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(Breeders' Directory continued on page 18.)

Agricultural Matters.

WEEDS, AND HOW TO KILL THEM.

Investigations of Lyster H. Dewey, Assistant Botanist, United States Department of Agriculture.

(Continued from last week.)

WEEDS ATTRACTING ESPECIAL ATTENTION DURING 1894.

The influence of the Russian thistle agitation is plainly manifest in the attention given to certain weeds during the past season. Nearly one-half of those received at the United States Department of Agriculture with requests for naming and information belong to species which are more or less prickly, and many of them have been mistaken for the Russian thistle. While but few complaints have been received in regard to the older well-known weeds, such as ragweed, dog fennel and shepherd's purse, it is not to be supposed that these are becoming less abundant or troublesome. People are generally familiar with these common weeds, too often so familiar that the weeds have come to be accepted as a matter of course and a necessary evil. Complaints about Canada thistle, couch grass and Johnson grass indicate that these weeds, even when well known, cannot be disregarded; but in general it is the new weed coming as an added evil that attracts attention.

Aside from the Russian thistle, the following ten species of weeds in the order given have received the most notice during 1894, according to the reports received at the United States Department of Agriculture:

- Prickly lettuce (*Lactuca scariola*).
- Bracted plantain (*Plantago aristata*).
- Horse nettle (*Solanum carolinense*).
- Buffalo bur (*Solanum rostratum*).
- Spiny amaranth (*Amaranthus spinosus*).
- Dagger cocklebur (*Xanthium spinosum*).
- Chondrilla (*Chondrilla juncea*).
- Wild carrot (*Daucus carota*).
- Wild oat (*Avena fatua*).
- False flax (*Camelina sativa*).

The prickly lettuce is also known by the common names, milk thistle, English thistle and compass plant. During the past season it has been mistaken for Russian thistle in many localities. It is a native of Europe. The first record we have of it in this country is in the fifth edition of "Gray's Manual" (1868), where the locality is given as "waste grounds and roadsides, Cambridge, Mass." About ten years later it was observed in the region of the Great Lakes, and now it has become widely distributed throughout nearly all the States from Massachusetts to Virginia and westward to the Missouri river, and has crossed the mountains to Idaho, Oregon and Washington. It is most abundant and troublesome in the States bordering on the Ohio river and the great Lakes.

The prickly lettuce is closely related to the common garden lettuce, which it resembles in the seed-bearing stage. It is an annual, sometimes doubtless a winter annual, partaking of the character of a biennial. The stem, smooth or with small scattered prickles, rises to a height of two to six feet, bearing a few lateral branches and a large open panicle of flowers. The flowers are small, one-fourth to one-half inch in diameter, yellow, and inconspicuous, as only a few are open at a time. The plant begins to bloom in July and produces a few blossoms each morning thereafter until killed by the frost. The seed, or strictly speaking, the akene—the seed with the close-fitting case which contains it—is dark brown in color, flattened, between oblong and lance-shaped in outline, about one-sixth of an inch long and one-fourth as broad. On each of the flat faces there are five or six ridges lengthwise, which are finely roughened. At the apex is a slender, thread-like beak, nearly as long as the body of the akene, bearing a tuft of fine white hairs about as long as itself. In the fruiting stage the tufts of the ten to fifteen seeds which grow in one head spread out so as to form a white, gauzy ball of down, like that of the dandelion, but smaller and less dense. A single average plant has been estimated to bear more than 8,000 seeds. The leaves are oblong and without stalk, the blade clasping the main stem by a base with two ears. They are prickly along the wavy margins and

along the midrib on the back. The principal leaves on the stem have the unusual habit of twisting so that the upper part of the blade becomes vertical. They also point north and south, hence the name compass plant. The white, milky juice has suggested the name milk thistle. Both of these names are incorrectly used in this connection as they are properly applied to very different plants.

Unlike most annual weeds, the prickly lettuce is very troublesome in meadows and permanent pastures. Clover intended for a seed crop is often entirely ruined. Oats and other spring grain crops suffer more or less damage.

Sheep and sometimes cattle will eat the young prickly lettuce, and in some localities their services have been found very effective in keeping it down, especially in recently-cleared land where thorough cultivation is impossible. Repeatedly mowing the plants as they first begin to blossom will prevent seeding and eventually subdue them. Thorough cultivation with a hoed crop, by means of which the seed in the soil may be induced to germinate, will be found most effective. The first plowing should be shallow, so as not to bury the seeds too deep. Under no circumstances should the mature seed-bearing plants be plowed under, as that would only fill the soil with seeds buried at different depths to be brought under conditions favorable for germination at intervals for several years. Mature plants should be mowed and burned before plowing. The seed appears as an impurity in clover, millet and the heavier grass seeds, and the plant is doubtless most frequently introduced by this means. As the seed may be carried a long distance by the wind, the plants must be cleared out of fence rows, waste land and roadsides.

BRACED PLANTAIN (*Plantago aristata*).

This plant, although a native of the Mississippi valley and well known to botanists since the beginning of the present century, is practically new as a weed. In a very few instances its seeds have been mentioned as a minor impurity in clover seed, but it is not named in any of the numerous lists of weeds of the United States. During the past season it has appeared in abundance in meadows, pastures and lawns in many localities from Maryland to Illinois. Although generally reported as new, it had doubtless existed before in small quantity and with less robust habit in many of these places. In some instances, however, it is known to have been introduced during the past season in lawn grass seed.

The bracted plantain is an annual, sometimes a winter annual, and in some cases the roots are apparently perennial. The leaves are not killed even by severe frosts. It is closely related to the lance-leaved plantain, or rib grass, and to the woolly plantain. The leaves, appearing almost like a tuft of rather thick, dark green grass leaves, spring from the apex of a somewhat thickened root. The seed-bearing stems, five to twelve inches in height and numbering five to twenty-five on each plant, as in other plantains, are leafless and naked near the base. At first the flower spike is contracted and short, but at maturity it is two to five inches long and crowded with small flowers. Below each flower is a narrow green bract one-half to one inch long, giving the flower spike a plume-like appearance. Each flower produces two seeds in an egg-shaped capsule which opens transversely, the dome-shaped lid with the persistent, papery corolla lobes falling away with the two seeds hanging in it. This kind of parachute enables the seeds to be carried a short distance by the wind. They usually fall near the parent plant, hence after the first introduction the bracted plantain grows in dense colonies, covering the ground so thickly as to choke out all other vegetation. An average plant produces about fifteen flower spikes, and an average spike bears about 100 flowers or 200 seeds, making a total of about 3,000 seeds to the plant. The seeds are dark brown or nearly black, oblong, concavo-convex, rounded at the ends, and about one-twelfth of an inch long. They are

most likely to be found as an impurity in clover seed and the heavier grass seeds.

The bracted plantain is so low and inconspicuous and its leaves are so much like those of grass that it is not easily discernible until the flower spikes appear. Hand-pulling and burning is perhaps one of the best remedies where the plants are not too abundant. If the land has become thoroughly seeded a series of hoed crops will probably be necessary to clear it out. In permanent pasture, mowing the plants as the seed stalks first appear will keep them in subjection. The mowing will have to be repeated several times, however, as the bracted plantain sends up seed stalks from May until November.

The reports concerning this plant during the past season indicate that, if unchecked, it is likely to prove as troublesome as the rib grass which has become so widely distributed, chiefly in clover seed. The seeds of the bracted plantain are of nearly the same size and shape as those of the rib grass, and as they ripen throughout the same season—June to November—they are just as likely to be harvested and threshed with the clover seed.

(To be continued.)

Recent Progress in Soil Analysis.

The usefulness of the chemical analyses of soils in practical agriculture has long been a theme of contention among agronomists. On the one hand, the advocates of chemical analysis have contended that the agricultural value of a soil could be easily deduced from the data afforded by analysis. On the other hand, it has been affirmed with equal persistence that the data of a chemical examination afforded no just criterion of the availability of plant foods found in the sample. It is not the intention here to review these discussions, but it will be sufficient to say that there is a certain relationship between the quantities of plant food revealed by chemical analysis and the productiveness of the soil.

It is so evident, however, that this relationship is not constant that it is not necessary to cite any proof. The physical state of a soil, the climatic condition prevailing, the character of the cultivation and the nature of the crop have all to be considered and all have their influence. It has long been known that the supply of water which is furnished to the plant has more influence upon the amount of product than the fertility of the soil itself. A given field which will in one season produce a maximum crop will with practically the same amounts of plant food available in the soil in the very next season give a minimum yield. It is therefore evident that, without taking into consideration all the conditions above mentioned, no safe prognostication of yield can be based upon chemical data alone.

The principles of chemical analysis of a soil have been firmly established and especially in this country chiefly through the researches of Hilgard and Peter. While the methods of examination may vary in unimportant particulars, the general principles of procedure have remained the same for many decades. It is not believed that there can be any very important amendment of a useful nature made to the methods already in use.

The digestion of a soil of a given degree of fineness for a given length of time in hydrochloric acid of such a density as to be practically preserved at a given point of saturation throughout the whole course of solution leaves little to be desired in the way of scientific accuracy in securing the soluble constituents of a soil. On the other hand, the processes of bulk analysis are based upon the well-known principles of examination of minerals which have been so well established as to have suffered little change during the past few decades, nor is it likely that they will suffer any great change in the future.

We must look, therefore, for progress in the line of soil analysis in some other direction than in that which has been so thoroughly investigated in the past.

Among the prominent features of

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recent investigation may be mentioned two which are of prime importance. In the first place, attention is invited to the attempts to imitate in the chemical laboratory more nearly the solvent action of bio-chemical activity upon the plant foods present in the soil.

Every chemist has been struck with the fact that the achievements of bio-chemical activity are far more wonderful in their nature than the most brilliant achievements of the chemical laboratory. We find passing into solution in the juices which circulate through plants, substances which are obtained only with the greatest difficulty and at the highest temperatures in the laboratory. We find everywhere in the vegetable world striking instances of metabolism which any chemist, even the most distinguished, would be glad to imitate. We find silicates of the most refractory nature dissolved and in this state passing to form new combinations in various parts of the plant, especially in the bark and the leaves. We find in the same juices the alkalies which only a short time before were united in the most stable chemical compounds in the mineral fragments of the earth's crust. We find compounds of mineral acids broken up, the mineral acids driven out by organic acids which ordinarily would not affect them at all and the bases with which they were combined passing in organic forms into the vegetable organism.

Evidently, therefore, in attempting to imitate in the laboratory these complicated chemical phenomena we should not lose sight of the fact that it is not possible for us to measure by our ordinary methods the power of vegetable metabolism. Nevertheless we are justified in assuming that as a rule boiling concentrated hydrochloric acid will attack mineral fragments in a way different from the organic acids which are brought in contact with them by the rootlets of the plants. Acting on this idea, it has been suggested, especially by Dyer, to substitute organic acids or their salts for mineral acids in determining the available quantities of potash and phosphoric acid in soil samples. With this idea in view the chemists belonging to the Association of Official Agricultural Chemists have been during the past year engaged in co-operative work, with a view to testing the merits of these methods of determining solubility.

It is evident, however, that no method of arbitrarily determining the solubility of plant food in soils can prove of actual value unless it be tested against the actual capabilities of plants acting upon soil of the same description. It is with this end in view that the Department of Agriculture organized a system of soil analysis in which

the chemical results obtained in the laboratory are checked against the actual results obtained by experimental growth in pots. These experiments have now been under way for two years, chiefly, however, with the idea of testing the proper processes to be employed. This having been, with a certain degree of success, accomplished, the work is now considerably extended. A vegetation house has been built capable of accommodating 200 pots. These pots are kept on trucks running on rails. During the day they are run out into the open air and sunshine; during the night and in time of storms they are kept in the vegetation house, which is covered with glass. The soil which is contained in each of the pots is subjected to chemical examination in various ways and with various solvents. In this way it is believed that the actual available plant food which a soil contains, as shown by the character of the crop grown, will be by some of the methods employed indicated with a considerable accuracy by the chemical analysis.

Another most important step forward in the examination of soils consists in the methods which are now employed for determining the number and vitality of the nitrifying organisms which they contain. As is well known, the nitrogen which plants use as food can only be assimilated after it has been oxidized by passing through a vegetable organism of a lower nature. The process of changing organic nitrogen, which plants cannot assimilate, into nitric acid, which is a food suited to their needs, is called nitrification.

The process of nitrification consists of three distinct steps. In the first place, organic nitrogen is changed into ammonia. This change is produced by a number of organisms existing in the soil, the most active of which is the bacillus mycoides. The ammonia thus formed is next converted into nitrous acid by the action of a genus of organisms—nitrosomonas. The nitrous acid produced as above described is oxidized to nitric acid by another organism, the nitrobacter. But it is not our purpose here to discuss the processes of nitrification, but rather the methods which are to be employed in examining soils for these organisms. It will not be long before a chemical analysis of a soil will not be considered to be complete until the sample has been examined for the number and vitality of the nitrifying organisms which it contains. In order to make such an examination of practical value, the samples of soil must all be taken under such precautions as to exclude any contamination, and the cultures for developing the micro-organisms must all be conducted under the same conditions. In order to secure this uniformity, the Department of Agriculture has developed a method of taking the samples in sterilized tubes, under precautions which render contamination impossible, if the directions are carefully followed. The samples of soil thus obtained are used for seeding culture solutions, and the number and vitality of the nitrifying organisms in each sample can be determined by noting the time at which nitrification begins in each of the solutions, and by the seeding of sub-cultures from the original cultures employed. This work is now going on in the laboratory on samples of typical soils and subsoils taken at the agricultural experiment stations of different States, and representing the same samples that are employed in the pot cultures and for chemical analysis. By proceeding in this way, it is seen that a uniform method of chemical and bacterial examinations of the soil is secured, and the data of these examinations are checked directly against the products of vegetation secured in the experimental pots.

