an average of 7 bushels per acre. The quality, like that of winter wheat, is not high, and from the same causes. Spring wheat is a minor crop in Kansas and is but little sown outside the northern counties. In most others where reported at all the acreage is but nominal.

RYE.

Acres, 110,251; yield, 1,059,890 bushels; yield per acre, 9.61 bushels; quality, medium. Largest acreage and product in Dickinson and Saline counties.

OATS.

With few exceptions both the yield and quality of oats is reported poor, rust having been the cause. The acreage is 1,460,197 and the yield 19,762,647 bushels, or but 13.53 bushels per acre. The largest acreage and total product—903,632—was in Washington county, and the highest yields per acre in Wyandotte and Atchison.

CORN.

In the corn belt of the State, and in fact generally, the range of condition is unusually high, the average being 97 for the entire acreage, and forty counties report it at from 100 to 116. Of these twelve, viz.: Butler, Chautauqua, Clay, Cloud, Cowley, Elk, Geary, Labette, Marshall, Morris, Nemaha and Washington report 110 or above. The present condition for the State as a whole is an advance of seven points over the promising outlook reported May 31, when but fourteen counties represented a condition of 100 or above. Most of the ten days prior to this writing (August 6) have constituted a period of intensely hot, drying weather, with but little rainfall on corn territory, except in Norton, Phillips, Smith, Jewell, Republic, Washington, Marshall and Mitchell counties. In the southern half of the State most of the early-planted corn is fairly past possible failure but in much of the other half the rains needed at once to insure any considerable yield of merchantable corn will be most anxiously watched for.

BARLEY.

Acres, 179,092; yield, 851,679 bushels; yield per acre, 4.75 bushels. The largest product—68,205 bushels—is in Rawlins county; Graham and Ness have also more than 60,000 bushels each.

FLAX.

Acres, 223,041; yield, 1,620,127 bushels; yield per acre, 7.26 bushels. Ten counties have more than 12,000 acres, Allen leading with 16,734 acres and a product of 150,606 bushels. Anderson, Elk and Wilson also have more than 100,000 bushels.

HAY.

Average yield of timothy, 1.70 tons per acre; clover, 1.90 tons; prairie hay, 1.10 tons.

OTHER CROPS.

The condition of other crops is as follows: Broomcorn, 85; castor beans, 85; clover, 96; timothy, 95; alfalfa, 88; pastures, 95; sorghum, 91; Irish potatoes, 70; sweet potatoes, 80; millet, 88; Kaffir corn, 90; millo maize, rice corn or Jerusalem corn, 87; apples, 58; grapes, 75; peaches, 70.

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.

Weekly Weather-Crop Bulletin.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending August 10, 1896, prepared by T. B. Jennings, Section Director:

GENERAL CONDITIONS.

The week has been the warmest of the season, with the temperature ranging from 6° to 10° above normal. Fine rains have fallen in the northeastern counties from Republic to Doniphan, in Ellis, Rooks and Phillips and in Clark, with fair rains in most of the central and western counties and practically none in the eastern half of the State south of the Kaw river.

RESULTS.

EASTERN DIVISION.

Threshing is nearing completion, haying and fall plowing are progressing. Early corn all right and out of danger, but the late corn is showing the effects of the two weeks hot, dry weather, and fruit is falling badly from the same cause.

Allen county.—A famous week for threshing and haying; all crops need rain very much; seed clover dead ripe; melons plenty.

Brown.—The hot, dry weather the early part of the week was hard on corn but the five-inch rain which followed has fully repaired the damage; pastures improving and stock water abundant.

Chautauqua.—Hot and dry; corn will soon have to be cut to save fodder; plowing for wheat progressing in very good shape; some late corn will be injured, but usually the corn crop is too far advanced for serious damage.

Coffey.—Extreme heat and dry weather are injuring the late corn badly; fruit is falling off badly; hay is

blast. Haying is in progress, and is a fine crop. The great heat, dry weather, and some hot winds, have injured the late corn, but, fortunately, the larger part of the corn crop in this division is matured and past all danger. Crops are in good condition in the northern counties since the rains began.

Barber.—A hot, dry week; hot winds on five days; late-planted corn suffering for rain.

Barton.—Hot week; hot winds on three days; corn badly damaged; Kaffir corn in good condition yet; threshing in full blast but the stacks are damp in the center yet; getting dry for plowing.

Butler.—Hot winds on five days damaged late corn; need rain badly; early corn damaged, but to no great extent.

Clay.—Very hot week, but corn was not damaged any; corn crop is perfect; oats poor yield and poor quality; plowing is being pushed but is hard on man and beast.

Cloud.—Hottest week of the season; corn in excellent condition.

Dickinson.—Hot, dry weather is hurting late corn, but most of the corn matured early and is now out of danger; ground getting too hard for plowing; hot wind Friday.

Harper.—Very hot, dry week; hot winds have done serious injury to corn and all other growing crops; much late corn will probably be ruined; rain needed.

Harvey.—Another rainless week; hottest for many years; corn cooked by hot winds.

Kingman.—Hot winds 6th, 7th and 8th will hurt corn crop; too dry to plow to good advantage.

Marion.—Our second week without rain, hot and dry; all growing crops badly damaged; grass getting poor; unless it rains soon will begin to tell on stock.

McPherson.—Hottest week of the

are the best in the State, corn, forage crops and the range being in excellent condition. As in the other divisions, hot winds prevailed on several days, yet no material damage was done except in the extreme southwestern and northwestern counties.

Cheyenne.—Hot, dry week; harvesting about over and threshing begun; haying begun; corn drying up; crops in general needing rain.

Decatur.—A very bad week on crops; hot winds two days cut the corn crop very much; need rain soon.

Ford.—Another fine growing week; corn never looked better in the history of this county; the prairie grass is so high that it will be cut for hay; cattle were never in better condition on the range; alfalfa is doing first-class; melons plentiful.

Morton.—Another hot and dry week; sorghum, millo maize, rice and Kaffir corn waiting for rain; Indian corn withered by the hot winds; no plowing yet for fall crops.

Norton.—Corn damaged by hot winds and drought in localities.

Rawlins.—A terrible week on corn, man and beast; plenty of hot winds.

Thomas.—The three days of hot winds damaged corn considerably but the shower night of the 4th helped everything out some again; threshing in full blast.

Trego.—The wave of warm weather was checked slightly by rain on the 5th; early corn is being put in the shock; late corn retains good color; early millet stacked, the late growing rank; the range is coloring very fast, grass abundant; cattle in good order though annoyed by myriads of flies.

Wallace.—Good growing week; corn doing very well; the extreme heat and hot winds did some damage; the grasshoppers and gray potato bugs are doing more damage to other crops than the hot winds; range grass good; alfalfa good.

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 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.

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.

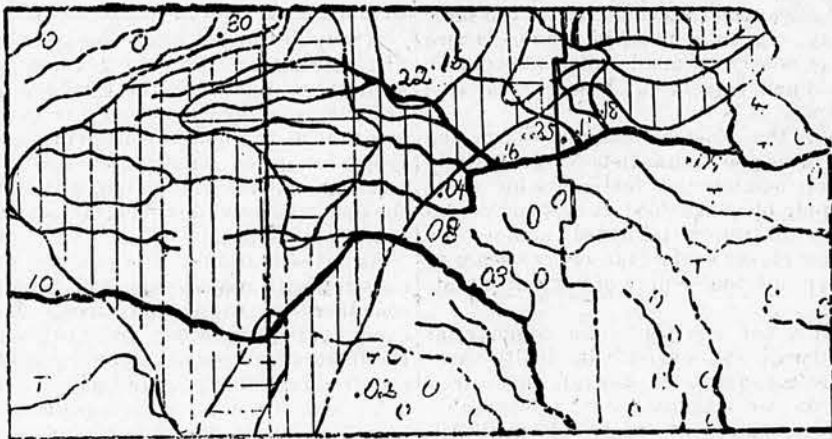
Daily service, same as above, except as regards agent in charge.

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

Farmers Supplies.

The Kansas City Machinery Co., of Kansas City, Mo., have established the farmers' great supply house for the purpose of doing business direct with the farmers who need farm machinery, vehicles or machinery supplies. They are now making a special sale of sickles, sections, guards, ledger-plates and heads for every mower in the world. They also carry a large stock of the Osage Junior corn and cob mills, also the Diamond mills and shellers. They are also headquarters for repairs on the entire Diamond line.

Every farmer knows how expensive it has been in ordering such things from local dealers, and the Kansas City Machinery Co. propose to save intending purchasers considerable money, and therefore invite attention to their advertisement in this paper and cordially invite inspection and correspondence regarding any needed supplies on the farm.



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 8, 1896.

good; threshing mostly done; too dry for plowing.

Douglas.—Hot and dry; the corn needs rain; good hay weather and the farmers are improving it.

Johnson.—Unfavorable for late corn; no rain and excessive heat; hot winds two days.

Labette.—Hot and dry; late corn suffering; rain badly needed by all growing crops; fruit falling badly; wheat turning out poorly; pastures very short; much of the land too dry to plow.

Leavenworth.—Very hot and dry all of the week; rain badly needed; grass and potatoes drying out.

Montgomery.—Hot, rainless week; early corn out of danger but the extreme heat is injuring the late corn; heat and flies have been hard on stock.

Morris.—Another hot, dry week; corn drying up.

Osage.—The continued dry weather and hot winds have had a bad effect on the late corn; pastures are beginning to dry up and stock water getting low.

Pottawatomie.—Too hot for vegetation; corn is curling some; across the river in Wabunsee county a web-worm has attacked alfalfa.

Riley.—The hottest week of the season, and even hotter than in the disastrous period in September, 1895; early corn is all right, but the late corn, of which we have a good deal, is considerably damaged.