Further progress has already been recently made, especially in this country, in the physical analyses of soils, chiefly through the researches of Whitney and King. The separation of a sample of soil into silt particles of different degrees of fineness will give data of great value in respect of the capabilities of a soil for holding moisture and delivering it to the roots of growing plants. All the physical data obtained from the examination are of value in the final judgment, and should be considered in connection with the chemical and bacterial data obtained as above described.—*Scientific American*.

The Stock Interest.

THOROUGHBRED STOCK SALES.

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

SEPTEMBER 6—Walter Latimer, Garnett, Kas., Poland-China swine.
SEPTEMBER 18—Martin Melsenheimer, Hiawatha, Kas., Poland-China swine.
OCTOBER 4—Winterscheidt Bros., Horton, Kas., Poland-China swine.
OCTOBER 9—Geo. W. Null, Odessa, Mo., Poland-China swine.
OCTOBER 10—J. R. Killough & Sons, Richmond, Kas., Poland-China swine.
OCTOBER 22—F. M. Lall, Marshall, Mo., Poland-China swine.
OCTOBER 23—C. G. Sparks, Mt. Leonard, Mo., and G. L. Davis, Elmwood, Mo., Poland-China swine.
OCTOBER 29—Chas. Cannon, Harrisonville, Mo., Poland-China swine.
OCTOBER 30—L. N. Kennedy, Nevada, Mo., Poland-China swine.

AN ELK COUNTY STOCK FARM.

EDITOR KANSAS FARMER:—As the columns of the FARMER are ever open to the voice of the people, and knowing that its army of readers includes many living in other States who are always interested in Kansas affairs, I would like to tell them something of an ideal Elk county stock farm, and illustrating what Kansas, backed by providence, pluck and perseverance, will do for those who worship at her shrine.

Elk county is in the second tier of counties from the south line of the State and 138 miles southwest of Topeka. It has three railroads within its borders, and plenty of wood, water and native coal. Howard, a little city of about 1,200 people, is the county seat, and is on the Howard & Emporia branch of the Santa Fe railroad. That our farmers are an intelligent class is proven by the fact that in so many homes are found the KANSAS FARMER. The county is well adapted to the purpose of farming and stock-raising and these are our principal industries. But it was not so much of the county in general that I would speak as of one farm in particular, because this farm and its stock is destined to become famous, and in the near future the

HANNA STOCK FARM.

OF ELK COUNTY, Kansas, will be as familiar to breeders of fine stock as some of the older stock farms of the Eastern States.

This farm consists of 1,760 acres of fine valley land, joining the town of Howard on the north and extending for three miles up the Pawpaw valley, Pawpaw creek winding through the farm the entire distance. Your correspondent had the pleasure recently of riding over the entire farm and is of the opinion that a better-kept farm is hard to find. Of the land in cultivation, we found 400 acres of corn, all of which is in fine condition. The greater part of the corn was listed in and stood the early dry spell without serious effect. There is also 100 acres in sorghum, 100 acres in wheat and oats, 200 acres of alfalfa and several acres in orchards. Along the creek is about 120 acres in timber. The remainder of the land is in tame and native grass pastures. One hundred acres of alfalfa have been seeded this season and it is the intention of the proprietor to put out 100 acres each year until the farm will have about 600 acres in that great farmer's friend—alfalfa. The ground is put in the best possible condition for receiving the seed. The work on the farm gives employment to from ten to twenty hands the year around, who are under charge of J. A. Oliver and Charles Forsythe, foremen. There are twenty miles of fence enclosing thirty separate fields and pastures. But the glory of the farm, and that which will give to it its future greatness, is the fine stock to be found on the immense blue grass pastures. Here we find that which would delight the eye of the lover of fine cattle—200 head of thoroughbred Short-horn cattle of the best Bates and Cruickshank strains, many of them purchased from such noted herds as that of Col. W. A. Harris, of Linwood, Kas., F. Bellows, of Maryville, Mo., J. N. Potts & Son, of Jacksonville, Ill., and Elbert & Falls, of Albia, Iowa. Among the noted females of most striking individuality we note Spira, by imported Royal Pirate, dam imported Stephenotus, and Sempstress of Oak Lawn and her two calves, all lineal descendants of Amos Cruickshank's celebrated Secret tribe. Some Cruickshank, Lavender and a num-

ber of pure Bates-bred females of Col. Harris' breeding from such noted families as the Wild Eyes, Kirklevington, Waterloo, Duchess, and Rose of Sharon are such as to especially attract the attention of the visitor. At the head of this splendid herd is found two massive bulls—pure Cruickshank—of Col. Harris' breeding, sired by Golden Knight and imported Spartan Hero. Thus it does not need a prophet to foretell what the offspring of such noted strains will be, nor a very great stretch of imagination to predict the future reputation of the Hanna stock farm. Every year the herd has been carefully culled and only those of the purest types have been kept for breeding purposes, until to-day the herd presents the appearance of perfection in every detail, and from this herd will go out over Kansas and other States a class of thoroughbred cattle as will do honor to the State and the men who have faith in the future of Kansas and show their faith by their works.

Nor have Hanna & Co. confined their efforts to cattle alone, for we were shown a number of registered Percheron mares by the great son of Brilliant, Bendigo. Then there was a fine herd of high-grade Percheron mares and colts, some stallion colts, 1 to 3 years old, by Bendigo, and some standard-bred trotting mares and colts of the most fashionable racing strains. All of these horses are perfect of their kind and are noble animals. The stallions in use are Vigoreux, a splendid imported Percheron of grand breeding qualities; Phallas and Highland Boy representing the Dictator and Wilkes branches of the Hambletonian family. It is a grand sight to see these herds of fine cattle and horses as they wander over the big blue grass pastures in which are found several lakes and ponds of water. The farm is so arranged that pasture joins pasture and field joins field in convenient form.

Of course the idea of hogs, and here we find some 500 head of this stock running on alfalfa, growing and thriving without grain of any kind. One hundred brood sows are kept and every convenience is found for their care and comfort. About 700 head of hogs go to market from this farm annually. We noticed one field of alfalfa on which were feeding about 100 head of fine Poland-China hogs—great, sleek, fat fellows, and in another were a number of large sows and about 200 head of pigs following them—literally a moving mass of blackness they appeared at a distance. The alfalfa fields are so arranged in connection with the creek that the hogs have free access to water and shade, and come and go at will.

Back of all this vast business stands S. C. Hanna, of Howard, the moving and guiding genius, who, thirteen years ago, with small capital in cash, but with a wealth of pluck and indomitable perseverance and an immense stock of faith in Kansas, began laying the foundation for the Hanna stock farm. With him is associated George Hanna, of Bloomington, Ill., an experienced stockman of staying qualities. These men have steadily adhered to the one purpose of building up the stock industry of Elk county, and in the near future will distribute a class of thoroughbred cattle and horses unsurpassed in the United States in purity of blood and thoroughness of breeding. Lovers of such stock will be highly pleased with a visit to the Hanna stock farm, of Elk county, Kansas.

A. S. KOONCE.

The National Berkshire Record.

We are in receipt of Volume II. of the "National Berkshire Record," which is now ready for delivery to breeders. This volume is a book of 285 pages, an increase of sixty-three pages over volume I. Berkshire breeders will appreciate this "Record" from the fact that it shows a pedigree of four generations. Volume II. by mail \$2.65, or both volumes for \$4.

The Secretary, E. K. Morris, Indianapolis, Ind., gives the following facts and figures regarding the National Berkshire Record Association:

"The National was organized March 1, 1893, at Piqua, Ohio, with eight

stockholders from two States—Indiana and Ohio. The first annual meeting was held at Indianapolis, Ind., February 14, 1894. The association then had fifty-three stockholders, representing eleven States. The second annual meeting was held at Bloomington, Ill., February 13, 1895. The association then had sixty-three stockholders, representing thirteen States. On the date this circular is issued the association has seventy stockholders, representing seventeen States. Volume I. was issued in May, 1894, having 222 pages, and now volume II. is ready for the breeders, with 285 pages, an increase of sixty-three pages. The above facts indicate what the National has been doing and gives the breeders a gentle hint that it is the leading Berkshire record. We are numbering pedigrees for volume III. Send in your pedigrees and orders for the volumes. If you are wanting any information on recording, pedigrees, Berkshires or Berkshire breeders, call on the National."

List of Kansas Fairs.

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 to the public by Secretary F. D. Coburn:

Allen County Agricultural Society, C. L. Whitaker, Secretary, Iola, September 11-13.
Allen County Fair and Moran Driving Park Association, H. P. Smith, Moran, August 20-23.
Anderson County Fair Association, M. L. White, Garnett, September 3-6.
Brown County Exposition Association, C. H. Lawrence, Hiawatha, September 10-13.
Chase County Agricultural Association, J. P. Kuhl, Cottonwood Falls, September 10-13.
Clay County Fair Association, J. J. Marty, Clay Center, (no date set).
Coffey County Fair Association, J. E. Woodford, Burlington, September 9-13.
Cowley County Fair and Driving Park Association, A. C. Bangs, Winfield, September 24-27.
Crawford County Agricultural Society, John Viets, Girard, August 27-30.
Finney County Agricultural Society, D. A. Mims, Garden City, September 25-28.
Franklin County Agricultural Society, C. H. Ridgeway, Ottawa, September 17-20.
Franklin County District Fair Association, J. L. McComb, Ottawa, September 24-27.
Jefferson County Agricultural and Mechanical Association, George A. Patterson, Oskaloosa, October 11-13.
Johnson County Co-operative Fair Association, C. M. Dickson, Edgerton, September 10-13.
Johnson County Fair Association, W. T. Pugh, Olathe, August 27-31.
Linn County Fair Association, Ed. R. Smith, Mound City, October 1-4.
Marion County Agricultural Society, Manly I. Hill, Peabody, September 25-27.
Miami County Agricultural and Mechanical Association, Geo. F. Leavitt, Paola, September 24-27.
Montgomery County Agricultural Society, D. W. Kingsley, Independence, September 17-20.
Morris County Exposition Company, E. J. Dill, Council Grove, September 24-27.
Nemaha Fair Association, John Stowell, Seneca, September 3-6.
Neosho County Agricultural Society, H. Lodge, Erie, September 3-6.
Neosho County—The Chanute Agricultural, Fair, Park and Driving Association, R. C. Rawlings, Chanute, August 13-16.
Ness County Fair Association, Sam G. Sheaffer, Ness City, October 10-12.
Osage County Fair Association, E. G. Pipp, Burlingame, (no date set).
Osborne County Fair Association, M. E. Smith, Osborne, September 24-27.
Riley County Agricultural Society, H. A. Ames, Riley, August 10-13.
Rooks County Fair Association, I. N. Pepper, Stockton, October 3-5.
Saline County Agricultural and Horticultural Association, Samuel Carlin, Salina, (no date set).
Sedgewick County—Kansas State Fair, W. R. Hawey, Secretary, Wichita, October 1-5.
Wilson County Agricultural Society, C. R. Cantrall, Fredonia, September 10-13.

To make your business pay, good health is a prime factor. To secure good health, the blood should be kept pure and vigorous by the use of Ayer's Sarsaparilla. When the vital fluid is impure and sluggish, there can be neither health, strength, nor ambition.

The Trust After No-To-Bac.

Chicago Special.—Reported here to-day that a large sum of money had been offered for the famous tobacco habit cure called No-To-Bac, by a syndicate who want to take it off the market. Inquiry at the general offices revealed the fact that No-To-Bac was not for sale to the trust at any price. No-To-Bac's success is marvelous. Almost every Druggist in America sells No-To-Bac under guarantee to cure tobacco habit or refund money.

"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

Irrigation.

THE GOODLAND MEETING.

The State irrigation plant, at Goodland, Sherman county, was officially opened to the inspection of the public, by order of the Irrigation Board, on Tuesday, July 9. The event was made the occasion for an irrigation meeting, which was largely attended. The following reports of the addresses delivered will give an idea of the scope and spirit of the discussion:

ADDRESS OF F. D. COBURN, SECRETARY STATE BOARD OF AGRICULTURE.

To come here, in the heart of the mythical desert of our school days, and witness the inauguration, under official auspices, of an experiment which, in the not distant future, must exert a wide-reaching influence toward making it reliably productive and available as homes for the homeless, is a memorable event in the life of any man. To come at such a time, as the invited guest of a people who, by their splendid courage, untiring energy and broad intelligence are transforming this region from an Indian and buffalo range into an abode for a high civilization, with such a company and beneath such genial skies, is a rare privilege; to be the servant of and a co-worker with such a people, in such an age, is indeed a great honor.

Here, under the direction of our deserving and capable Board of Irrigation is begun what can scarcely fail to be an instructive undertaking, in pumping water for agricultural purposes from an extreme depth. I expect to see it succeed, and am glad many such experiments are to be made at the State's expense; yet, as in all these undertakings, I am sure the larger and better measure of success must come from individual enterprise and individual effort. The State, however generous, however far-seeing, however enterprising, can at best do but little, and we must in the main work out our own salvation in our own way, and that we will do this triumphantly let no loyal citizen for a moment doubt.

Among the ways and means toward this end will be the bringing of water to the surface from what, so far as we know, is the only source of water in this region, necessarily all of it, either, but a considerable proportion. In this county of Sherman you have, of as fair land as the sun ever shone on, the making of 17,380 forty-acre farms, and with a fourth of this irrigated they would sustain easily a rural population of 90,000 to 100,000, exclusive of the people in your prosperous towns. It has been demonstrated that a man may have 640 acres of land and fail of a living, but no better demonstrated than that the man with ten properly cultivated, irrigated acres, fertilized with brains, is in position to defy Wall street, to pay his mortgage, buy his wife the well-earned silk dress, and give the children a college education.

Irrigation from these deep wells, however successful, will be but an adjunct to our agriculture and not a main dependence. We must learn to impound the rain waters, not alone in reservoirs above ground, the immediate prey of sun and wind, but by deep tillage. One of our foremost needs is more thorough farming; possibly a more liberal blending of mind with our muscle, soil and water, and thereby obtaining two bushels of corn or wheat from the same land from which we grew but one before. This can be done, and more, and the tendency in agriculture to-day is all in that direction. The greatest danger to this forward movement, as I see it, is that one or two years of abundant rains are likely to cause a loss of interest and faith in the necessity for irrigation work, which would be a most unfortunate mistake. Do not let a rainy season switch you off from a determination to insure yourselves against the vicissitudes of a dry one. Let us avoid the folly of the foolish virgins. The people in Sherman county can be congratulated upon being in the front rank of those who are determined to find the better way, and a splendid future awaits them and theirs. There never was a more favorable time for becoming a Kansan or for obtaining a foothold, a home and identity among a people and in a commonwealth of such high promise. I rejoice with you in your rapidly brightening prospects.

ADDRESS OF E. B. COWGILL, EDITOR OF KANSAS FARMER.

You have brought here, for some purpose, a lot of your eminent servants, who are arrayed now at my back upon this platform. Your Congressman-at-Large, Col. R. W. Blue—"Dick" Blue they call him in the eastern part of the State—has spoken and has told you that the sight of your pumping plants, your irrigated fields and gardens, your productions, has convinced him that you have found the way to prosperity and to the highest type of civilization. Secretary Coburn, the efficient head of our State Department of Agriculture,

has come, has seen and has been conquered. Senator True, of Wabaunsee county, a practical farmer as well as wise legislator, has seen and will go home and irrigate.

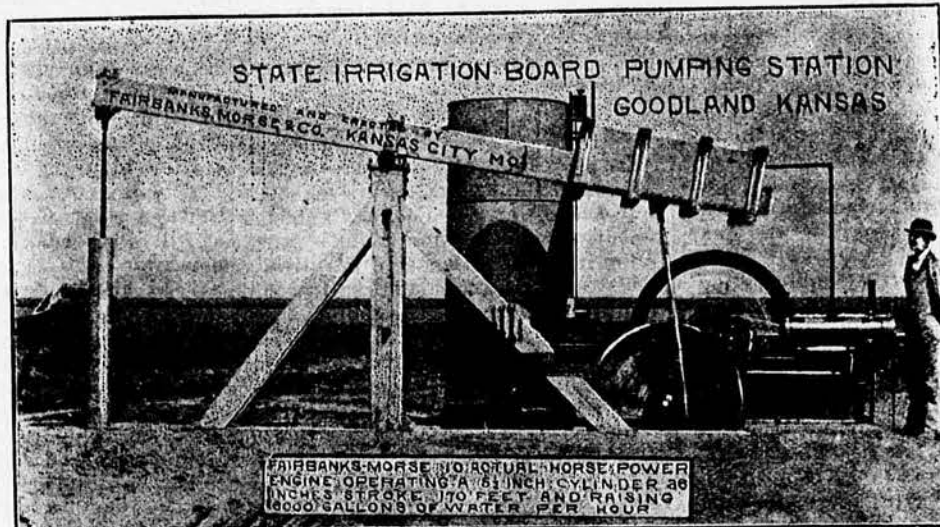
Do you know this reminds me of the Irishman who was showing his sailor friend through the cathedral at Cleveland, Ohio? The sailor was greatly surprised at the appointments. The statues surpassed anything he had ever seen. The grandly arched ceiling suggested the arch of heaven. The ever-burning candles, the holy water, the altar, overpowered the sailor, so that when he reached the door he said: "It

windmills. I suppose every one of these is pumping prosperity for its owner.

In coming to this county many deserted homesteads were passed. Ah, the pathos of the story of these humble ruins! With fond hopes of establishing a home, a farm home with all that it implies of blessedness, the brave man and his unflinching wife pushed out into the arid plain. The grass was perhaps as green as now, and the hope was that this would become a humid region. Bravely they plowed and planted; bravely they struggled and sacrificed; bravely they suffered and hoped; despair-

the people of Sherman county on their prosperous future because they have the common sense not to forget or misapply in the years of abundance the lessons of the droughty seasons which will surely recur.

In this connection I want to say something from my own point of view as a geologist, to encourage you who are fighting the battle, who are striving to harness the forces of nature to the car of our material prosperity and so aid in advancing our civilization. Goodland is not far from the center of a district which is probably the best—or nearly the best—supplied with



STATE IRRIGATION PUMPING PLANT—LOOKING EAST.

bates the devil, don't it Molke?" "That's the intention," said Mike.

Now, I don't know just why your fellow citizen, Mr. M. B. Tomblin, brought all these notables here to-day, but I suspect that if Secretary Coburn should say to Congressman Blue: "It beats the desert, don't it, Dick?" Mr. Blue would reply: "That's the intention."

But the question has been asked hundreds of times in eastern Kansas: "Can people make a living in western Kansas, or must they get out?" The State Irrigation Board has tried to help answer it and we are here to-day to witness the beginning of there says, officially: "There is an abundant supply of water at considerable depth." But you people of Goodland have not waited for the official answer. You have asserted that this water can be made available and have asked Messrs. Frost, Sutton and Tomblin to swear to your statement. You have done more. At your city waterworks you have pumped water to the flooding of the streets. I have counted the strokes of the pumps and computed their discharge and find it to be at the rate of 360,000 gallons per day. You can irrigate considerable land with 360,000 gallons of water. This is all pumped from an area of less than four square rods.

Though it has rained all day your carriages have taken us to see some of the irrigation plants of this vicinity. We have seen a sixteen-foot windmill at Commis-

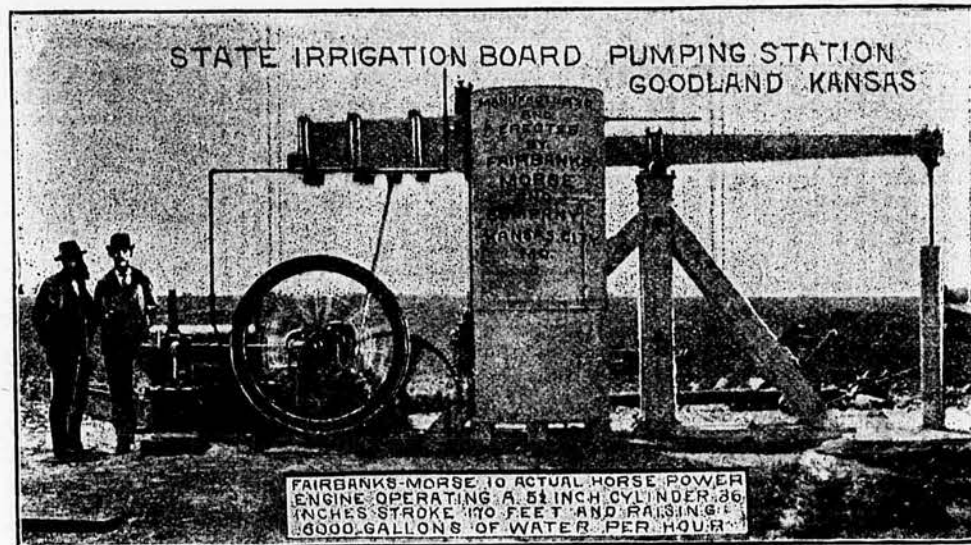
ingly they at last gave up, and went back, empty-handed, but to find the place they once occupied now filled by others and yet others as empty-handed as they watching for an opening. Opportunities for the empty-handed are now ten times as scarce as ten years ago.

But now and here, on the high plains of the highest county of Kansas, nearly 4,000 feet above tide water, you have found the wonderful underflow, you have harnessed the wind to your pumps and have demonstrated that an industrious family can make here a good living and more, and you will here develop the highest qualities of the race. You have attacked the problem of irrigation at its nucleus, you have entered into the contest with nature for her treasures of water and you now know that you will win, and that people in the westernmost limits of Kansas need not move away but may remain and prosper.

PROF. ROBERT HAY'S ADDRESS.

The coming of representatives from Missouri river towns, from the Arkansas valley and from central Kansas, to witness and discuss facts of the mid-plains region, near the Colorado line, indicates that there is something of importance to be observed, something of great value to be considered. The speeches in the afternoon session touched on matters that I intended to discuss, but shall now only seek to emphasize such of them as may incidentally come up, in reference to the demonstrated water supply of this region and the use to be made

underground water of any part of the great plains. The district may be roughly defined as that lying between the Smoky Hill river and the South Fork of the Republican, including Sherman county and parts of Cheyenne, Wallace and Thomas counties, as well as parts of Colorado. The underground water, called the sheet water or the underflow, of this region, is reached by hundreds of wells, which are not so deep as you go west but increase in depth northerly. The wells about Goodland, from 140 to 150 feet deep, may be considered as an average of the district. The wells of the farmers and stockmen usually go from five to fifteen feet into the water-bearing sands and gravels. They never go to the bottom of the water supply. They go till they have enough for their purposes. The wells in the city, belonging to the waterworks, to the Rock Island railway, and to a few individuals, go into the water thirty to forty feet and are 175 to 185 feet deep. The new State well, with a total depth of 166 feet, has a similar supply of water. From what I know of scores of private wells in this and neighboring counties, I am confident that their supply can be increased, if they need it, by going ten, twenty or thirty feet deeper. I am inclined to the opinion from what I know of the outcrop of the strata in the valleys and the kind of material passed through in boring the wells, that the water sheet to which the wells penetrate is not less than sixty feet thick and may be in parts eighty feet or more. There are parts



STATE IRRIGATION PUMPING PLANT—LOOKING WEST.

sioner Tomblin's place, and have seen growing as fine vegetables and as fine a prospect for potatoes as could be desired. I am told that after hiring all the work done, the net proceeds of these ten acres will this season pay for the \$500 irrigation plant to which these products are due. A net profit of \$50 per acre is good enough for any country. At the place of Hon. A. B. Montgomery there was seen an object-lesson of great value. The recent rains have brought all of the alfalfa up in good shape, but the portion which was irrigated a few days before the rains began is twice as large as the unirrigated. As far as the eye can reach over your beautiful plain I saw

of it, and the results of such use in the days to come.

The people of this region are the same who went through the dry time of 1890 and the succeeding good seasons of 1891 and 1892. And it is to be presumed that the probable abundant rainfall and crops of this year will not this time be allowed to diminish the preparations for or the ideas of irrigation that the dryness of 1893 and 1894 have started. It is the duty of those who have the lands to cultivate to devote a portion of the profits of a prosperous year, a year of abundant rainfall, to increasing the facilities for irrigation and increasing the area to be irrigated. I congratulate

of Kansas not so well off as this, for there the water sheet is only four to ten feet thick. There are parts even in the west where it is missing altogether.

Not to enter here on the great question of the original source of the underground water, which would take time and should be illustrated with maps and diagrams, I will just say that the great sheet is largely re-enforced by rainfall. It is the farmer's duty, by subsoling and by plowing furrows on pasture land and dams in useful places, to save as much as possible of every rainfall, and the good God has in this region not only made the underground storage reservoir, but has shown how the waters of

the great rain storms are carried down to it. Most of the smooth surface of the country is covered with whitish-yellow soil, known as the plains marl, which does not absorb much water but turns it off down the slopes. Under it the formations for a hundred feet or more are made of similar materials to those which hold the sheet water. In fact, they are water-holding strata. There is, however, never enough of water to fill them through all their thickness, but wherever they are exposed on the surface they readily absorb the rain that falls on them. The slope of these strata, or the dip, as we geologists call it, is about the same as the slope of the surface, south of east, and the dry, gravelly trenches which are the beginnings of the stream beds, known as the Sappa and Beavers, whose branches are numerous, cross the slope in a somewhat transverse direction, that is, to the north of east. And on the slopes of these arroyos, on both sides, the plains marl has been mostly eroded away and the coarser beds of the tertiary grit are exposed to the action of wind and frost, rain and sun. These slopes of the arroyos, therefore, are long strips which readily absorb the rain falling on them and pass the water downwards, so that it falls into the general dip of the strata and replenishes the underflow. These transverse arroyos, occurring in succession far into Colorado, guarantee an increase to the underflow of Sherman county after every considerable rainfall.