Shawnee.—One good rain is needed for the late corn.

Wilson.—A hot, dry week; nothing being hurt yet, but everything is maturing very fast; haying in full blast; all kinds of forage excellent; plowing for fall wheat in progress; ground drying very fast.

Woodson.—Very hot and dry; good rain needed; corn beginning to curl for want of water.

MIDDLE DIVISION.

Threshing nearly finished, except in the western portion, where it is in full

year; no actual hot wind till the 8th; late corn suffering much; early-planted secured; getting dry for plowing.

Mitchell.—Continuously high temperature, making evaporation excessive; late corn is needing rain, which is now falling, and has suffered some from the intense heat; early corn in good condition; plowing in progress.

Osborne.—Hard week on corn, hot winds Tuesday and Wednesday cooked it badly; many farmers discouraged.

Ottawa.—Hot and dry; rain needed for late corn.

Phillips.—A trying week on corn, some pieces nearly ruined, many pieces only slightly.

Pratt.—Hot wind on 7th; late corn damaged by excessive hot weather and lack of moisture; Kaffir corn and millet not much damaged.

Reno.—Needing rain; much corn hurt by hot wind, some corn is being shocked.

Rice.—Late corn drying up for want of rain.

Saline.—Very hot, dry week; late corn and fodder crops being somewhat damaged by the hot winds.

Sedgwick.—A hot week, very dry; late corn is suffering, but new corn has been brought to market, so early corn is safe.

Stafford.—First days of week hot wind prevailed, which was very injurious to late corn; many fields will now be cut for fodder; the rain of 5th revived sorghum and Kaffir corn.

Sumner.—Nearly three weeks without rain; very hot and dry; corn drying up rapidly; Kaffir and sorghum green; an insect has killed nearly all the watermelon vines.

Washington.—Corn doing well since the rain on the fifth, the two days' hot winds had begun to injure it; fall plowing in progress.

WESTERN DIVISION.

In the central and southeastern counties the crop conditions for the week

Horticulture.

VALUE OF CLOVER AND COW PEAS AS FERTILIZERS FOR ORCHARDS.

From a paper read before the Missouri Horticultural Society by J. H. Walters, Dean and Director Missouri Agricultural College.

Given a soil reasonably fertile and otherwise adapted to orchard growing, will it retain sufficient fertility and a suitable physical condition for the best results without manuring when handled in the approved manner, viz., the growing on it of tillage crops, such as corn, potatoes, etc., among the trees while they are young and giving it clean culture thereafter, as long as the trees remain vigorous and productive?

The failure, or indifferent success, of numerous orchards handled in this way furnish the strongest possible negative answer. A few fundamental principles, briefly stated, will make clear the reasons for failure:

1. The removal of one or more of the elements of plant food faster than they can be rendered soluble by the usual processes of nature.

2. The burning out of the vegetable matter or humus, leaving the soil heavy, compact, or, in a sense, dead. In this latter condition the water-holding power of the soil is greatly reduced; less water enters it when a rainfall occurs, and it is physically unsuited to the best growth of fruit trees or agricultural crops. It not infrequently occurs that both of the conditions just described are present in a soil that has been grown for a long time in tillage crops, or in a soil grown in orchard trees for a long time when constantly tilled. It is a well-known fact that tillage greatly facilitates the loss of vegetable matter and nitrogen. It has been found, for example, that for every pound of nitrogen removed in the corn crop, three pounds were lost by cultivation.

The three elements of plant food most often depleted by continued cultivation and the removal of crops are potash, nitrogen and phosphoric acid. Unless this process of depletion has been carried too far, or unless the soil was naturally thin and weak, a season of rest will render this soil again fairly productive for a short time, inasmuch as a portion of the plant food yet contained in this soil is made soluble and accumulates there. By this process, however, nothing is added to the soil, and the supply of plant food already there is drawn upon in the most expensive manner.

An application of barnyard manure or the plowing under of a crop of clover or cow peas will produce the same effect as the summer fallow or rest, and further improve the soil in the following ways:

1. It adds a supply of readily available plant food upon which the trees and succeeding crops can feed at once.

2. It is well known that the vegetable manures of this class serve other equally important purposes in the soil, otherwise many straw stable manures, from the application of which good effects may be seen for several years, would not be worth hauling to the field and spreading. That is to say, the potash, nitrogen and phosphoric acid contained in them could have been purchased and applied in the form of commercial fertilizers for less expense than the hauling and spreading of these manures would amount to. Then, by the addition of this vegetable matter, the physical condition of the soil has been improved; it is made more friable, more easily tilled; its water-holding capacity has been greatly increased, at the same time that its capacity for absorbing the water which falls on its surface in the form of rain, snow and dew is increased. An example of the difference in water-holding power of soils, due alone to a difference in the amount of vegetable matter, is reported in a recent experiment station bulletin as follows:

New soil, cultivated two years, contained 3.75 per cent. of vegetable matter, and contained at the time the samples were drawn 16.48 per cent. of water. A similar soil adjoining, which had been cultivated until the vegetable matter had been reduced to 2.50 per cent., contained at this time only 12.14

per cent. of water. This means a difference of one and a half quarts per cubic foot of soil. Other cases are reported in which the soils with a normal amount of vegetable matter contained more than one-fourth more water than those in which this material had been burned out by cultivation.

Not only do the soils containing the larger amount of vegetable matter contain more water, but this water is given off more slowly by evaporation. An experiment with the two soils above described in which they were subjected to the same temperature, having been wet to the same degree before beginning, show a difference of more than a quart of water per cubic foot in favor of the new soils.

3. This added vegetable matter makes the soil warmer and quicker than before, notwithstanding the increased amount of water held, for the color is made darker, enabling it to absorb more of the sun's heat, and the decaying of this vegetable matter produces sensible heat in the same way (although to a much less degree) that the decaying of the manure in hot-beds maintains a high bottom heat. It has been observed that frosts did no damage on soils rich in humus and of a dark color, while those similarly located and adjoining, which had been depleted of humus by cultivation, had been visited by killing frosts.

4. This humus is a powerful solvent of the inactive potash, phosphoric acid and silica in the soil. It was found that in soils well supplied with humus there were 1,500 pounds of phosphoric acid, out of a total of 8,750 in the soil, combined with the humus, and 1,000 pounds of potash, out of a total of 12,250 in the soil, combined in the same way. In soils poor in humus there was nearly as much total phosphoric acid and potash, but less in available forms.

In the Eastern States, where the farmers and orchardists depend largely upon commercial fertilizers for their supply of plant food, it is found necessary to apply barnyard manure or grow clover every four or five years to keep up the supply of vegetable matter.

It is not possible for the commercial orchardist to cover his land with barnyard manure even though he desired to do so. Hence for the vegetable matter and a supply of available nitrogen, potash and phosphoric acid he is compelled to rely upon some green manuring crop and tillage. For this green manuring practice and scientific experiments have clearly demonstrated that no plants will produce as prompt and satisfactory results as clover or cow peas.

Where the largest amount of green manure is desired in the shortest time, without reference to the hay crop, mammoth or sapling clover should be selected. If the land has not been too fully depleted of its humus by long cultivation and cropping, and hay is desired as well as manure, the common red clover is preferable. In the southern half of the State it is quite likely that the cow pea would prove quicker and more certain than either of the clovers named. At the experiment station in Boone county this plant has done well, yielding this year three tons of field-cured hay, cut before the pods opened. This crop returned to the soil 117 pounds of nitrogen, thirty-one pounds of phosphoric acid and eighty-eight pounds of potash, disregarding the stubble and roots. This plant food would have produced several maximum crops of apples, peaches, grapes or pears, as will be shown a little later.

In any section at all adapted to the cow pea, crimson clover should do well and will be of great value as a winter cover for the soil and for furnishing a fair supply of rich, green manure early in the spring.

The reason for selecting the clovers and cow peas for green manures will be apparent when we consider that they have the power to gather from the air at least a portion of the large quantity of nitrogen they contain. No other agricultural plants have this power so far as we know, and they are obliged to depend upon the soluble supply of food already in the soil. If

nitrogen exists there in soluble forms in abundance there is little need of manures of any kind. But with the burning out of the vegetable matter we have already learned there is almost certain to be a depletion of the available nitrogen supply. Common red and sapling clovers have the power of drawing a portion, at least, of their supply of manurial food from the subsoil, where it has been leached by the percolation of rain water. Bringing, as we do, these valuable mineral elements to the surface in considerable quantities and storing them in their tops and fleshy roots, they are, in a short time, in the best possible form to feed the fruit trees.

Again, it appears that these particular plants have a great power of gathering and organizing into growth the desirable mineral elements, potash and phosphoric acid, than have most agricultural plants. In other words, it appears from recent experiments that these plants are able to use certain soil compounds of potash and phosphoric acid which are not available to wheat, and possibly but slowly available to fruit trees. If this is true the clovers have the power to draw upon supplies of these valuable elements of plant food that are not available to other agricultural plants, except to a very limited degree.

It will be observed that a large proportion of the plant food returned to the soil, in an available form, consists of nitrogen—costing on the market nearly four times as much per pound as either potash or phosphoric acid. It is now well established that a large part of this nitrogen is derived by these plants from the air, hence it represents so much clear gain in soil fertility.

It may be urged that the growing and bearing orchards do not require such large quantities of nitrogen as are furnished by clover and cow peas, and that by the continued use of these crops for green manures we feed the trees an unbalanced ration, which, in the end, will prove detrimental to their bearing qualities.