With these advantages for absorbing the water of the plentiful years and the underground reservoir of indefinite extent; with the improvements constantly being made in the mechanical appliances for raising and distributing water; with a people gritty as the water-bearing rocks and wise from past experiences, I look for this region to go on developing in material prosperity and increasing its enjoyment of the civilization of the age. There is abundance of water to irrigate five, ten or fifteen acres on all the four thousand quarter sections of the county, and the smallest of these areas, combined with a judicious use of the pasture land and other parts of the 160 acres, will insure to the working owner thereof more than a bare living in the driest years and sure advance in wealth through his active life and a share in home comforts and home luxuries for wife and children all the way along through the years. I see in the first decades of the twentieth century a county population exceeding 25,000 and a county seat of from 3,000 to 5,000 people, and 4,000 or 5,000 rural homes with carpets and musical instruments and the pleasantness of civilization, children well schooled and happy wives shaping the destinies of the coming age.

As with Sherman county, so with all western Kansas. So with Colorado, so with Nebraska. So with most of the plains, which will be the focus of power and wealth, as they are now the central part of our common country.

EXTRACT FROM ADDRESS OF HON. D. M. FROST, PRESIDENT OF THE STATE IRRIGATION BOARD.

If a single thought on the subject of irrigation to which I may give expression shall in any way prove of benefit to the people of Goodland and vicinity, then I shall feel amply repaid for my visit to Sherman county, notwithstanding the difficulties encountered in getting here. The evidences of irrigation as witnessed by us to-day, is, indeed, most gratifying, indicating, as it does, that the enterprising people of this section of the State are fully aroused to action and are at least willing to give this new method or system of conquering the western soil a fair and square trial.

You have made a noble beginning and it is to be hoped that you will continue in the noble work until every quarter-section of land on this broad plain has been made bountiful and productive. The rainfall or water supply is no small factor in so making it, whether it be from the clouds direct onto the lands, or from the soil underneath us, raised to the surface by pumps and artificially applied to the growing crops. The latter system is the one the people are about to enter upon. Our rainfall for the western portion of the State is about eighteen inches annually. For Sherman county, I presume it is a little more, possibly twenty inches a year. If so, you need but a few inches of water in addition to what you have to mature a crop each and every year. This you can get by and through these pumping plants. Twenty-four inches of water annually is ample to insure your crops, provided it is given you during the cropping season, and since you already get eighteen to twenty inches annually, the residue can be readily supplied for at least thirty or forty acres, and a yearly crop made certain to that extent, at least. The work of the State Commission is to aid the people in this development of water supply, more especially so on the higher lands, where these tests are being made, all of which thus far are proving themselves to be a grand success, and when our work shall have been completed—for the season, at least—we hope to make a report that will sustain the assertion.

The justification for the creation of an

Irrigation Commission for the State of Kansas is fully warranted when we call the people's attention to the vast interest the State possesses in this section—800,000 acres of unoccupied school lands, a portion of which at one time were possessed by individual owners, who, unable to meet their annual payments as they fell due, were obliged to let the lands go back to the State and thereby lose what they had paid into the State's treasury, which would run way up to \$100,000 or more. Out of it the individual owners have had no benefit, while the State or the people at large have. To again induce people to settle upon these lands, they must first have the assurance that they can not only maintain themselves on them, but make enough out of them besides to pay for the land.

But, my dear friends, I do not believe that all the virtue lies in irrigation alone, but that three-fourths of the great battle lies in cultivation, either with or without irrigation. I am a believer in deep plowing and shallow cultivation, even to the extent of subsoiling the ground to a depth of eighteen or twenty inches, thereby forming a reservoir underneath the surface for the storage of a water supply to be drawn from through the drier periods of the year. Such plowing and cultivation absorbs and collects the water that the good Lord allows to descend upon our lands, and thus saves to us the water that otherwise runs off into ravines and rivers, then to the Gulf of Mexico, nevermore to return. I strongly advocate and urge you people of Sherman county to adopt this system. If you do this and erect a small pumping station you can remain where you are; if not, it is a very grave question whether you can do so or not.

ADDRESS OF ERASMUS HAWORTH, PROFESSOR OF GEOLOGY, STATE UNIVERSITY.

A brief outline of the work we are doing in connection with the investigation of the underflow may be interesting. It is pretty well settled that the general sheet water, or underflow, of the State is situated beneath the loose tertiary deposits, so that mapping the underflow area is substantially the same as mapping the areal extent of the tertiary. The investigations already made have shown an increase in the estimates of the underflow area in certain portions of the State, and quite probably the examination of other areas will show modifications of the tertiary boundaries as heretofore understood.

The workers in this investigation are six in number—two in the southwest part of the State, Messrs. Adams and Patton; two in the northwest, Messrs. Crane and Griffiths, and two in the east-central, President Sharp, of McPherson college, and Mr. Logan. It is hoped that by the close of the season sufficient field work will have been accomplished to make it possible to prepare an accurate map of the State, showing all the areas under which there is a sufficient amount of water to be of service in irrigation.

In addition to this careful study is being made of the conditions bearing upon the question of artesian waters. It was stated that there are many reasons for hoping that over a considerable portion of the western half of the State artesian waters can be reached at a depth of from 250 to 500 feet, which will either rise above the surface or to within a short distance of the surface, from which depth it can easily be pumped.

JUDGE SUTTON'S ADDRESS.

After the geologists and Judge Frost had their innings, Judge W. B. Sutton, Secretary of the Irrigation Board, enlivened the audience in his characteristic way. His humor and occasional irony are impossible to reproduce.

He called attention briefly to the means of irrigation at hand, the suitability of the climate and soil of Sherman county, the topography of the land and the abundance of the water supply and the sole difficulty in the way, namely, the cost of lifting the water to the surface; the unsatisfactory result of attempting to build up a prosperous agricultural community depending entirely upon the rainfall; to the necessity of exercising the brain as well as the muscle; to the solution of the great agricultural problem on the plains, and urged the use of a portion of the proceeds of a bounteous year like this to fortify against the inevitable repetition of past experiences.

He gave them briefly an outline of the work laid out for the board by the law creating it, what it was expected to do and what it had done already and what it hoped still to accomplish, and closed by returning the thanks of the board to the good people of Sherman county for their generous hospitality and cordial reception.

If you would have an abundance of dark, glossy hair, if you would have a clean scalp, free from dandruff and irritating humors, or if your hair is faded and gray, and you would have its natural color restored, use Ayer's Hair Vigor. It is unquestionably the best dressing.

Get up a club for the FARMER.

WHY DON'T YOU PURCHASE A FAIRBANKS STANDARD SCALE?

With Our Patent Beam, Weighing in Both Pounds and Bushels, Without any Loose Weights. Finest on Earth.

WE ALSO MAKE

IRRIGATION SUPPLIES.



GET OUR CAT-A-LOG

Windmills, Steam Pumps, GASOLINE ENGINES, ETC.

FAIRBANKS BELLOIT, WIS.
ALL GOODS GUARANTEED.



FAIRBANKS-CHARTER ENGINE



FAIRBANKS-MORSE STEAM PUMPS.

GET OUR PRICES.

FAIRBANKS, MORSE & CO., 1310 Union Ave. Kansas City, Mo.

State Experimental Pumping Plant at Goodland.

Our readers will be much interested in the following detailed description of the first irrigation station put in under the law creating the State Irrigation Board.

This station is located in Sherman county, two miles due east of the city of Goodland, and on Saturday, June 15, the workings of the plant were thoroughly tested.

The well is of tubular type, bored to a depth of 166 feet through the plains marl, into the second water-bearing strata, and cased to a depth of 166 feet with six-inch standard wrought-iron pipe. The cylinder is of the Cook pattern, five and one-half inches inside diameter and sixty inches long, anchored at a depth of 158 feet from the surface of the ground. The pumping machinery, consisting of a ten actual horse-power Fairbanks-Morse engine, the pumping-jack, pump-rods, etc., were designed and manufactured especially for this particular work, by Fairbanks, Morse & Co., of Kansas City, Mo., under the personal supervision of Mr. Ira C. Hubbell, manager.

The photographs reproduced on preceding page show the compactness of the whole arrangement of the machinery, and no one will probably be surprised in being told that when all was ready for the test that everything moved off "just like old people." After steady, continuous pumping for several hours, at the rate of 6,000 gallons per hour, there was not the slightest indication of any decrease in the water supply, furnishing indisputable evidence that at least Sherman county has water "to sell," and it will therefore not be long before this county is ranked among the first in its general productions.

Great credit is due all members of the Irrigation Board for their deep personal interest in this work. Mr. M. B. Tomblin was untiring in his watchfulness of the work of the contractors on the Goodland station.

Fairbanks, Morse & Co. did the entire work, including the building of the reservoir and putting down of the well.

This plant will raise 6,000 gallons of water per hour and can be operated twenty-four hours per day, if desired, at an expense for fuel not exceeding the cost of one gallon of gasoline per hour, and when gasoline is purchased in bulk, as it can be, the expense for gasoline in remote sections will not materially exceed 15 cents per gallon, and of course less nearer to the Missouri river, where freights are less. Any further particulars that any of our readers may wish will cheerfully be supplied by Fairbanks, Morse & Co., Kansas City, Mo.

The accompanying photographs tell the story very plainly.

This station was formally opened by the State Irrigation Board on Tuesday, July 9, 1895.

Publishers' Paragraphs.

NO COMMON OFFER.—One of the best offers we ever heard of is that made by the Hapgood Plow Co., of Alton, Ill., which appears in another column of this paper. Their advertised prices are like these: Disc harrow, \$16; sulky, \$28; fourteen-inch S. B. plow, \$3.25. Agents are making big money selling these goods. Write for their complete price list.

Any one having skins of Galloway cattle, and desiring a fine wagon robe, would do well to send to the Lawrence Tannery, M. C. Byrd, Lawrence, Kas. He makes a specialty of tanning such hides for fancy robes. All other work in his line would also receive careful attention. His business and reputation at Lawrence has been fully established for many years—a reliable business and a reliable business man.

The McPherson college is under the management of the Dunkards and is thorough and solid in its work. All its departments are well managed and its students compare in proficiency with those of any college in the land. A prominent professor, Fannestock, the Superintendent, is the finest penman in the West and also a thorough business man. His students catch an inspiration from him that is remarkable. Many have graduated but none have made failures as clerks and book-keepers.

The motherly kindness of the Sisters of Charity is shown in southwestern Kansas, where All Hallows Academy, conducted by them at Wichita, has been for the past eight years a growing success. Young ladies with the best of credentials only are admitted, and there, under the personal attention of the good Sisters of Charity, B. V. M., they may live the year round, having all the comforts of a home and advantages of a school. All denominations are represented, and, strange as it may seem, the Protestants have ever been in the majority. Eighty-five dollars per session, with \$35 more for the summer months, is the entire necessary cost of the year. Many parents send little half orphans there, some of them no more than five years old, and if two or more go together the expense is even less. A happy, select home school. All Hallows deserves its success.

Free to Our Readers.

All of our subscribers who have roofs of any sort should send to Messrs. F. W. Bird & Son, East Walpole, Mass., for samples of their Neponset Red Rope Roofing Fabric. They come free and show a fabric that will keep out water, frost, wind and vermin, and costs very much less than shingles. We advise our readers to send for samples even if they do not want to buy immediately.

TOPEKA FOUNDRY

Can make your patterns or casting for you

IRRIGATION MACHINERY

—ADDRESS—

TOPEKA, KAS.

DRAIN TILE

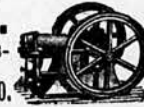
W. S. DICKEY CLAY MFG. CO.,
20th and Main Sts., Kansas City, Mo.

IRRIGATION.

POWER FROM GASOLINE? YES.

Its very Economical, Simple, Safe and Reliable, and WEBER GASOLINE ENGINES require no Engineer. His salary goes into your pocket.

For information add Weber Gas & Gasoline Engine Co., 459 Southwest Boulevard, Kansas City, Mo.



The Home Circle.

To Correspondents.

The matter for the HOME CIRCLE is selected Wednesday of the week before the paper is printed. Manuscript received after that almost invariably goes over to the next week, unless it is very short and very good. Correspondents will govern themselves accordingly.

WALLS OF CORN.

[This beautiful poem, written by the lamented Mrs. Ellen P. Allerton, of Brown county, Kansas, is published at this time because of its appropriateness to the present situation in this State. The poem was written a few years ago, and may be welcomed as an old friend by some of our readers.—EDITOR.]

Smiling and beautiful, heaven's dome
Bends softly over our prairie home,

But the wide, wide lands that stretched away,
Before my eyes in the days of May,

The rolling prairies' billowy swell,
Breezy upland and the timbered dell,

Stately mansion and hut forlorn,
All are hidden by walls of corn.

All wide the world is narrowed down
To walls of corn, now sere and brown.

What do they hold—these walls of corn,
Whose banners toss on the breeze of morn?

He who questions may soon be told,
A great State's wealth these walls enfold.

No sentinels guard these walls of corn,
Never is sounded the warders' horn.

Yet the pillars are hung with gleaming gold,
Left all unbarred, though thieves are bold.

Clothes and food for the toiling poor,
Wealth to heap at the rich man's door;

Meat for the healthy, and balm for him
Who moans and toses in chamber dim;

Shoes for the barefooted, pearls to twine
In the scented tresses of ladies fine;

Things of use for the lowly cot,
Where (bless the corn) want cometh not;

Luxuries rare for the mansion grand,
Gifts of a rich and fertile land;

All these things, and so many more
It would fill a book to name them o'er,

Are hid and held in these walls of corn,
Whose banners toss on the breeze of morn.

Where do they stand, these walls of corn,
Whose banners toss on the breeze of morn?

Open the atlas, conned by rule,
In the olden days of the district school.

Point to the rich and bounteous land,
That yields such fruit to the toiler's hand.

"Treeless desert," they called it then,
Haunted by beasts and forsook by men.

Little they knew what wealth untold,
Lay hid where the desolate prairies rolled.

Who would have dared, with brush or pen,
As this land is now, to paint it then?

And how would the wise ones have laughed in
Scorn,
Had prophet foretold these walls of corn,
Whose banners toss in the breeze of morn?

SEA DRAGON PILLOW.

The Covering Reproduces Effect of Sheen
of Water in Sunlight.

For piazza use, at a seaside cottage,
where sunshine and sea breeze abound,
nothing can exceed the appropriate
loveliness of "the sea dragon pillow."
It is made up in the usual size, 18
inches by 18 inches square. The cover-
ing is of sea-green satin, that pro-



BRIDAL AND LAUREL PILLOWS.

duces in effect the very sheen of the
water in sunlight.

The design upon the face of the
cushion is a sea dragon drawn in ex-
quisite curves and sweeps, and wrought
in silver and gold Japanese cord
couched down with white and yellow
silk thread. The embroidery sparkles
and glints from the green background.
A 5-inch double ruffle of the satin, over-
set with a 4-inch fall of fishnet
spangled in silver and gold, completes
the tout ensemble. This design will
recommend itself in cheaper stuffs,
green crepon or denim, at 15 cents a
yard. The dragon or a fish net and
little fishes afloat in water hues, may
be readily drawn upon the material
and worked in in Japanese gold and
silver cord and couched into place.

The laurel wreath design is made of

dark, rich green satin, knotted together
at the base by means of a brown velvet
bow-knot. The design is cut out and
applied upon a background of
changeable velvet, which serves as the
face of the pillow.

The pile of the velvet is the dainty
gray tint of freshly burned ashes,
while beneath it gleams a cherry red
color, suggestive of fire flame.

The entire design is edged with tiny
gold cord, couched into place with yellow
silk thread; a heavy gold cord
edges the cushion, with distingue
twists in the cord at the corners. It is
backed with somber brown satin.

This design would be very lovely
made up in linen duck, with the wreath
embroidered in green, or it might still
be applied in satin, as the satin is so
like the gloss of the actual laurel leaf.
In applique work the design should al-
ways be backed by stout muslin, cut
out carefully, and thoroughly basted
upon the background about the edges,
then hemmed down firmly with self-
colored sewing silk, and lastly overset
with the cord, couched at regular in-
tervals, smoothly and evenly for hand-
some effect.

A blue denim pillow with this design
wrought in white embroidery cotton



DRAGON DESIGN.

and finished with a heavy white cord,
makes a durable and attractive pillow
covering.

The siesta pillow, to be used in the
hammock and indoors, for the invigor-
ating "forty winks" that restores the
pink to the cheek and comfort to the
nerves, should have a cover made of
material that will readily launder.

The cover should be left open at one
side and furnished with tiny button-
holes and little flat lace buttons, that
will fasten beneath a blind hem, under
fluffy voluminous ruffles that will
wholly conceal the opening.

Gay bandanna, with yellow, pink and
delicate blue predominating in the
bright plaid, will make serviceable and
inexpensive covers. White dimity and
flowered chintz will prove even fresher
after a visit to the washtubs than at
first.

The fourth, suitable for a wedding
gift, is of heavy white satin, the linked
hearts worked in silver. Lace and
satin frills encircle this charming pil-
low for a bride, and at one corner is
caught with a knot of white ribbons
and cluster of orange blossoms.—N. Y.
World.

Neglected Women Deserve Neglect.

It is her own fault if a woman is un-
loved and neglected. This is a harsh
statement to make, but is a fact. Mor-
tal man is a weakling who can no more
resist kindness than a rose can resist
the sun. It is weak, helpless woman's
duty to make herself attractive and
pretty in the very teeth of defeat, and
to make herself agreeable to every one
in the very face of discouragement.
Call it hypocrisy, tact, finesse, or by
any other term, but she must turn in
the edges, and make allies instead of
antagonists of the people about her.
Spotless neatness, becoming feminine
attire, truth, kindness, cheerfulness,
love, and the loyalty that restrains her
from speaking ill of her neighbors will
make any woman lovely, even though
she lacks beauty.

Poached Eggs with Cream Sauce.

One pint of water, one teaspoonful
of vinegar, one saltspoonful of salt, as
many eggs as are required. Put the
water, vinegar and salt into a very
clean frying pan, and when boiling
slip the eggs carefully into it, without
breaking the yolks. When set, remove
from the water with a skimmer and
drain thoroughly before placing on a
warm dish. Pour the water out of the
pan and put in a teaspoonful of flour
and a tablespoonful of butter smoothly
together, and add the cream; add a lit-
tle minced parsley, salt and a dash of
cayenne. Boil three minutes, pour
over the eggs, and serve at once.

Highest of all in Leavening Power.—Latest U. S. Gov't Report

Royal Baking Powder

ABSOLUTELY PURE

BICYCLING COSTUMES.

An Entertaining and Important Subject
Instructively Discussed.

The interesting discussion which is
going on in the newspapers as to the
most convenient and becoming style of
bicycle costume for adult female riders,
during the progress of the fad, illus-
trates a peculiar weakness of the sex,
or to put it more correctly, a pardon-
able vanity. Time was when there
would have been no discussion of this
kind. In the old days a girl or woman
found riding a bicycle, if bicycles had
been known in those days, whether in
a full or abbreviated skirt, would have
met with dire punishment at the hands
of the elders, while a short skirt would
have provoked as stern an outburst of
anger as did the display of limbs before
that redoubtable old Knickerbocker
governor of New Amsterdam. But the
world has progressed since those days
and the display of those members with
which, according to the poet, the devil
baiteth his hook, no longer occasions
surprise, unless it happens that they
are unshapely.

Hence the discussion of this problem
has, according to the Chicago Tribune,
taken exactly the shape which might
have been anticipated. It will be ob-
served that all the girls, married wom-
en and widows who have symmetrical
lower limbs are inclined to favor the
short skirt which will not obscure that
symmetry. On the other hand, all
those who have spindling or the Chip-
pendale style of continuations are firmly
set upon having the long skirts. Be-
tween these two classes there is still
another which is neutral as to sym-
metry. It is conscious that it has no
occasion for vanity and at the same
time it knows it is not a subject for
ridicule. This class is in profound
doubt about the skirt and how far it
should come down. Again it is notice-
able that the girls are more particular
about these aspects of the case than
the married or older women. The
former are actuated by the aforemen-
tioned vanity, which is entirely pardon-
able, which is condoned by every
poet from Shakespeare to Swinburne,
and which is hinted at even by saintly
George Herbert, while the latter are

which vie with the highest efforts of
nature, why should she not purchase
also the requisites of symmetry for the
motive power of the treadles and thus
enjoy all the pleasure of the most
favored class? It may be averred that
she is a flying figure of deceit, impos-
ing upon the public as she speeds along
the park or the boulevard, but that is a
matter between herself and her con-
science, and if the spectator is none the
wiser, as most certainly he will not be,
the conscience will find it difficult to
rise superior to innocent vanity.
Therefore there is no reason why the
entire world of female cyclists, young
and old, shapely and unshapely, lean
and fat, handsome and ugly, should
not adopt the abbreviated skirt and
have as good a time as the male pa-
trons of the "bike," who are grossly in-
different as to their looks. The com-
ing woman in her competition with
man will surrender many of her pre-
rogatives, but it may be assumed she
will never abandon her pride in her
natural or artificial charms, as the case
may be. She will never be content to
make as ridiculous an appearance as
most men do on the bicycle, and she
never should, for it is every woman's
duty to be as beautiful as nature or
money will allow, whether on or off
the flying wheel. In a word, let wom-
en dress as they please for this health
giving exercise.

Enclose a stamp to any agent of the
Nickel Plate Road for an elaborately il-
lustrated Art Souvenir, entitled "Summer
Outings." Address J. Y. Calahan, General
Agent, 111 Adams street, Chicago, Ill. 70

Union Pacific Route.

What you want is the through car ser-
vice 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 with-
out change, Denver to Chicago via Kansas
City.

ORGANS AND PIANOS

Moats-Brownell • Piano • Co.

1009 Walnut St., KANSAS CITY, MO.

WESTERN AGENTS FOR

FARRAND & VOTEY ORGANS,

The best organ manufactured, at a reasonable
price. Guaranteed for six years. Easy terms.

ALSO

Hallett & Davis, Schaffer and Stodart Pianos.

Write for catalogue and prices.



AN IDEAL BICYCLE COSTUME.

more disposed to regard comfort and
freedom of action of the limbs.

There is no good reason indeed why
the female riders should not wear the
abbreviated skirt, all classes of them.
The Chippendale class can easily
enough place themselves upon the same
footing with their more favored sisters
by the skillful use of padding. Sym-
metry of all sorts can now be procured
at the shops. If it be allowable for a
less favored sister to conceal the rav-
ages of time by the appliances of art
and to compensate for the cruel indif-
ference of nature by the skill of the
chemists and cunning artificers, if she
can go to the studios where female
beauty is compounded for sale and pur-
chase hair, eyebrows, complexion,
cheeks, neck, bust, arms and fingers,

FULL OF SNAP

Sparkle and vim.
Full of good health.
Full of everything good.

HIRES' Rootbeer

Every bottle of
this great effervescent
temperance beverage is a
sparkling, bubbling fountain
of health—a source of plea-
sure, the means of making
you feel better and do better.
You make it yourself right
at home. Get the genuine.

5 gallons cost but 25 cents.
THE CHAS. E. HIRES CO., Philadelphia.

The Young Folks.

SOMETHING GREAT.

The trial was ended—the vigil past;
All clad in his arms was the knight at last.
The goodliest knight in the whole wide land.
With a face that shone with a purpose grand
The king looked on him with gracious eyes,
And said: "He is meet for some high emprise;"
To himself he thought: "I will conquer fate,
I will surely die, or do something great."

So from the palace he rode away;
There was trouble and need in town that day;
A child had strayed from his mother's side
Into the woodland dark and wide.
"Help!" cried the mother, with sorrow wild.
"Help me, sir knight, to seek my child!
The hungry wolves in the forest roam;
Help me to bring my lost one home!"

He shook her hand from his bridle rein.
"Alas! poor mother, you ask in vain,
Some meager succor will do maybe,
Some squire, or varlet of low degree,
There are mighty wrongs in the world to right,
I keep my sword for a noble fight,
I am sad at heart for your baby's fate,
But I ride in haste to do something great."

One wintry night, when the sun had set,
A blind old man by the way he met;
"Now, good sir knight, for our lady's sake,
On a sightless wanderer pity take!
The winds blow cold, and the sun is down,
Lead me, I pray, till I reach the town."
"Nay," said the knight, "I cannot wait;
I ride in haste to do something great."

So on he rode in his armor bright,
His sword all keen for the longest fight.
"Laugh with us—laugh," cried the merry crowd.
"Oh! weep!" wailed others, with sorrow bowed.
"Help us!" the weak and weary prayed.
But for joy, nor grief, nor need he staid.
And the years rolled on, and his eyes grew dim,
And he died—and none made moan for him.

He missed the good that he might have done;
He missed the blessings he might have won;
Seeking some glorious task to find,
His eyes to all humbler work were blind.
He that is faithful in that which is least
Is bidden to sit at the heavenly feast.
Yet men and women lament their fate,
If they be not called to do something great.

—N. Y. Weekly.