An investigation of this phase of the question will readily discover the unsoundness of these objections. For example, to grow apple trees (without the fruit) seven pounds of nitrogen are required for every pound of phosphoric acid, and for every three pounds of potash. For peach trees the proportions are four pounds of nitrogen, two pounds of potash and one pound of phosphoric acid. In the clover manures, the proportion of these ingredients is, for red clover two pounds nitrogen, 1.75 pounds of potash and one pound of phosphoric acid, while for the crimson clover the proportion stands, nitrogen four pounds, potash one pound and phosphoric acid two pounds. In cow peas the proportion is, four pounds of nitrogen, three pounds of potash and one pound of phosphoric acid. Instead of an excess of nitrogen, there is an actual deficiency.

Disregarding the growth of the trees and assuming the average yield reported to us by an extensive fruit-grower in Dauphin county, Pennsylvania, an acre of the staple fruits, remove fertility when compared with corn (whole plants) from the soil, as follows:

Fruit.	Yield per acre.	Nitrogen. Pounds per acre.	Potash. Pounds per acre.	Phosphoric acid. Pounds per acre.	Value per acre.
Apples.....	300 bush.	23.4	34.2	1.8	\$5.47
Pears.....	835 "	16.0	13.4	4.9	3.03
Grapes.....	8,160 lbs.	18.0	22.0	7.5	14.25
Peaches.....	335 bush.	40.2	8.4
Corn.....	54 " stalks	90.0	32.5	31.3	17.26
*Strawberries.....	5,000 lbs.	7.5	15.0	4.5	2.47

*Reported by S. W. Gilbert, of Thayer, Mo.

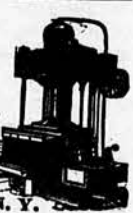
For the production of fruit alone there is an apparent excess of nitrogen in the clover manure, but not more, it is believed, than is necessary to maintain a vigorous, healthy growth of the trees and vines at the same time that average crops of fruit are produced. It will be noted that a two-ton crop of clover, with its stubble and roots, supplies sufficient nitrogen for five crops of apples, seven crops of pears, or six crops of grapes—assuming that no growth of trees or vines occurs.

The nitrogen supply (in almost every

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.

Carnahan's Tree Wash and Insect Destroyer

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



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

branch of crop growing the most perplexing) is, therefore, practically assured by growing and plowing under every four or five years a crop of clover, or by growing clover every two or three years, removing the crop for hay and turning the stubble and roots under. On fairly good soil, clean tillage during the time the land is not occupied with clover, will liberate sufficient potash and phosphoric acid for a healthy growth of the trees, and for maximum crops of fruit.

Bordeaux Mixture.

The Department of Agriculture has issued, from the Division of Vegetable Physiology and Pathology, Bulletin No. 9, by Walter T. Swingle, which treats technically of the chemistry, physical properties and toxic effects of Bordeaux mixture on fungi and algae.

The bulletin is intended not only to record the results of investigations, but also to suggest lines of work that might profitably be taken up by experiment stations and other similar institutions. While technical in its nature the bulletin contains many suggestions of practical value. It shows that the chemistry, as well as the structure of Bordeaux mixture, may be materially changed by the method of bringing together the ingredients and suggests necessary modifications of former directions for preparing the fungicide.

The author says: "Notwithstanding the widespread use of Bordeaux mixture, the exact nature of its action in preventing the ravages of parasitic fungi has been but little studied and is still only imperfectly understood. In this bulletin an attempt is made to present a summary of our present knowledge on the subject, and with this end in view all literature relating to the amount of copper necessary to kill fungi and algae has been collected and briefly summarized.

"The questions considered are discussed under the following heads: (1) chemical composition of Bordeaux mixture; (2) physical nature; cause of setting; (3) conditions governing the adherence of the mixture and the solubility of copper; (4) amounts of copper in solution necessary to kill fungi and other cryptogams; (5) stage of development of parasitic fungi when acted on, and how entrance to the host plant is prevented; (6) hypothesis as to the action of copper in poisoning fungi."

A few copies of this bulletin are at

the disposal of the Superintendent of Documents, Union building, Washington, D. C., to whom requests should be sent.

Nervous debility is a common complaint, especially among women. The best medical treatment for this disorder is a persistent course of Ayer's Sarsaparilla to cleanse and invigorate the blood. This being accomplished, nature will do the rest.

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

In the Dairy.

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

Making Oleomargarine.

Gov. Hoard said, before the Illinois Dairymen's Association, that the farmers of the country are complaining of the hard times and low prices. Suppose all the food consumed in this country to-day should be increased by adulteration one-fourth. What effect would it have on the farmer? The consumer is not benefited, for he is obliged to pay for a fraud, the price he would get an honest article for. The consumer is not benefited. Who is? The middleman. That is how men talk to you about oleomargarine—tell you that it is for the interests of the farmer; that it pays \$2 on every steer and \$1 on every hog. Oh, my countrymen, don't listen to nonsense of this kind. What is oleomargarine? Nearly 40 per cent. of it is cottonseed oil, and the cottonseed oil is produced in the South. They say it is doing lots for the steer and the hog. Can both of you fellows be getting out of this business to the extent you say? Can the cottonseed oil producer be benefited and you be benefited too? Now, there was never a farmer in the United States who received one penny more for the making of oleomargarine—not one penny. On the contrary, the making of oleomargarine has cost a loss to the agricultural interests of millions of dollars.

Aeration.

As warm weather approaches the task of the dairyman becomes more difficult and the quality of the product is harder to maintain. Temperature must in some way be controlled, either with ice or cold spring water, if good results are to be expected, and the work will also be rendered easier if some method for aerating the milk immediately after it is drawn be adopted. We are not now advising the purchase of any expensive machinery for the purpose, nor indeed of any machinery. Those who have learned the value of aeration can determine for themselves the extent to which they can afford to go, to do it easily and conveniently, says the Iowa Homestead. Others who have paid no attention to it had better employ primitive, home-devised means for the purpose to start with. Pouring the milk back and forth from one vessel to another is better than nothing. A shute might be easily devised over which the milk could be slowly poured, which would do the work quite well. The whole secret of the matter is the exposure of as much of the milk to pure air as possible, and in as diffused condition as possible. Not every one is aware of the advantages which aeration gives in controlling the bacterial changes of milk; and these changes become more active and more rapid as the weather grows warmer. Milk so treated will keep sweet longer and is much less liable to produce butter with undesirable flavors. With fairly good aeration and a reasonable degree of control of the temperature the maintenance of quality is rendered a much easier task.

Effect of Feed on Milk.

Bulletin 39 of the Massachusetts station says:

"Feed has very little if any effect upon the quality of milk. By quality we refer to the per cent. or amount of total solid matter in the milk. It is a well-recognized fact that some feeds affect the flavor of milk and possibly to a slight extent its color. Feeds rich in protein have a tendency to slightly increase the percentage of fat in case of some cows; the same can be said of feeds rich in fat. This increase is probably only temporary, however, the milk gradually coming back to its normal composition. Animals very thin in flesh and insufficiently fed, if brought into good condition by proper feed will probably yield milk of rather better quality. The improvement in quality will not as a rule be very marked. The milk-producing function is to a large extent under the control of the nervous system. Any influence

that disturbs the quiet or normal condition of the animal, be it rough usage, extremes of temperature, exposure to rain, etc., will have its effect upon the quality of the milk. On the other hand, plenty of good feed increases the quantity of milk until the animal reaches her maximum production. What has been said with regard to the influence of feed upon the quality of milk is equally true relative to the amount of butter that can be made from a given quantity of milk. No method of feeding has as yet been discovered that so improves the quality of the milk as to make a given quantity of milk produce more butter at one time than at another. The quality of milk varies during the different stages of lactation, but this is entirely independent of the influence of feed. The above statements are based on the teachings of carefully-conducted experiments. They are contrary to the general belief that the better the animal is fed the better the quality of the milk produced."

Cornell Experience.

Prof. Wing, of Cornell Experiment Station, gives as the result of a year's dairy work the following conclusions:

"With a fairly good herd, carefully fed and kept, milk can be produced for 65 cents per hundredweight, and fat for 16 cents per pound for the cost of food consumed."

"That individuals of the same breed vary more widely in milk and butter production than do the breeds themselves."

"The larger animals consumed less pounds of dry matter per 1,000 pounds live weight per day than did the smaller animals."

"That in general the best yields of fat were obtained from cows that gave at least a fairly large flow of milk."

"In general, the cow consuming the most feed produced both milk and fat at the lowest rate."

The Cornell herd is not made up of two or three so-called "representative" cows of each breed, but is a good-sized herd, carefully selected, mostly of Holstein and Jersey grades.

Minnesota Dairy Matters.

The Minnesota Dairy and Food Commissioner has sent out the following notice to the patrons of creameries and cheese factories in that State:

The attention of all creamery patrons is called to the fact that the laws of Minnesota make it a misdemeanor, punishable by a fine of from \$10 to \$100, for selling or bringing to a manufactory:

1. Milk in dirty cans or vessels.
2. Sour milk.
3. Unwholesome, tainted milk.
4. Watered or skimmed milk.
5. Milk from a diseased cow.
6. Milk from a cow fed on decayed or any unwholesome food.
7. Milk drawn from a cow within fifteen days before or four days after calving.

The delivery of any milk under such conditions as these named is not only a violation of the law, but an imposition on other law-abiding patrons, disastrous to the reputation of the product of such manufactory, to the high standing Minnesota butter has attained, and will surely reduce the profits of all patrons.

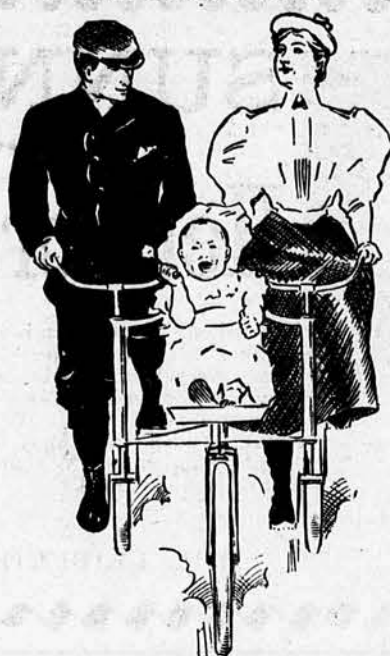
SUGGESTIONS TO OBSERVE.

1. Feed the cow well and milk her regularly.
2. Use tin milk pails only.
3. Thoroughly wash and scald all milk pails, cans and covers; also sun and air them well.
4. Thoroughly strain all milk, cool it well and give it access to pure air.
5. Cover milk in cans with a screen or porous cloth.
6. Never mix warm and cold milk together.
7. Never put sour milk in the cans or allow any milk to sour in them.
8. Never add water to or take cream from milk.

It is the duty of the butter-maker to inspect all milk delivered at the factory, and to reject any that is illegal or likely to injure the quality of the product, that all patrons may be protected.

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

BUILT FOR THREE.



One reason that much of the romance and pleasing sentiment is often lost so soon out of married life is because the physical condition of the young wife is not equal to the practical cares and burdens she is called upon to carry.

The duties of wifehood and motherhood added to the cares of housekeeping, form altogether a considerable burden; a woman who is continually weak or ailing has all she can do to attend to the practical affairs of life and has no strength or spirit to spare for enjoyment and recreation.

Many women grow old before their time for lack of the rational pleasures and diversions from which they are shut out because of some unnatural disease or weakness.

Every nervous and weak woman; every woman who suffers from headaches and backaches and dragging pains or any of the irregular conditions peculiar to her sex, should avail herself of the wonderful nerve-toning and health-building power of Dr. Pierce's Favorite Prescription. It is the one perfect specific and cure for all the weaknesses and diseases of woman's special organism.

It cures all ulcerations and weakening drains and every form of feminine derangement. It purifies the system and tones the nerve centers and gives vital energy to the entire system.

For delicate wives or prospective or nursing mothers the "Favorite Prescription" is a marvelous reinforcement of their constitutional powers. Taken early during gestation it shortens confinement and makes delivery easy; banishes all its danger and nearly all its pain; protects the system against relapse or mental disturbance; and promotes the secretion of healthy nourishment for the child.

No other medicine has ever done so much for weak and suffering women as this "Favorite Prescription" of Doctor Pierce. No other physician has successfully treated more cases of obstinate feminine disease. For nearly thirty years Dr. Pierce has been chief consulting physician to the Invalid's Hotel and Surgical Institute, at Buffalo, N. Y., at the head of a splendid staff of physicians from the most famous medical universities in the world.

An educated and skilled specialist is the only one competent to prescribe for diseases of woman's delicate and intricate organism. No woman who values her health should trust to the advice of a mere nurse or a medicine compounded by an incompetent person.

Any woman may consult Dr. Pierce either personally or by letter without cost, and with absolute confidence of receiving the most eminent professional advice anywhere obtainable. Her letter will be answered with careful directions for self-treatment whereby her difficulty may be cured without undergoing the useless examinations so repugnant to modest women.

Every woman ought to read Dr. Pierce's great thousand-page illustrated book, "The People's Common Sense Medical Adviser." A paper-bound copy will be sent free for twenty-one 1-cent stamps to pay cost of mailing only. Address World's Dispensary Medical Association, Buffalo, N. Y. For a handsomer, stronger, cloth-bound copy send ten stamps extra (thirty-one in all).

FARMERS

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

A Vermont Woman Who Farms.

Mrs. Carrie Nelson owns what has been called the best dairy farm in Vermont. She is a widow who has managed her farm and educated her four children since she was left alone, thirteen years ago. She lives at Ryegate, Caledonia county. In 1892 she was awarded the first prize at the Vermont Dairymen's meeting; in 1894 at the Vermont State fair, and the World's Food fair in Boston, and in 1895 at the Vermont and New Hampshire Interstate fair. The butter is put up in half-pound prints, wrapped in paper bearing her printed name and address. The principal sale is in Boston. The cows are all high-grade Jerseys. Two men are hired the year round, and the son and daughter make and handle all the butter. Mrs. Nelson has freed the estate from debt, has made great improvements on the buildings, and bought a large amount of pasture land.

It is a FACT that Hood's Sarsaparilla, the One True Blood Purifier, has proved, over and over again, that it has power to cure even when other medicines fail to do any good.

HOOD'S PILLS are purely vegetable and do not purge, pain or gripe. All druggists. 25 cents.

Union Pacific Route.

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

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 \$8.50 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

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. J. Y. CALAHAN,
General Agent, 111 Adams street, Chicago, Ill. 126

No Room for Doubt.

When the facts are before you, you must be convinced.

The facts are that the UNION PACIFIC is leading all competitors, is the acknowledged dining car route, and great through car line of the West.

The line via Denver and Kansas City to Chicago in connection with the Chicago & Alton railroad, with its excellent equipment of Free Reclining Chair Cars, Pullman Palace Sleepers and Pullman Dining Cars, demands the attention of every traveler to the East. Ask your nearest agent for tickets via this route.

E. L. LOMAX,
42 Gen. Pass. and Ticket Agent.



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 and 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.

C. S. CROSS,

H. L. LEIBFRIED, Manager.

EMPORIA, KANSAS.

The Apiary.

Conducted by A. H. Duff, Larned, Kas., to whom inquiries relating to this department should be addressed.

Diseased Bees.

BEE EDITOR KANSAS FARMER:—I have a hive of bees that is evidently wrong in some way. They have been killing their bees all summer. It seems that about half of the bees they hatch are not right, and the diseased ones are black and some of them are a shiny black from the base of the wings back. They are also smaller than the other bees, and these are the bees they kill. They are worse now than they have been any time, and the colony is dwindling down so that in a short time it will become very weak. I thought, perhaps, the queen was not right, and I took her out and gave them a frame of brood from another hive which had a queen cell about ready to hatch, and if they hatch in eight days after they are sealed over she will hatch to-day or tomorrow. Did I do right by taking the queen out? Will you please tell me what is wrong, and what to do with them? We have a good flow of honey now from alfalfa. Meade, Kas. D. H. Cox.

As near as I can judge, from the description you give, your bees may have what is known as "bee paralysis." This disease is described in one of our standard works, "The A, B, C of Bee Culture," as follows: "Bee paralysis is a disease which is much more prevalent and virulent in warm than in cold climates. Almost every apiarist in the North has, at times, perhaps, one or two colonies in his apiary that would show bees affected with this disease. But it seldom spreads or makes any great trouble. But not so in the South. It is known to affect whole apiaries, and seems to be infectious. Unless a cure is effected in some way it will do almost as much damage as foul brood.

"Symptoms are as follows: In the early stages an occasional bee will be found to be running from the entrance with the abdomen or 'hinder part' of the bee greatly swollen, and in other respects the bee has a black, greasy appearance. While these sick bees may be scattered through the hive, they will sooner or later work their way toward the entrance, evidently desiring to rid the colony of their miserable presence. The other bees seem to regard them as no longer necessary to the future prosperity of the colony, and will tug and pull at them, as they would at a dead bee, until they succeed in getting them out of the hive. Another symptom is that the bees often show a shaking or trembling motion as the disease advances.

"In regard to treatment, two or three remedies have been recommended. In the first cases that came under my experience, the removal of the queen and the introduction of another seemed to effect a cure. But reports from various sources seemed to show that this did not always work. Later on, a solution of salt and water sprayed upon the bees and combs was recommended. As this is a mild antiseptic it is possible that it destroyed the germs. But here, again, in some instances the remedy seemed to work, and in others—that is, in more virulent cases—it seemed to be an utter failure. Perhaps if the bees were put in a clean

hive, upon frames of foundation, and at the same time spray them with a saturated solution of salt and water, the cure might be complete."

There are but three principal diseases known to bees, "dysentery," "foul brood" and "paralysis." Dysentery shows itself in winter and early spring, and is brought on by continued confinement of the bees. Bees that are flying often are seldom affected with it. Foul brood is an affection of the brood only, in which the brood or larvae dies in the cells and becomes a putrid mass.

Bee Notes.

Robbing frequently occurs at the close of the honey season, and queenless colonies will fall a prey to robbers sooner or later. Hence there is no time more important to have colonies in first-class condition.

Beeswax is a valuable product, and every particle of comb should be saved and rendered into wax. The price of beeswax has not fallen below 25 cents per pound for the past twenty years. The solar wax extractor, which can be made very cheaply, should sit in every apiary.

Sweet clover is a valuable honey plant, and is claimed by those who have raised it, that it is equal to alfalfa for feeding stock. [Stock will not eat sweet clover unless very hungry and unable to get anything else.—EDITOR KANSAS FARMER.] It is equally hardy and will resist drought as well as alfalfa and make a much heavier growth.

The convention of the North American Bee Keepers' Association will be held at Lincoln, Neb., on October 7 and 8, next. Arrangements have been made with the railroads to secure home-seekers' excursion rates, which occur on the dates of August 4 and 18, September 1, 15 and 29, October 6 and 20. The rate will be one fare plus \$2, for the round trip.

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.

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.

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

25 VALUABLE HOUSEHOLD RECEIPTS—Sent postpaid for 10 cents, silver. M. J. Reynolds, Newton, Kas.

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 Douglas, 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 OR TRADE—121-acre fruit farm, seventy acres in cultivation, three-room house, good barn, good well and pond, 2,300 apple trees and plenty of other fruits. Will exchange for central or eastern Kansas land. J. W. Ford, Mason Valley, Benton Co., Ark.

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.

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

GREAT BOAR, ROYAL PERFECTION 13159 S. A son of King Perfection 11315 S. and out of Tennessee 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.

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 Slim, Wakarusa, Shawnee Co., Kas.