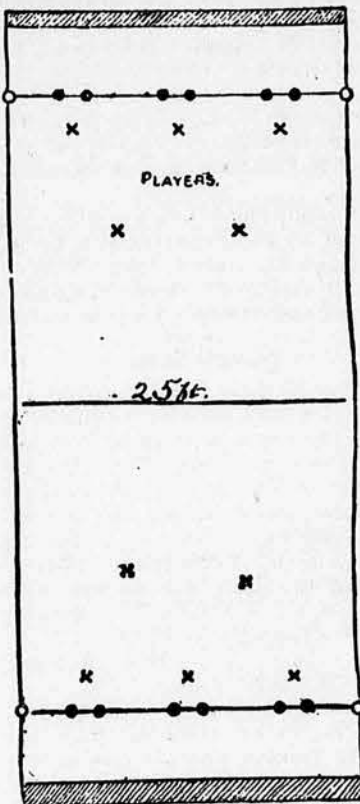
NEW ATHLETIC GAME.

It Is Called Battle Ball and Can Be Played Indoors or Out.

One of the newest of games, and one that is apparently destined to be very popular, is battle ball. Among its advantages is that it can be played in any season of the year, being equally suitable for indoors or out of doors.

At the same time it is more athletic than the great majority of indoor games, combining, as it does, various features of baseball, football, bowling, handball, tennis and cricket.

The game is especially adapted for gymnasium use, it having been in-



BATTLE BALL COURT.

vented by Dr. Sargent, of Harvard university, with that end in view. His chief desire was to invent a game which would be lively, and at the same time not in the slightest degree dangerous. He also wanted a game that could be played without long training or previous practice. The result of his experiments is battle ball.

The court upon which the game is played is somewhat similar to that used in tennis, as will be seen by the accompanying diagram. The length of the court is twice its width, the court being divided by a line in the middle, making two squares of twenty feet, while the court is fifty feet long by twenty-five feet wide. This sized court is the most desirable when there are

five players on a side, which is the usual number, although the game may be played by any number greater than three.

Lines should be marked on the ground or the floor as shown in the diagram. These lines are known as the center foul, foul end and goal lines. The goal lines are those which are marked by circles at each end. On them should be placed three pairs of Indian clubs of three pounds weight each, one pair in the center and the others three feet from the posts, the clubs of each pair being eighteen inches apart. Seven feet above the goal lines cords are stretched across from posts.

If there are five on a side, the three stationed in front of the clubs act as guards or goal-tenders, while the other two are forwards or goal-tenders. Should there be more than five players, the additional contestants will be goal-forwards.

The ball used in the game is a large rubber one, filled with air and covered with leather. It should be nine inches in diameter, and weigh about a pound.

The side which has the ball—this is decided by a toss of the coin—tries to throw it between the goals on the other side. If it succeeds in doing so ten points are scored in its favor; if the attempt to make a goal fails and a club is hit, five points are scored. If the ball merely passes the goal line under the cord, three points are made.

Penalties are also exacted for fouls. If the ball goes over the goal cords it counts one against the side that threw the ball, and if a thrower steps over the center-foul line, it counts two against his side.

The game consists of two ten-minute halves, with a rest of five minutes between the halves.

When the game is played out of doors, wands or sticks like cricket-wickets may be stuck into the ground. These should project three feet.

It is claimed for the field of battle-ball that it develops the muscles of the back, as well as those of the chest, and those of the left arm as well as those of right.

An argument in its favor is that girls as well as boys may play it, there being not the slightest element of roughness in the game.—Henry Jamison, in Golden Days.

An Appeal.

"Papa," said Jennie, climbing upon her father's knee, "don't you think that 'stead o' ten cents a week you could give me fifteen?"

"Well, I don't know, my dear," was the answer. "What do you want of the extra five cents?"

"I thought my dollie was old enough to have a 'lowance, and I want to give it to her."—Harper's Round Table.

Wished She'd Been Born Sooner.

Little Mary K— was obliged to stay at home from school on account of sickness. Her mother tried to amuse her by telling her stories about her own childhood, and succeeded so well that the little girl said: "Oh, mamma, I wish I had been born sooner, so that I might have played with you when you were little."

Tommy's Progress.

Mamma—You may open your school report, Tommy, and tell me how you have been doing this week.

Tommy—Oh, here is the highest mark, mamma, a 1.

Mamma—And what is that for, Tommy?

Tommy—Days absent, 1.—Harper's Round Table.

Dog Kept Tab on the Clock.

One of the best stories about the intelligence of dogs which has been told for some time was reported a few days ago by an officer of the Pennsylvania Railroad company. He said that one of the men in the passenger department had a dog that could tell the time of day. The owner of the dog had a fine clock in his office, and he got into the habit of making the dog tap with his paw at each stroke of the clock. After awhile the dog did so without being told, and as the clock gave a little cluck just before striking, the dog would get into position, prick up his ears and tap out the time. If the clock had struck one and a little while afterward his owner imitated the preliminary cluck of the clock the dog would give two taps with his paw and so on for any hour. He knew just how the hours ran and how many taps to give for each one.—N. Y. Tribune.

QUEER HOUSEHOLD PET.

He Is an Alligator Who Lives in a New York Flat.

A gentleman just returned from South America has brought with him to his New York flat a monster alligator. It seems funny, doesn't it, that a big, scaly creature like the fellow here pictured should find room in a New York flat? But such is the fact.

Of course, Mr. Alligator doesn't share the rooms of Mr. Alexander—that is the gentleman who brought the big reptile from the south—but the creature



A QUEER HOUSEHOLD PET.

is fed by the children of the household, and the ugly monster takes great pleasure in sleeping in his tank at the top of the house, for it must be known that the alligator is safely lodged in an iron tank whose top is heavily caged over with steel wires.

Just how long Mr. Alexander will be able to keep his monster pet the people in his neighborhood are trying to guess. If Mr. Alligator should break loose some fine night there would be plenty of excitement in that New York flat, you can be sure of that.

But up to the present moment both the alligator and Mr. Alexander's family of boys and girls are doing nicely and all goes well. One thing is certain: when the clumsy pet of this home dies or is killed, there will be a fine, large piece of alligator skin to be made up into chair seats and slippers for all who are interested in the big animal on the roof.

Dog Transfers His Custom.

A Philadelphia dog used to be sent by his master every morning with a penny in his mouth to purchase a bun for breakfast. He had continued to do this for some time, when the baker, having changed his helper, the dog was unheeded. The dog thereupon ran to the baker, laid the penny at his feet and barked loudly at the assistant. The baker explained matters, but the assistant, a surly fellow, took it in bad part, and next time the dog appeared he selected a very hot bun and gave it to him. The animal, as usual, seized the bun, but finding it too hot to hold, he dropped it. He tried it again; again it burned him. At length, as if guessing the trick, he caught up the penny and ran off to another baker's shop in the neighborhood. No amount of coaxing could ever get him to return.

He Had Dined Before Dinner.

It is said that the table manners of Napoleon Bonaparte were very bad, and that he was so fast an eater that he was invariably through with his dinner before those who dined with him had got half through. In fact, those who had the honor of dining with the emperor were wont to remain after his majesty's departure.

Upon one occasion Eugene de Beauharnais, the stepson of Napoleon, rose



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WM. TAYLOR,

Agent for Columbia and Hartford Bicycles
TOPEKA, - KANSAS.

from the table immediately after the emperor.

"But—you haven't had time to finish your dinner," said Napoleon.

"Pardon me, sire," said the prince. "I dined before I came."—Harper's Young People.

Good Friends.

The story is told in an English magazine of a rat which has become blind, but two of his family are his guides. He goes about with a piece of stick in his mouth, and the younger rats, each with an end of the stick in its mouth, steer the blind rat about the region where he lives. People have become so interested in them that they are never disturbed.

The Thing to Have Done.

"My doll is very sick," said Polly, mournfully.

"Yes," said Jennie; "she looks very waxy. You ought to have her wax-nated."—Harper's Young People.

"The Farmer's Ready Reference, or Hand-Book of Diseases of Horses and Cattle." Descriptive circular free. Address S. C. Orr, V. S., Manhattan, Kas.

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Electros must have metal base.
Objectionable advertisements or orders from unreliable advertisers, when such is known to be the case, will not be accepted at any price.

To insure prompt publication of an advertisement, send cash with the order; however, monthly or quarterly payments may be arranged by parties who are well known to the publishers, or when acceptable references are given.

All advertising intended for the current week should reach this office not later than Monday.
Every advertiser will receive a copy of the paper free during the publication of the advertisement.

Address all orders—
KANSAS FARMER CO., Topeka, Kas.

If you want KANSAS FARMER and Semi-Weekly Capital, send us \$1.50. Or, KANSAS FARMER and Topeka Advocate, send \$1.50.

One dollar and sixty-five cents will pay for the KANSAS FARMER and the twice-a-week New York World. Everybody should read.

The summer meeting of the Nebraska State Horticultural Society will be held at Wymore, on July 23, 24 and 25. An interesting program will be presented.

We want our readers to secure for us thousands of new subscribers for the for such work. If you will get up a list, write this office for liberal terms.

In his circular of last Saturday, Henry Clews says: "As for doubts about the syndicate and the Treasury outlook, they are without foundation. No alarm need be caused if the Treasury is compelled to borrow a few more millions."

The committee on Industrial Co-operation has called a meeting of the Shawnee County Alliance, to be held on July 20, at K. P. hall, corner Sixth and Quincy streets, Topeka, at 10 o'clock a. m. and at 2 o'clock p. m., and requests all co-operators to be present.

It becomes necessary to occasionally state that every communication to a paper should be signed by the writer thereof as a guaranty of good faith. Some papers insist on publishing the name of the writer with his letter. The KANSAS FARMER does not go so far as this, but the editor requests that even inquirers for information extend to him the courtesy of letting him know who they are.

The recent course of the wheat market has been a surprise even to those who wanted prices to go lower. The total decline from the highest price during the flurry to the lowest price of the week was about 20 cents per bushel. "Bear" speculators have profited by the reports of unusually fine prospects for spring wheat and by the fact that the unknown stores of wheat in Russia have contributed largely to the markets of the world. Later in the week there was a rally of prices, a play to enable the "talent" to secure more "lambs" to fleece. Just at present, predictions as to the immediate future of the wheat market must be only conjecture.

Keeping Sweet Potatoes--Web-Worms.

EDITOR KANSAS FARMER:—I would like to hear from some of your subscribers as to their method of keeping sweet potatoes.

The alfalfa sown this spring has been destroyed by the web-worm. Do they kill the roots, and is there any preventive.

O. B. LIPPINCOTT.

Woodward, Okla.

PEOULIARITIES OF IRRIGATION ON THE PLAINS.

The Kansas Irrigation Board undoubtedly thinks that the irrigation in which the people of this State are most interested consists in obtaining a supply of water and applying it to the land for the benefit of crops. Indeed, the law which authorizes the existence of this board makes no provision for the development of any new social system, any change of our rights to acquire and hold land. It merely directs the board to find out where and in what quantity water can be found and how and at what expense it may be obtained and applied. A peculiarity of this board, as now constituted, is, that it is confining its efforts, in official capacity, strictly to the performance of its duties as laid down in the law.

Kansas farmers are essentially practical in their ideas of farming and they are unable to see why the benefits to be derived from irrigation should be postponed pending the introduction of societal reforms which they have scarcely considered, and as to the expediency of which years of discussion must precede their adoption. Some of the leading ideas of these reformers—whose utterances sometimes convey the impression that they desire the advent of irrigation, as applied to land, postponed until after the adoption of the social reforms which they think will fit well therewith—are concisely expressed in a prospectus of a proposed colony in the wilds of Idaho:

It is proposed to make a colony that will illustrate the highest possibilities of home-making on irrigated land, and stand as a practical demonstration of the industrial and social life which may be developed by the environment of arid America. The very name it will bear is a name sacred to liberty in the annals of Anglo-Saxon men. This Plymouth colony, like the Plymouth of the past, will stand for the highest ideal of freedom and independence. The new community will bear the same relation to industrial independence as did the old to the development of religious independence.

The farm unit is an essential feature of the industrial plan. The farm advised by the projectors of Plymouth is twenty acres, and not more than forty acres will be sold to any one individual. The small farm unit demands the faithful application of the principle of intensive cultivation, and yields in return surprising results, both in the matter of the quality and the quantity of the crop.

The farm village has been successfully used in some portions of Europe for centuries. It was also adopted to some extent in western Massachusetts by the early settlers. Brigham Young realized its advantages, and made it the foundation of his social system in planning the colonies of Utah. A farm village site will be laid out surrounding an extensive park, at the most eligible point in the Plymouth colony tract, and the village will bear the name of "Home Acres." The name exactly expresses the idea. While each colonist will have his twenty acres of irrigated land in the surrounding district known as "Plymouth Farms," he will also own one acre for home purposes in the village. And here he will live with his neighbors, his house fronting a broad street lined with trees, and his family enjoying the advantage of being close to the school, church, postoffice, store and all other town institutions.

This prospectus describes at considerable length plans for co-operation in business and for the government of the colony.

It is not for the purpose of criticising the plan or the methods of the promoters of this colony that we have called attention to some of its proposed features, but to show what is uppermost in the minds of some of the men who have done much to call attention to the importance of irrigation.