SHORT-HORN BULLS FOR SALE—Crulckshanks S and Bates breeding. Sired by Valley Champion 110477. Address C. Chambers, Mont Ida, Anderson Co., Kas.

FOR SALE—One hundred and sixty acre farm, one and a half miles from Rushong station, Lyon county, Kansas. Good spring. Price \$8 per acre. J. B. McAfee, 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. Richter Ph. G. M. D., 538 Kansas Ave., Topeka, Kas. Correspondence solicited.

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.

FOR SALE—One hundred and twenty head choice sheep, three-fourths Shropshire, five thoroughbred Shropshire bucks and fifteen Shropshire ewes. For particulars address John Whitworth, Emporia, Kas.

FARMERS, SETTLERS, HEALTH-SEEKERS IN Florida. Write us for information and low prices on homes, orange groves, grape vine, pineapple, fruit, vegetable and farming lands. State requirements. Stapleton & Co., Leesburg, Lake Co., Florida.

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

REWARD.—Stolen from Brighton, Colorado, May 2, 1896, a bay horse, about 9 years old, sixteen and a half hands high, weight about 1,600 pounds, foretop recently cut off, medium length mane and tail, shod all round, branded LV on the left shoulder. The horse is known as Bay Billy and has a trotting record of 2:30. Shuffles from a pace in starting to a trot. When stolen was hitched to a light-weight spring wagon, painted all green; wagon had six springs, four of them half leather. The reward will be paid for information leading to recovery of horse. Address J. P. Higgins, Brighton, Colo., or Field and Farm, Denver, Colo.

THE STRAY LIST.

FOR WEEK ENDING JULY 23, 1896.

Shawnee county—Chas. T. McCabe, clerk. HORSE—Taken up by James Graham, in Silver Lake tp. (P. O. Swinburn), one three-year-old iron gray horse.

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 S 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 LV; 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. Burkpile, in Fall River tp., July 6, 1896, one bay horse, fifteen and a half hands high, harness marks on neck and shoulder.

Marion county—W. V. Church, clerk.

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

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

Cherokee county—T. W. Thomason, clerk.

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

Crawford county—John Ecker, clerk.

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

FOR WEEK ENDING AUGUST 13, 1896.

Logan county—J. F. Light, clerk.

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

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

Cherokee county—T. W. Thomason, clerk.

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

COW—Taken up by 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. Joener, 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.

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.

CALVES STIFF.—I have a couple of calves that are stiff behind and they walk humped up and their tails seem to be hollow near the end. What can I do?
J. A. C.
Lawndale, Kas.

Answer.—Your description does not give a clew to any disease. Give the calves plenty to eat and good care and they will outgrow the trouble.

RUPTURE.—I have a mare colt, five months old, that has a rupture at the navel. What can I do?
G. T.
Stockton, Kas.

Answer.—Many such cases get well without treatment. Let it alone until the colt is a year old and then if it has grown no smaller have it operated on by a veterinarian.

NASAL DISCHARGE.—I have a mare that is running at the right nostril and it is very offensive. She was out in a cold rain one night about three months ago and caught cold and I am afraid it is the glanders.
A. F. S.
Turon, Kas.

Answer.—While I am inclined to think it only a case of nasal gleet, yet its true character can only be determined by an examination, and as you have no veterinarian near, your best plan will be to write to the State authorities.

LAMENESS.—I have a filly that goes lame in her right leg when she trots but walks all right. I cannot locate the lameness, but her hip is shrunken. She was injured in throwing to operate on her teeth.
P. H. S.
Lebanon, Kas.

Answer.—She is quite likely lame in the hip. Rub the joint and shrunken part twice a day with the following: Raw oil, turpentine and ammonia mixed in equal parts. When the skin gets sore stop a few days, then repeat. Let her run on pasture till she gets well.

DIFFICULTY IN BREATHING.—I have a mare which seems to have great difficulty in breathing upon the least exertion. At such times she discharges a whitish-gray mucus tinged with blood.
A. Z.
Erie, Kas.

Answer.—The symptoms are those of glanders. Write to the State authorities at once and have the mare examined. There may only be an abnormal growth of some kind high up in the nostrils, and if so it will require an operation.

STIFFNESS.—I have a mare that has a slight tenderness in her feet or shoulders and hips, I cannot tell which. I drove her twelve miles a day for four days and now she acts as if foundered.
Grenola, Kas.
W. C. H.

Answer.—The mare is probably rheumatic. Give her 2 drams of bicarbonate of potash three times a day for a week. Bathe her legs and muscles, where sore, with hot salt water twice a day and rub dry each time.

ONE HONEST MAN.

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

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.

MARKET REPORTS.

Kansas City Live Stock.
KANSAS CITY, Aug. 10.—Cattle—Receipts since Saturday, 5,400; calves, 802; shipped Saturday, 9,520 cattle, 1 calf. The market was steady to strong on natives: generally steady on westerns. The following are representative sales:

SHIPPING AND DRESSED BEEF STEERS.
No. Ave. Price No. Ave. Price
22.....1,297 \$4.10 1.....1,340 \$4.10
24.....1,360 3.95 37.....1,510 3.80
44.....1,281 3.82½ 2.....1,180 3.35

TEXAS AND INDIAN STEERS.
21.....1,245 \$2.85 23.....1,042 \$2.85
128.....1,002 2.80 68.....1,068 2.77½
107.....1,019 2.75 49.....1,129 2.70
28.....803 2.35 25.....937 1.65

NATIVE HELPERS.
1.....420 \$3.00 9.....873 \$2.70

NATIVE COWS.
4.....1,115 \$2.70 1.....1,230 \$2.65
7.....942 2.60 2.....915 2.50
6.....1,030 2.25 10.....1,068 2.00
2.....1,120 1.45 3.....910 1.15

NATIVE FEEDERS.
23.....1,066 \$3.40 53.....1,036 \$3.30
12.....1,016 3.35 2.....940 2.80
2.....1,055 3.75 1.....1,330 2.60

NATIVE STOCKERS.
6.....700 \$3.50 15.....874 \$3.25
14.....552 3.45 6.....786 3.40
8.....582 3.25 4.....535 3.20
1.....630 2.50 1.....800 2.25

Hogs—Receipts since Saturday, 1,375; shipped Saturday, 1,343. The market was weak to 5c lower. Following are to-day's sales:

8.....100 \$3.05 44.....135 \$3.05 259.....195 \$3.05
21.....128 3.00 81.....195 3.00 7.....101 3.00
76.....205 3.00 1.....93 3.00 24.....226 2.95
46.....3 2.95 64.....321 2.95 72.....203 2.92½
26.....247 2.90 36.....244 2.90 41.....350 2.85
42.....216 2.85 66.....281 2.85 65.....254 2.85
1.....290 2.85 76.....248 2.85 30.....187 2.85
14.....249 2.85 41.....860 2.77½ 6.....330 2.70
3.....403 2.70 39.....226 2.75

Sheep—Receipts since Saturday, 4,179; shipped Saturday, 223. The market was steady and active. Following are to-day's sales:

17 lambs.....60 \$3.25 7 nat. ew. 132 \$2.50
450 Wyo.....102 2.50 518 Tex.....76 2.35

Chicago Live Stock.

CHICAGO, Aug. 10.—Cattle—Receipts, 17,070; market strong: fair to best beefs, \$3.25 to 4.00; stockers and feeders, \$2.50 to 3.00. Mixed cows and bulls, \$1.25 to 3.75; Texas, \$2.40 to 3.00.

Hogs—Receipts, 31,000; market 5 to 10c lower than Saturday's closing: light, \$3.00 to 3.35; rough packing, \$2.60 to 2.75; mixed and butchers, \$2.90 to 3.25; heavy packing and shipping, \$2.80 to 3.00; pigs, \$2.60 to 3.35.

Sheep—Receipts, 1,600; market weak: native, \$2.00 to 3.25; western, \$2.30 to 3.00; lambs, \$3.00 to 5.65.

St. Louis Live Stock.

ST. LOUIS, Aug. 10.—Cattle—Receipts, 4,500; market steady; Texas steers, \$2.70 to 3.75. Hogs—Receipts, 3,000; market 5c lower: light, \$3.00 to 3.25; mixed, \$2.80 to 3.15; heavy, \$2.90 to 3.20. Sheep—Receipts, 1,200; market strong.

Chicago Grain and Provisions.

Aug. 10. Opened High'st Low'st Closing

Wht—Aug.....56¾.....57¾.....56¾.....57¾
Sept.....56¾.....57¾.....56¾.....57¾
Dec.....59¾.....60¾.....59¾.....60¾

Corn—Aug.....24¾.....25¾.....24¾.....25¾
Sept.....24¾.....25¾.....24¾.....25¾
May.....28¾.....29¾.....28¾.....29¾

Oats—Aug.....17¾.....18¾.....17¾.....18¾
Sept.....17¾.....18¾.....17¾.....18¾
May.....20.....21.....20.....21

Pork—Aug.....6 25.....6 31.....6 25.....6 31
Sept.....6 25.....6 31.....6 25.....6 31
Jan.....6 87½.....7 10.....6 87½.....7 10

Lard—Aug.....3 12½.....3 22½.....3 12½.....3 22½
Sept.....3 12½.....3 22½.....3 12½.....3 22½
Jan.....3 50.....3 57½.....3 50.....3 57½

Ribs—Aug.....3 35.....3 37½.....3 35.....3 37½
Sept.....3 35.....3 37½.....3 35.....3 37½
Jan.....3 42½.....3 52½.....3 42½.....3 52½

Kansas City Grain.

KANSAS CITY, Aug. 10.—Receipts of wheat here were larger to-day than on any other day this year, and the average quality was better though the bulk was No. 3. Prices were generally steady, except on No. 4 hard, which seemed a little lower. Soft wheat was very scarce.

Receipts of wheat here to-day, 128 cars; a year ago, 64 cars.

Sales were as follows on track: Hard No. 2, 2 cars 52½c, 2 cars 52½c, 4 cars 52c, 2 cars 51½c; No. 3, 2 cars 48½c, 25 cars 48c, 3 cars 47½c, 3 cars 47c, 1 car 46c; No. 4, 5 cars 44c, 1 car 43½c, 3 cars 43c, 2 cars 42c, 3 cars 41c; rejected, 1 car 38c, 4 cars 40c, 2 cars 41c; no grade, nominally 30 to 33. Soft, No. 2 red, nominally 55 to 56c; No. 3 red, 2 cars 53½c, 3 cars 53c; No. 4 red, 2 cars 50c, 1 car 45c, 1 car 43c; rejected, nominally 40 to 44c; no grade, nominally 35 to 40c.

Corn sold at about Saturday's prices. There was very little trade in through billed corn. for two reasons—because shippers showed no disposition to buy, and because there was little offering. Corn was worth nominally 21½c Mississippi river, and 26½c Memphis. There was no trade in futures.

Receipts of corn here to-day, 204 cars; a year ago, 109 cars.

Sales by sample on track: No. 2 mixed, 2 cars 21½c, 2 cars 21½c, 2 cars 21½c; No. 3 mixed, 4 cars 21c; No. 4 mixed, 1 car 20½c, 2 cars 20c, 1 car 19c; no grade, 1 car 16c; white, No. 2, 3 cars 21½c; No. 3, nominally 21c; No. 4, nominally 20c.

Oats were irregularly lower. Low grades made up most of the offerings and they were hard to sell.

Receipts of oats to-day, 25 cars; a year ago, 16 cars.

Sales by sample on track: No. 2 mixed, 1 car 18c, 1 car 17c; No. 3, 1 car 14c, 1 car 15c; No. 4, 1 car good 14c; no grade, nominally 8 to 12c; No. 2 white, 4 cars 22c; No. 3 white, 3 cars 20c, 2 cars 18½c, 1 car 16½c, 2 cars 15c; No. 4 white, 8c bid.

Hay—Receipts, 89 cars; market weak. Choice timothy, \$7.00 to 7.50; No. 1, \$6.00 to 6.50; No. 2, \$5.00; No. 3, \$4.00 to 4.50; prairie, choice, \$4.00 to 4.50; No. 1, \$3.50 to 4.00; No. 2, \$3.00 to 3.50; No. 3, \$2.00 to 2.50.

J. G. Peppard

1400-2 Union Avenue,
KANSAS CITY, MO.

MILLET
CANE
CLOVERS
TIMOTHY
GRASS SEEDS.

SEEDS

Olander & Isaacson, Live Stock Commission

Special attention given to the feeder trade. Kansas City Stock Yards, Kansas City, Mo.
Rooms 65 and 66, first floor Stock Exchange.

BROOMCORN

ESTABLISHED 1873
ON CONSIGNMENT OR
SOLD DIRECT.
We carry the largest stock of Broom Manufacturers' Supplies in the United States. Correspondence solicited.
J. P. GROSS & CO., 239-241 Kinzie St., Chicago, Ill.

ELM BEACH FARM POLAND-CHINA SWINE

The home of the great breeding boar, SIR CHARLES CORWIN 33095. Our 1896 crop of pigs ate 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.
IRWIN & DUNCAN, Wichita, Sedgwick Co., Kas.

WE SELL DIRECT TO FARMERS.



Three-wheel Rake.....\$16.50
Two-wheel Rake.....14.50
Sections, with rivets......06
Guards......22
4½-foot knife......3.75
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.

St. Louis Grain.
ST. LOUIS, Aug. 10.—Receipts of wheat, 184,000 bu.; last year, 136,000 bu.; corn, 354,000 bu.; last year, 49,000 bu.; oats, 59,400 bu.; last year, 85,410 bu. Closing prices: Wheat—Cash, 58½c; September, 58c; December, 61½c; August, 59½c. Corn—Cash, 21½c; September, 21½c; December, 23½c; August, 22c. Oats—Cash, 18½c; September, 18c; August, 19½c.

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

Eggs—Strictly candled stock, 7½c per doz. Poultry—Hens, 5½c; roosters, 15c each; springs, 7c per lb.; turkeys, hens, 6c; gobblers, 5c; old, 4½c; spring ducks, 7c; old, 6c; spring geese, 6c; pigeons, \$1.00 per doz.

Fruits—Peaches, home grown, 20 to 30c a peck; shipped stock, third bushel boxes, fancy, 40c; inferior stock, 3½ to 40c; 4-basket crates, extra fancy, 75c; inferior to good, 50 to 60c; 6-basket crates, extra fancy, \$1.25; fair, \$1.00. Apples, Maiden Blush, 30 to 40c a bu.; the common kind, 10 to 20c a bu.; other varieties, except fancy stand stock, sell from 2 to 40c a bu.; fancy White Holly and Red Junes for stand purposes are getting scarce and range from 10c to \$1.00 according to quality; Maiden Blush, shipped stock, ranges from \$1.00 to 1.25 per bbl.; sweet apples, 75c to \$1.00 per bbl.; Siberian crabs, slow, 50c a bu.; other varieties, 20c a peck. Grapes, Moore's Early, ranged from 30 to 35c a peck for the best quality; Telegraph, 30 to 35c a peck; Concord, 25c; white grapes for jelly purposes, 2c a peck.

Potatoes—Home grown, 15 to 20c per bu. in a small way; round lots, 12½c. Sweet potatoes, 50 to 75c in a small way; new stock, 60 to 75c per bu.

Consign Cattle, Hogs and Sheep to

LONE STAR
Commission Company

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

—CONSIGN YOUR SHEEP TO—

KNOLLIN & BOOTH,
Sheep Commission Merchants.
Rooms 304-305 Exchange Bldg.,
KANSAS CITY, MO.

Direct all mail to Station A. Market reports furnished free to all sheep feeders of breeders on application. Correspondence solicited and prompt reply guaranteed.

GROWERS OF AND DEALERS IN

Cattle, Hogs and Sheep

MAKE YOUR CONSIGNMENTS TO

Ben. L. Welch & Co.
COMMISSION MERCHANTS,
STOCK YARDS, KANSAS CITY, MO.
And EAST ST. LOUIS, ILL.

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

When you write mention Kansas Farmer.

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

Pete's Coffee House

AND LUNCH COUNTER.
The popular restaurant. Opposite

Kansas - City - Stock - Yards
P. S. RITTER, Proprietor.

HORSES SOLD AT AUCTION

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

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

Given Away

If it does not save its cost on one lot of hogs. Address

Martin & Morrissey
Mfg. Co.,
OMAHA, NEB.

When you write mention Kansas Farmer.

Portable Well Drilling MACHINERY

Established 1867. Covered by patents. Machines drill any depth both by steam and horse power. We challenge competition. Send for free illustrated catalogue.

Address, **KELLY & TANEYHILL,**
WATERLOO, IOWA.

When you write mention Kansas Farmer.

On to ST. PAUL

Is the G. A. R. Watchword.

The Official Route for KANSAS IS NAMED.

The Official G. A. R. Train from Kansas will go over the

Chicago, Rock Island & Pacific Railway.

The National Encampment, G. A. R., at St. Paul, Minn., is

SEPTEMBER 1-4, 1896.

Train will leave Kansas points Sunday, August 30, 1896. Kansas City 6:00 p. m. and St. Joe 6:25 p. m., same evening, and run through to St. Paul without change, arriving at St. Paul Monday afternoon at 1 o'clock.

The equipment of train will be High-Back Coaches, Chair Cars (free), and both Tourist and Standard Pullman Sleepers.

For rates, apply to your nearest Agent. For reservations and rates in sleeping cars, write or apply to

A. H. MOFFET, G. S. W. P. A.
T. J. ANDERSON, A. G. P. A., Topeka, Kas.
U. S. G. HOUGH, T. P. A., Kansas City, Mo.

WARREN COWLES, C. P. A., St. Joe, Mo.
JOHN SEBASTIAN, G. P. A., Chicago.

The Poultry Yard

NEAT POULTRY HOUSE.

The Building Here Described Has Many Points in Its Favor.

There are many plans for houses used in keeping laying hens. Each one has its points in value. The building shown in this illustration has the practical points in its favor—the part for laying is separate from the part where the fowls roost, feed and seek outdoor exercise. There is no doubt of the advantage of seclusion and quiet for all layers.

Figure 1 shows the exterior view. The place for cooking the food is located outside in the small shed afford-

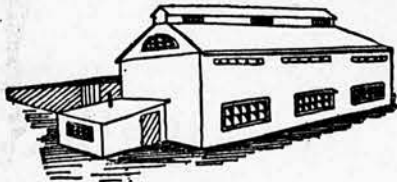


FIG. 1.

ing more room for the fowls inside. The inside is divided into two distinct sides or coops, one for nesting places for the laying hens, which is inaccessible from the walk platform extending over the passageway from one coop to the other. In Fig. 1, by error in drawing, the window appears on the wrong side of the building; the laying part should have no windows, there being over the entrance doors leading to the yard. These windows should be located down low to admit plenty of sun during winter weather.

Doors lead in from the hall or passageway to either per. The roosts are constructed, as shown, with a pitch or slanting floor, where the droppings may fall on a sanded surface and roll down

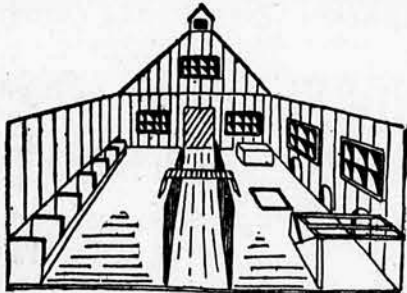


FIG. 2.

to the bottom, and be gathered up as often as necessary. The feeding square is filled with sharp sand, and grain is given to the flock in this inclosure, except cooked food, which should be placed in troughs to prevent them slopping it about the floor of the coop.