But the great plains country east of the Rocky mountains presents areas needing irrigation and possessing natural facilities for irrigation to an extent greater than is found in all the region from the eastern base of the Rocky mountains to the Pacific. The conditions in this mighty plains region are not such as to call for the services of great water companies, nor do they suggest advantages of co-operation more marked than pertain to ordinary farming operations. The great ditch company finds little use for itself. The wealth of water is by nature reserved under a very large proportion of these plains, and, so far as experience has gone, is most economically obtained and applied by the plant of the individual farmer, thus tending to promote rather than counteract the general tendency of American farmers

to individualism rather than any form of socialism or even co-operation.

The Kansas Irrigation Board and the law creating it have wisely recognized these facts and have confined their efforts to the humble work of determining possibilities and methods in harmony with the situation, rather than wasting their time and the State's appropriation in attempts to introduce as an exotic the systems necessary and useful in the mountain States or in ushering in a modified social system.

For this they may be criticised by social reformers who have thought they saw in the intensive farming which goes with irrigation the occasion for the introduction of their cherished plans, and for whatever of personal aggrandizement their adoption might bring. It is distasteful also to the promoters of great canal schemes, with bond and coupon attachments, and fine "rake-offs" for the promoters. But the course of the board is the common-sense course which must commend itself to the common-sense farmers whose wisdom and toil must be much in evidence in the development of the plains of Kansas and other States which share the wealth of soil and ever-replenished stores of water of the great plains of North America.

A LUCKY ERROR.

It turns out that, all unintentionally, the present law as to traveling expenses of various "boards," which have in charge the management of several of the State institutions, can draw from the State Treasury for these traveling expenses no more money than they have actually paid out for such expenses. This includes railroad fare, when paid, i. e., when the officer had no free pass, Pullman car fare and meals. The State Board of Charities still draws 15 cents per mile for each mile traveled, even if the members have free passes, and it is a matter of dissatisfaction with some of the other boards that they are not likewise favored, and it is explained that it was the intention and was generally supposed that these other boards were to draw 8 cents per mile, but that by a cruel mistake, for which a certain State Senator was, inadvertently, responsible, these public servants were cut down to merely actual expenditures.

It is perhaps not well for the State to be parsimonious with its officers. Certainly compensation ought to be sufficient to secure competent service. But those who exercise the power to tax should remember that the people they serve have to earn all the money drawn from them, and there should be no jobbery in disposing of it.

But the law which authorizes such a premium on traveling is detrimental to the public service. In Kansas the actual railroad fare is never more than 3 cents per mile, and hotel expenses, including sleeping car fares, can scarcely exceed \$5, and will generally be less than \$3, per day. If, in attending to the State's business, an officer make a trip of 200 miles and spend two days, his account, under the law allowing 15 cents per mile, will be something like this:

Per diem, two days.....	\$ 6.00
Mileage, 200 miles.....	30.00
	—\$36.00

He would be considered as not "onto his job," however, if he did not manage to charge at least a day for going, a day at the institution, and a day for returning, and if he did not manage to travel over 200 miles. It is generally impossible (?) for members of these boards to get from their homes to the institutions over which they preside without going around by way of Topeka, and they not infrequently find it out of the question to miss Kansas City. The account as rendered and of actual service and expenses would be:

AS CHARGED.	
Per diem, three days.....	\$ 9.00
Mileage, 400 miles.....	60.00
	—\$69.00

ACTUAL.	
Per diem, two days.....	\$6.00
Mileage (free pass).....	0.00
Meals, etc.....	6.00
	—\$12.00

Profit (spoils of office)..... \$57.00
With spoils of only \$30 per meeting, as in the first statement given, is it any wonder that these boards have

found frequent meetings necessary? Is it any wonder that each new executive finds that he could fill every one of the boards one hundred times and still not satisfy the "demands" of the hordes hungry for office?

But the actual unnecessary cost in money is not the only disadvantage suffered by the State. To have an excuse for another meeting and the personal profits thereof, business which ought to be completed is liable to be left unfinished.

The "mistake" by which these expensive junketing tours of our servants have been somewhat curtailed is a lucky one and it is to be hoped that coming Legislatures will extend the lucky "error" to the cases of all who travel at the State's expense.

THE GOVERNMENT REPORT.

The report of the Statistician of the Department of Agriculture, showing the average condition of growing crops throughout the United States on the first day of July, was issued July 10, as follows:

Condition of winter wheat, 65.8; spring wheat, 102.2; corn, 99.3; oats, 83.2; winter rye, 82.2; spring rye, 77; all rye, 80.7; barley, 91.9; rice, 84.4; potatoes, 91.52.

The report on acreage of corn, which is preliminary, shows 107.8, as compared with the area planted in 1894, which was a little over 76,000,000 acres, being an increase of 6,000,000 acres, and aggregating in round numbers 82,000,000 acres. The averages for the principal corn States are: Ohio 104, Michigan 104, Indiana 104, Illinois 105, Wisconsin 105, Minnesota 112, Iowa 106, Missouri 107, Kansas 117, Nebraska 107, Texas 112, Tennessee, 107, Kentucky 102.

The percentages of condition in the principal winter wheat States were reported to be: New York 78, Pennsylvania 88, Kentucky 85, Ohio 60, Michigan 69, Indiana 52, Illinois 50, Missouri 68, Kansas 42, California 82, Oregon 95, Washington 93.

The average condition of spring wheat by States is: Minnesota 112, Wisconsin 98, Iowa 109, Kansas 46, Nebraska 80, South Dakota 112, North Dakota 102, Washington 94, Oregon 90.

The average condition of all wheat for the country is 76.2. The condition of oats is 83.2, against 84.3 June 1, and 77.7 July 1, 1894.

The condition of winter rye is 82.2, of spring rye 77 and all rye 80.7. The average condition of barley is 91.9, against 90.3 in June, an increase of 1.6 points.

The condition of winter wheat was reported by the department to be 71.1 June 1 and 83.2 July 1, 1894. The condition of spring wheat was 97.8 June 1 this year and 68.4 July 1 a year ago.

Probably Roup.

EDITOR KANSAS FARMER:—Will you please give me a cure for my chickens? One of their eyes will paste shut and thick matter runs out. Then the eye gets all yellow, and in about three weeks they get well, but will not lay while that way. Not one of the old hens has died, but now the little chicks have got the same disease and have got sores all over them. Please give me a cure through the FARMER.

SUBSCRIBER.

Bucklin, Ford Co., Kas.

—This inquiry was referred to F. G. Tompkins, a successful poultry breeder of North Topeka, who answers as follows:

"Your fowls likely are afflicted with a slight form of roup, or possibly chicken-pox. In either case, bathe the sores in salt and water and dry thoroughly and apply carbolic salve or a salve made of ten drops carbolic acid, four ounces olive oil and as much camphor gum as the oil will dissolve. It is best to separate the sick fowls from the healthy ones. The young chicks should have plenty of sunlight and a chance to dust, and if the sores on them are caused by too much grease, they will soon get over it if they have plenty of range. I should use a few drops of carbolic acid in the fowls' drinking water, and see that they have plenty of charcoal."

Ask your neighbor to subscribe for the KANSAS FARMER.

Weekly Weather-Crop Bulletin.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending July 15, 1895.—T. B. Jennings, Observer Weather Bureau, Director:

CONDITIONS.

The air has been quite moist and cool all the week, with the temperature below normal. The rainfall was light in the northern counties east of Decatur and Sheridan, and in some of the western counties, with good rains over the rest of the State, being heavy in the extreme northwest and south-east corners.

RESULTS.

EASTERN DIVISION.

The cool, damp weather has been very beneficial to all crops, except in the south, where it was too wet, sprouting grain in shock, and in Nemaha, where it is too dry. Corn is magnificent, is generally in silk, except late-planted. Meadows and pastures fine, fruit and stock water abundant.

Allen county.—Crops doing well; hard work to save oats and flax on account of dampness.

Anderson.—Not needing rain; corn growing finely; oat harvest over; wet for flax-cutting.

Brown.—Oat harvest over; wheat yielding seven to fifteen bushels per acre; chinch bugs disappearing.

Chautauqua.—Too wet for wheat and oats in stack, plenty for corn and grass.

Cherokee.—Too wet, injuring wheat and oats in stack, preventing conclusion of oat harvest, injuring corn and uncut oats.

Doniphan.—Corn fine, fruit prospects good, wheat in stack, oat harvest over.

Douglas.—Crops growing well; poor hay weather.

Elk.—Too wet to save flax; corn and grass doing well.

MIDDLE DIVISION.

The cool, cloudy weather has kept the corn growing nicely. Wheat harvest is about over, the yield being light. Oats are making a fair crop. Millet, sorghum, pastures, potatoes and gardens in fine shape. Rain is generally needed in the northern counties.

Barber.—Cool, cloudy week; corn in fine shape.

Barton.—Corn doing well, and plowing for wheat begun; the week was cool and cloudy.

Butler.—Corn, millet and sorghum doing finely; pastures good, early potatoes good.

Clay.—Early corn tasseling and silking; threshing has begun; potatoes, gardens and fruit in flourishing condition.

Cloud.—Corn is needing rain.

Cowley.—Corn and millet growing rapidly.

Dickinson.—Wheat making from six to eight bushels per acre; oats turning out well; corn suffering for rain in some parts of the county.

Ellsworth.—Cool weather is delaying wheat harvest; gardens in good shape.

Harper.—Corn in the best condition; pastures good; wheat and oats in shock damaged by wet weather.

Harvey.—Severe wind storm damaged corn and fruit some; oats nearly all cut and will make a good crop; corn silking.

Kingman.—Wheat damaged on account of wet weather; corn fine; grass good.

Kiowa.—Corn has grown rapidly during the cool, cloudy week.

Lincoln.—Wheat cut; corn tasseling; potatoes good.

McPherson.—Great growing weather but bad for harvesting.

Marion.—Cloudy most of the week; corn and grass growing nicely.

Mitchell.—Corn, potatoes and gar-

Finney.—Barley harvest in progress; good crop weather.

Ford.—All crops first-class; peaches and plums will yield good crop, some now on market.

Gove.—Fine growing weather; all summer crops doing fine; wheat improving, harvest will be late.

Gray.—Fine for all crops; corn the finest for years; small grains fine, with plump berry, too green to harvest yet.

Kearney.—Barley harvest begun; oats and wheat not ready yet; too wet and cloudy for alfalfa seed crop.

Morton.—Grass and fodder crops are growing but more rain is needed.

Ness.—Harvest delayed by wet weather; the small grain berry is the plumpest ever grown here; corn promises a large crop.

Norton.—Good growing week; harvest just beginning; all crops very promising.

Rawlins.—Corn looks fine, early corn in tassel but most corn planted late; will be some wheat and oats.

Seward.—Fine week; best hay crop for years; much small fruit; peaches in abundance.

Sheridan.—Corn growing fine; small grain now made; harvest begun.

Stanton.—Fine growing weather.

Thomas.—Will be fair crop of small grain; corn, potatoes and vegetables good; grass fine.

Trego.—Harvest begun, berry large and plump; gardens fine; pastures excellent.

Wallace.—Small grains greatly improved; corn growing fine; alfalfa never better; grass fine.

Entering Upon Prosperity.

Special correspondence KANSAS FARMER.

The Republican valley of Kansas is now in her highest glory. On last Wednesday morning, I took the Union Pacific train, at Junction City, for Wakefield, Clay Centre, Morganville, Clyde and Concordia, and but seldom have I beheld a scene so marvelously beautiful and inspiring. The golden grain, the boundless corn, with broad, flowing foliage of richest green, conspiring, made it a picture of surpassing loveliness. Stopping a day or two at each place mentioned, I heard from farmers and others the same old story of crop failures of other years and hard times, but the encouraging outlook now for corn and the reasonably good oats crop now in shock, inspires hope for the future, and believing, as the true Kansan does, that we are now on the threshold of a series of good crop years, the past will soon be forgotten in the abundance which is to follow.

The Republican valley is destined to become a rich country. It has an immensely fertile soil and is especially adapted to corn-growing and the forage crops necessary to handling cattle and hogs, but while the natural wealth and resources of the valley are great, there is lacking some years sufficient rainfall to produce good crops. This shortcoming, however, is to be remedied by irrigation, alfalfa-growing and subsoiling. These three important ideas are beginning to take root in the Republican valley, as well as farther west. These ideas are traveling eastward and will ere long cross the Missouri river. While they have not yet gotten so firm a hold nor extended so widely here as in the Solomon valley, yet they are growing and spreading. At every town where I stopped, some, I found, were irrigating, some were growing alfalfa and some are talking of subsoiling. A prominent business man of this place (Concordia) said to me this evening: "Every acre of land in the Republican valley has water enough below, in the underflow, to irrigate it, and some day it will be utilized to bridge over seasons of insufficient rainfall."