The house is ventilated by the small holes bored in the side which consists of a frame or trap door. This is placed on hinges, being raised and lowered by means of a strong cord when it is necessary. An upper story is reached by ladder from the coop below, and is found very useful for a storage room for grain, a shop to work in or be used for keeping pigeons or rabbits in. This is also ventilated well through the upper cupola, which has similar windows on hinges, as described for the main building.

The dimensions of this building can be made to meet the needs of the builder; this one is 35 feet long, 24 feet wide and 21 feet high. The small cook house is 10 feet long, 8 feet high, and 7 feet wide. The yard is 30 by 35 feet wide, and constructed of wire netting or lathing fastened to locust posts.—John W. Caghey, in Country Gentleman.

AMONG THE POULTRY.

Healthy fowls pick up their food quickly and relish it.

There is no gain in keeping roosters after the hatching season is over.

Generally the more active the breed the less liability to fatten.

Many poultry disorders are caused by alternate gorging and starving.

Ducks and geese require little grain when they have plenty of grass.

Early layers depend upon the stock and upon the way they are raised.

It is a good plan when feeding whole grain to fowls to scatter it out well.

Geese are at their best for breeding after they have passed their third year.

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

Mites.

EDITOR KANSAS FARMER:—Through your valuable columns please let me know what is good for mites on little chicks. Never knew of them till this season. Been watching in your paper to see if any one would ask about them. Silver Lake, Kas. M. A. J. B.

—Use insect powder. Dust it among feathers and in nests. If the poultry house is badly infested, shut it up and use bisulphide of carbon or burn sulphur in it.

Poultry in the Summer.

It is very important to provide good ventilation during the summer. By keeping the doors and windows open during the day the henneries can be kept cooler. So long as the poultry can have free range they will cost but little ventilation during the summer. By little grain feeding will be necessary. When intended to be fattened for market poultry should be kept in a close yard and be given all they will eat.—Denver Field and Farm.

The Workshop of the Bee.

Properly considered a beehive is a wonderful shop, and each individual insect is a curiosity. The inhabitants of a hive are classed as drones, workers and queens. The queen is the mother of every insect in the hive, unless she has been installed instead of a queen who had died and left the hive without a mistress. The queen bee is the wonder of the whole insect tribe, as far as laying of eggs is concerned, often depositing 4,000 eggs in a day for days in succession during the most productive season.

The chief wonder connected with the worker bee is the admirable manner in which his body is shaped and fitted with instruments for honey gathering. These natural instruments consist of cups, combs, brushes, knives, funnels, scrapers, etc., each of which is worthy of a week of careful and painstaking study under a high grade microscope.—Chicago Chronicle.

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.

Unequaled Service

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

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

E. L. LOMAX,
Gen. Pass. and Ticket Agent,
Omaha, Neb.

"Among the Ozarks."

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

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.

• LAMSTRONG & McKEVY
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IT IS JUST AS EASY, and a heap more sensible, to use a little care in the selection of materials when having painting done and secure the best result as it is to take chances and use mixtures of which you know nothing. To be sure of getting

Pure White Lead

examine the brand (see list genuine brands). Any shade or 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.



Used and endorsed by Adams Express Co.

HORSE OWNERS RECOMMEND

This remedy very highly. We have thousands of testimonials. It is the only standard remedy on the market. If your horse is lame you need this remedy, for it will cure more speedily than any other remedy in the world.

TUTTLE'S ELIXIR

Is a positive, safe and speedy cure for Colic, Curbs, Splints, Contracted and Knotted Cords, Callous of all kinds, etc. Brings speedy relief in case of Spavins, Ring-Bone and Cockle Joints.

Tuttle's Family Elixir is the best for all pains, bruises, ches, Rheumatism, etc., etc.

Samples of either Elixir are sent for three 2-cent stamps to pay postage. 50 cents buys full-sized bottle of either Elixir at any druggist's or it will be sent direct on receipt of price.

DR. S. A. TUTTLE, 27 G. Beverly St., Boston, Mass.

A SMALL THRESHING MACHINE:

Something new for the farmer, who can now do his own threshing, with less help and power than ever before. We also make a full line of Sweep Powers, Tread Powers, etc.

THE COLUMBIA THRESHER has great capacity, and can be run by light power. Send for illustrated Catalogue, giving testimonials.

BELLE CITY FEED AND ENSILAGE CUTTERS

Made in all sizes, for both hand and power use. Send for illustrated Catalogue and Price List. We will send latest publication on Ensilage to all who write for it.



BELLE CITY MFG. CO. BOX 25
Racine, Wis.

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.

BUY THE BLUE VALLEY FEED MILL



If you want a mill that will grind corn and cob and all small grains. The largest mill made, hence the greatest capacity. FULLY WARRANTED! Made in sweep and power styles and five different sizes. Write for illustrated circulars.

THE BLUE VALLEY MANUFACTURING CO.,
(Successors to Blue Valley Foundry Co.)
MANHATTAN, KANSAS.

WOVEN WIRE FENCE

Over 50 Styles! The best on Earth. Horse high, Bull strong, Pig and Chicken tight. You can make from 40 to 60 rods per day for from 14 to 22c. a Rod. Illustrated Catalogue Free. KITSEY MAN BROS.,
Ridgville, Indiana.

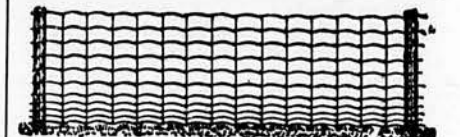
WINDMILL OWNERS

stop the jerking, breaking and lifting platform with a perfect spring. No good, no pay. Agents wanted. Egis Mfg. Co., Marshalltown, Iowa.

LIGHTNING WELL MACHY

PUMPS, AIR LIFTS, GASOLINE ENGINES. CIRCULARS FREE

THE AMERICAN WELL WORKS. AURORA, ILL. - CHICAGO - DALLAS, TEX.



BUFFALO HUNTING.

Everybody can now indulge in this pastime. Here are a few hints: Buy excursion tickets to your State Fair! Take the whole family along. The "kids" can watch the deer and fawns while you keep your eye on the big game. Once inside the grounds, lay low and watch the crowd till you locate our exhibit, then charge on it with a wild whoop. Send for pictures.

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.

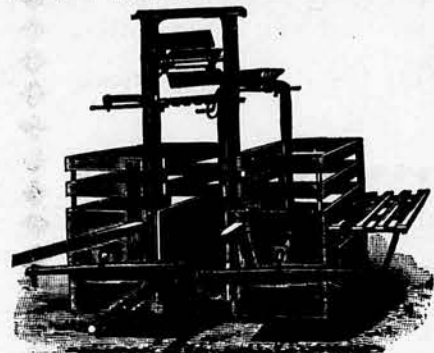
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Farm and Wagon SCALES.
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 38 Styles & Sizes for Horse and Steam Power
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 Power Leverage 64 to 1
 Send for 64 page illustrated catalogue,
COLLINS FLOW CO., 1120 Hampshire St., Quincy, Ill.

J.I.C. DRIVING BIT Still King
 THE BIT OF BITS.
 Will control the most vicious horse.
 Sales Greater Than Ever.
 Sample mailed XC for Nickel, \$1.00.
 Stallion Bits 50 cts. extra.
RACINE MALLEABLE IRON CO., WIS.

The Baldridge Transplanter.
 Made of steel and iron. Earlier and larger crops.
 Soil, roots and plants taken up together, preventing stunting or injury. Vegetables, flowers, strawberries, tobacco, small nursery trees, etc., can be moved at all seasons. Invaluable for filling vacancies. Transplanter with blade 2 inches in diameter, \$1.25; same with 3-inch blade, \$1.50. **SPECIAL PRICE** with **KANSAS FARMER**: By a special arrangement with the manufacturers we are able to offer the Transplanter and **KANSAS FARMER** one year for price of Transplanter alone. Send \$1.25 and we will mail **KANSAS FARMER** to you and send you the Transplanter by express. Or call at **FARMER** office and get the Transplanter and save 25c. express charges.
 Address
KANSAS FARMER CO., Topeka, Kas.

IDEAL FARM IMPLEMENT CO.



MANUFACTURERS OF
 Eureka Kafir Corn and Sorghum Header,
 Climax Corn Cutter and Shocker,
 Alliance Combined Hay Rake and Loader.
 Cor. Vine & Water St., FT. MADISON, IOWA.

WIND MILLS AND PUMPS

Gem and Halladay Mills

FOR IRRIGATION OR ANY OTHER USE.



Wooden and Steel Tanks,
 Iron and Wooden Pumps,
 Engines and Boilers,
 Gasoline Engines,
 Belting, Hose and Packing,
 Pipe, Fittings, Drive Points.

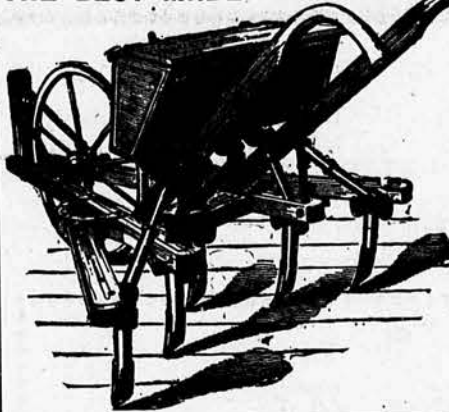
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U. S. WATER & STEAM SUPPLY COMPANY,
 KANSAS CITY, MO.

THE RUMELY
 If you are thinking about **TRACTION ENGINES**
 We present "THE NEW RUMELY" which is the climax of 44 years' experience in engine building. Embodying all the best inventions of our own and many others. **IT IS STRONG—SIMPLE—DURABLE AND EASILY OPERATED.** But there is more to it—explained in detail in our new catalogue—**FREE.**
M. RUMELY CO., LAPORTE, IND.

LIGHTNING HAY PRESS.
 IT IS THE BEST.
 Our Catalog tells why.
 Kansas City Hay Press Co.,
 1217-1219 Union Ave., Kansas City, Mo.

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. Weighs 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.

THE FULLER-LEE DISC PRESS DRILL!



It is light draft.
 It cultivates the ground.
 It makes an ideal seed-bed.
 It scatters the seed two inches in the rows, giving ample room for stooling.
 It throws up good ridges between the rows, which act as a mulch.
 It presses the earth firmly over the seed.
 It cuts right through the trash and deposits the seed under it.
 Trash gives no trouble.
 Corn ground and oat stubble need not be plowed.
 It saves time, labor and money.
 It increases yield 5 to 20 per cent.

Write for Circulars.
FULLER-LEE MFG. CO.
 1219 UNION AVE.,
 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 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	2,170,837	567,015		
Sold to feeders.....	392,262	1,376	111,445		
Sold to shippers.....	218,905	273,999	69,784		
Total Sold in Kansas City, 1895.....	1,533,234	2,446,202	748,244	41,588	

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

NO YARDAGE CHARGED UNLESS THE STOCK IS SOLD OR WEIGHED.
C. F. MORSE, E. E. RICHARDSON, H. P. CHILD, EUGENE RUST,
 V. Pres. and Gen. Manager. Secretary and Treasurer. Assistant Gen. Manager. Gen. Superintendent.
W. S. TOUGH & SON, Managers HORSE AND MULE DEPARTMENT.

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!!

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VIA COLORADO SPRINGS

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To Cripple Creek than any other line.

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THE FAVORITE ROUTE TO THE

East, West, North, South.

Through cars to Chicago, St. Louis, Colorado, Texas and California.

Half Rates to Texas Points!

LOW RATES TO ALL POINTS.

Especially California, Texas and Southeastern Points. If you are going to the Midwinter Fair at San Francisco, if you are going to Texas, if you are going East on business or pleasure—in fact, if you intend to do any traveling, be sure to consult one of the agents of the

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Vitality MEN Restored.

Falling Sexual Strength in old or young men can be quickly and permanently cured by me to a healthy vigorous state. Sufferers from.....

NERVOUS DEBILITY, WEAKNESS, VARICOCELE,

AND ALL WASTING DISEASES should write to me for advice. I have been a close student for many years of the subject of weakness in men, the fact is, I was a sufferer myself. Too bashful to seek the aid of older men or reputable physicians I investigated the subject deeply and discovered a simple but most remarkably successful remedy that completely cured me. I want every young or old man to know about it. I take a personal interest in such cases and no one need hesitate to write me as all communications are held strictly confidential. I send the recipe of this remedy absolutely free of cost. Do not put it off but write me fully at once, you will always bless the day you did so. Address

THOMAS SLATER, Box 960,
 Shipper of Famous Kalamazoo Celery,
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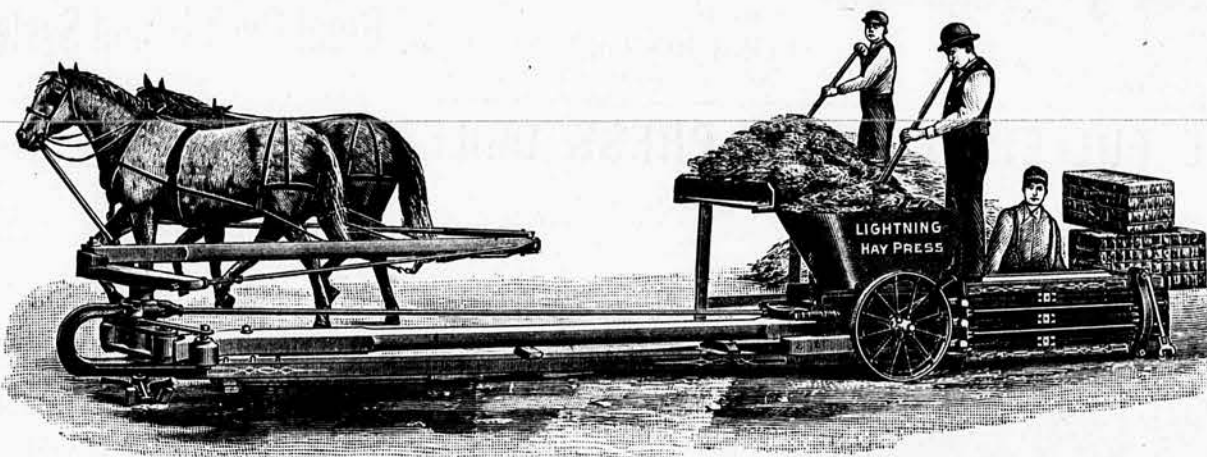
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AGENTS To sell cigars to dealers; \$18 weekly, experience not required. Samples free. Reply with 2c. stamp. National Consolidated Co., Chicago, Ill.

KEEP THIS PAGE

Talk is cheap with some folks, but it costs us a good deal to talk in the KANSAS FARMER this week, therefore we want you to listen attentively, and then keep this copy of the paper for reference. You will find some good things on the inside pages that you will want to remember also. The first thing we want to speak of is the **LIGHTNING HAY PRESS**. Of course you have heard of it before. Its praises have been sung for lo, these many years, because it was the first full-circle steel hay press offered to the trade. "There are others" but only one **LIGHTNING**. Beware of the man who offers the "Improved Lightning" with some other name. The Lightning press has been improved from time to time since its introduction, but it is still



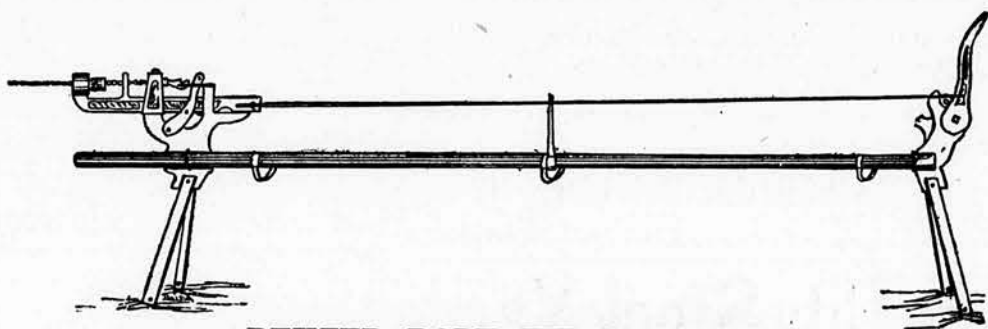
THE LIGHTNING HAY PRESS

and always will be. You will find the **genuine** with no other name. It is **simple, rapid and durable**.

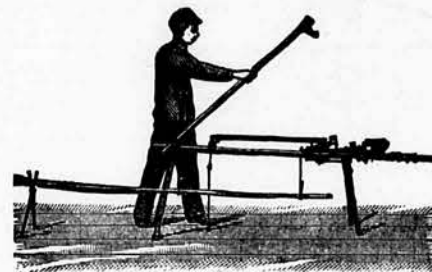
We are selling them at reasonable prices and on easy terms. You can buy Hay Presses for less money than you can buy the Lightning. If you are going to buy the press that you can buy for the **least money**, don't waste your time writing to us. **But**, if you want the press that is really the **cheapest**,

we can accommodate you. The success of the Lightning has brought out many cheap imitations. You buy it for less; in two seasons (and often in one) you find repair bills and loss of time would more than make up the difference in purchase price, and you have an old press, almost ready for the scrap-pile, while your neighbor's Lightning is good as new. **Get the best. Let the other fellow do the experimenting.**

For those who want a press not costing as much as the Lightning, we can supply them with a good one in our **Electric Press**. Let us tell you about it.



DEXTER BALE TIE MACHINE.



STAR BALE TIE MACHINE.

If you bale hay you need bale ties. We can sell 'em to you cheap as anybody, or we can sell you the best bale tie machines made for making your own ties. **Get circulars of Bale Tie Machines.**

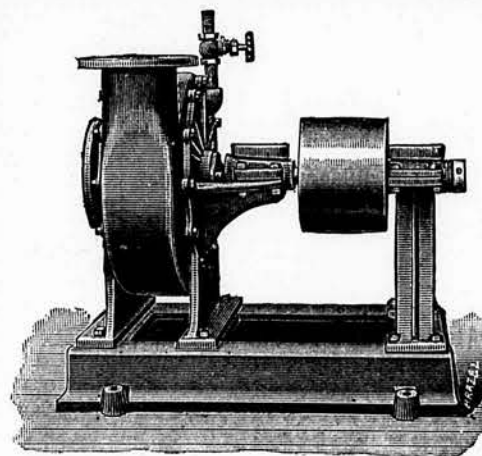
CORN HARVESTERS

We haven't room here to illustrate our Corn Harvesters, but we have the harvesters and will take pleasure in sending illustrated circulars and full descriptions.

Prices from \$15 Up.

The corn crop is going to be immense this year. Corn is cheap now, but that's no reason the crop should not be well cared for and the fodder saved. It saves hay. Hay is cheap, too, now, but it is going to be worth more money before the next President is inaugurated.

CORN HARVESTERS



Write for our Special Pump Catalogue, on Centrifugal and Irrigating Pumps.

Write for our Catalogue giving full description of the Lightning Hay Press, Champion Rakes and Stackers, and other goods. Mention the KANSAS FARMER, and address, for prompt answer,

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