Mr. J. M. Stratton, of Clay Centre, has put in an irrigation plant on his fine farm, one and a half miles from town, which, by his courtesy, I had the privilege of visiting. He uses wind power, twelve-foot mill and eight-inch pump. He has access to creek water if he needs it; has a reservoir 50x160 feet; is fully equipped for business and expects to irrigate from ten to fifteen acres. Will grow small fruit, garden vegetables, potatoes and onions. He has great faith in the outcome of the enterprise. Mr. Stratton related to me a fact, showing the value of water to fruit trees, which is worthy of being stamped with indelible ink on the mind of every man in Kansas. He has

nine apple trees on his residence property in Clay Centre, which, previous to last year, had not been irrigated, and all seemed to be in the spring of 1894 in equally good condition. During last season, the weather being dry, he irrigated three of these apple trees, being all he could reach with the water at his command. The three trees irrigated bore an average of four bushels to the tree, making twelve bushels in all, of very nice apples. The other six apple trees, which were not irrigated, did not bear a single apple, and are now either dead or in a dying condition, while the other three trees are very healthy, thrifty trees, and are well loaded with fruit this year. I saw these trees myself and was no little surprised. Here were six apple trees, large enough to bear annually from five to six bushels to the tree, which died from actual thirst—for want of something to drink, and there are thousands of fruit trees dying in Kansas from the same cause every year.

Yes, irrigation is the winning card to play and our people are fast finding it out. Orchards, fruit gardens and truck patches will soon all be irrigated and then we can live, whether the rains come or don't come.

M. MOHLER.

Concordia, Kas., July 12.

The Breeders' Interests.

Our readers, especially those engaged in the breeding of live stock, generally recognize the importance of having a good cut or drawing illustrative of the best animals in the herd or flock, and that it is the best way to illustrate and show the intending buyer the type and character of the offerings that one is breeding and intends to sell.

Mr. Lou Burk, the greatest of America's live stock artists, is now in the State for a visit of four weeks among the fine stock breeders. Mail will reach him addressed to *Kansas Farmer*, in care of the KANSAS FARMER. Write him and secure a date for a visit from him.

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.

FARM RECORD.—Our "Farm Records" have been such a splendid seller because of their practical value that our supply is now quite limited. We have a number of the best binding only, which the KANSAS FARMER will deliver to any address for only one dollar.

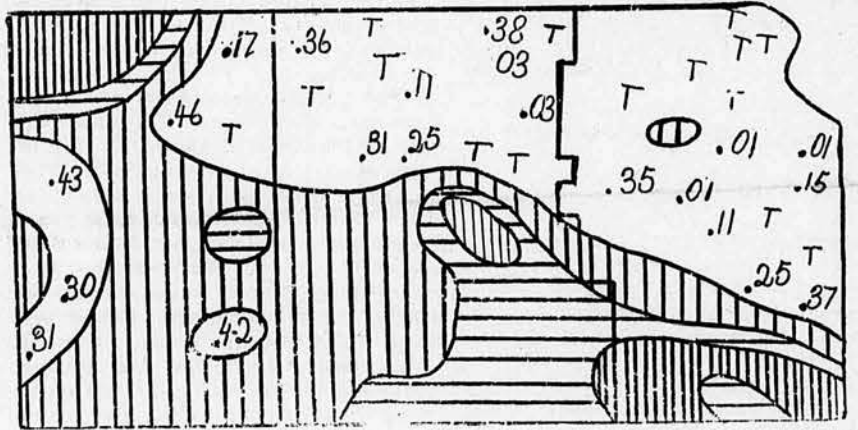
DR. HARTMAN'S ADVICE

Is Sought by Female Sufferers from Ocean to Ocean.

All over the country there are women who have been invalids for many years, suffering with female derangements which the family doctor cannot cure.

What a boon to such women is Dr. Hartman's free advice! So famous has his skill made him that hardly a hamlet or town in the country but knows his name. He cures tens of thousands, and he offers to every woman who will write to him her symptoms and a history of her trouble, whether it be change of life, ovarian trouble, menstrual derangement, or any other of that host of maladies classed under the title of female complaint, free advice and treatment. The medicines he prescribes can be obtained at any drug store, and the cost is within the reach of any woman. He describes minutely and carefully just what she shall do and get to make a healthy, robust woman of herself, when her household work will be a pleasure instead of a trouble and worry, and life be full of blessings.

Every woman who suffers with any form of female trouble should have a copy of a pamphlet written by Dr. Hartman, devoted entirely to the causes, treatment and cure of all forms of female derangements. Sent free to any address by the Peru-na Drug Manufacturing Company, Columbus, Ohio. For free book on cancer address Dr. Hartman, Columbus, Ohio.



ACTUAL RAINFALL FOR WEEK ENDING JULY 13.

Franklin.—Best prospect for corn since 1857; too cloudy and damp for haying.

Greenwood.—Fruit in fine condition, also alfalfa, millet, potatoes and stock water; a heavy corn crop in sight.

Jackson.—Corn crop immense; oat harvest done; haying commenced.

Johnson.—Oats cut, yield good; tame hay better than expected; prairie hay an average.

Leavenworth.—All crops growing satisfactorily.

Linn.—Wheat yielding better than expected; too wet to stack oats; corn is silking, never looked better.

Marshall.—Corn and millet fine; oat harvest over; all crops growing fine.

Miami.—Corn splendid; fruit of all kinds in abundance; gardens fine; too wet for threshing and haying.

Montgomery.—Cool, cloudy, damp week, very unfavorable for grain in shock; much corn blown flat and fruit blown off by wind storm of 7th.

Morris.—Oat harvest nearly done; flax harvest begun.

Nemaha.—Small grains all cut; stacking and threshing begun; needing rain; much corn tasseling, the tassels turning white.

Osage.—Corn and pastures fine; good prospects for big hay crop; fruit and stock water abundant.

Pottawatomie.—Corn fine, though the corn louse is doing some damage in the northern townships; oat harvest nearly done; corn in silk.

Riley.—Crops growing rapidly; early corn out of danger; some oats still green, not ripening this week.

Wabaunsee.—Excellent outlook for corn and the crop is now almost insured; oats and wheat being threshed and yielding poorly; gardens splendid.

Wilson.—All kinds of vegetation has made wonderful growth this cool, cloudy, wet week; wheat and oats in stack and shock badly injured; potatoes rotting in the ground.

dens indicate an extraordinary yield; millet and prairie hay will be abundant; pastures good; oats fair.

Osborne.—Dry, hot week has had a direful effect on corn; oats and wheat nearly all cut, yield poor.

Phillips.—Everything needing rain; corn clean; potatoes and alfalfa fine; wheat and oat harvest in progress; yield better than expected.

Republic.—Corn needing rain; fruit suffering; pastures getting dry.

Reno.—Everything flourishing.

Rice.—Corn looking fine; weeds in wheat is causing some damage.

Rooks.—Corn needs rain; harvest just begun; early corn silking; oats and barley fairly well filled but straw short.

Russell.—Rain needed; corn doing well; harvest in progress; wheat and rye poor; oats fair.

Saline.—Some corn much damaged by excessive rains and heavy winds; harvest progressing very slowly; grass doing finely.

Sedgwick.—All crops growing finely; rivers full of water.

Smith.—Fine growing week; alfalfa ready to cut; corn begins to need rain.

Stafford.—Corn growing finely; wheat harvest over, with very poor yield; oats and barley good.

Summer.—Cool, cloudy week, very favorable for corn; some corn in roasting-ears; Kaffir corn is being planted; plowing for wheat in progress.

Washington.—Corn needs rain; early-planted earing well; wheat making from two to seven bushels per acre; oats ten to twenty-five.

WESTERN DIVISION.

The cool, damp weather has brought all crops well forward, greatly improving the berry of small grains, interfering somewhat with harvest, but giving fine pasturage for stock.

Decatur.—Wheat will be two-thirds of an average crop; corn growing beyond all precedent.

Horticulture.

The Russian Thistle.

EDITOR KANSAS FARMER:—The Russian thistle, a variety of *Salsola kali*, is a member of the goosefoot family, to which our pigweeds and many of our tumble-weeds belong. It is not surprising, therefore, that it often grows into the shape of a tumble-weed. It is, however, a salt plant, and thrives best along the seashore, where the water that comes in from the ocean contains enough salt to continue to support it.

Many maritime or seashore plants, commonly called salt plants, grow in the saline regions of the interior, as well as along the seashore. Among such plants we find *Distichlis stricta*, a salt grass; *Polygonum maritimum*, a species of dooryard grass; *Chenopodium rubrum*, a species of goosefoot; *Atriplex spicata*, *Salicornia herbacea*, *Suaeda maritima*, *Suaeda depressa*, etc. All these except the first two are goosefoots. Some of these plants are found in the salt marshes of Kansas; others are found in the dry salt lands of the State. They all depend upon the supply of salt they derive from the soil for their existence.

And now a new salt plant has made its appearance in the salt regions of the interior, namely, the Russian thistle. A great deal of unnecessary alarm has been created by exaggerated reports concerning its great vitality, its prolificness, its power of adapting itself to all sorts of soil, habitat, climate and condition. The United States government and many of the Western States have sent out commissioners and special agents to study its habits; have sent out pamphlet after pamphlet describing the injury to result to agriculture in case this weed should be allowed to spread itself over the country; have expended many thousands of dollars in a vain attempt to warn the people against this terrible pest, and have aided in the dissemination of this "terrible pest" by shipping mature specimens loaded with seed all over the country so that the people might learn what to destroy. However, no harm came of all this; and a study of the plant and its nature proves that nothing would come of it even though specimens were sent into every county and the seeds scattered broadcast.

This is a specially adapted plant. It grows at its best only in situations best suited to its growth, such as a saline soil, an abundance of moisture in the soil but not stagnant water, partial cultivation, not too long a period of heat and drought. After growing continuously on one spot of earth for a number of years it exhausts itself and runs out, has not vitality enough to mature virile seeds. Hence little need be feared on account of it except in cultivated saline lands.

This plant has its uses as have all other plants. Instead of being treated as an enemy it should be cultivated and applied to the purposes for which it was created. Among these uses are: (1) The extraction of salt from soils that contain too much. (2) Making into fodder for sheep and horses, by cutting when young and tender and mixing with other hay to save the trouble and expense of salting the hay. (3) Inciting the farmer to increased exertions in the corn field, in order to do what is necessary for the crop, whether there are weeds or not, namely, to stir the ground. If farmers should undertake to cultivate it as a crop, they would find it would soon enough run out. B. B. SMYTH.

Topeka, Kas.

A Honey-Yielding Plant.

EDITOR KANSAS FARMER:—The plant you handed me that had been sent to you by Mr. Donahoo, of Harrison, Kan., is *Salvia lanceolata*, properly called in English a wild sage. Mr. Donahoo says his bees are working on it, and asks if it will be good for honey. The plant secretes and yields a small quantity of honey and bees often visit the flowers, but not when alfalfa or white clover is abundant. This wild sage should not be confounded with several species of *artemisia* which are also called "wild sage." It grows plen-

tifully in Kansas, but it is not altogether a dry region plant. It develops much better in those portions of the State that are visited by abundant rainfall. Where the plant is abundant, and other honey plants are comparatively scarce, the honey produced by the bees is bitter; and while a small portion of its honey mixed in with clover honey might not be objectionable, it is probable that if the bees had only this to work upon the honey would be too rank and bitter to be desirable. Its honey is not, however, poisonous in any degree, but simply bitter and unpalatable. B. B. SMYTH.

Topeka, Kas.

Studies on a Family of Beetles.

Abstract of graduating thesis of Geo. C. Wheeler, of Burlington, at Agricultural college commencement, 1895.

I wish to call your attention for a few moments to our common ground beetles, the *Carabidae* of the scientist. They are common everywhere. You may see the little black fellows scampering on the ground or hiding under rocks and rubbish in all sorts of places. Dusky black is the prevailing color, but there are some beautiful gold and green species, some bronzed, marked with coppery dots, and some with yellow heads and legs and blue bodies.

On closer examination you will observe that they all have strong curved mandibles. These predaceous mouth parts indicate the habits and characteristics of the family. We might say they belong to the *carnivora* of the insect world. From the earliest larval stage to the mature beetle they all, with hardly an exception, feed most voraciously upon all forms of insect life, destroying great numbers of our most noxious insects. The *Calosoma scrutator*, or rummaging ground beetle, a large gold and green species, is especially fond of caterpillars. The larvae of the *Calosoma calidum*, the fiery ground beetle, is called the cut-worm, and will kill and devour worms much larger than itself. The bordered *Cullosoma*, the species of *Pasimachus* and *Harpalus*, the great *Lebia* and many others have been distinctly observed preying upon many of our most noxious insects, as the Rocky Mountain locust, Colorado potato beetle, army worm, cotton boll worm, cut-worm, canker worm, web-worm, plum curculio and many others. There can be no doubt of the great benefit these beetles are to us in keeping down noxious insects.

The *adephagous* series, to which the *Carabidae* belong, comprises six families in our fauna, and may all be easily recognized by the slender antennae, predaceous character of their mouth parts, five-jointed tarsi and the structure of the first abdominal segment, it being visible only at the sides, the posterior coxa covering the middle. The family *Carabidae* is a large one, comprising 1,100 species in our fauna. You will notice that the antennae are long and slender and always eleven-jointed, and are inserted under a frontal ridge, between the base of the mandible and the eye. The outer lobe of the maxilla is palpiform and usually two-jointed and the inner lobe is curved and ciliate or spined. There are always six abdominal segments. The legs are adapted for running rapidly and are so variable in character otherwise as to be of little value in classification.

The *episterna* and *epimera* of the *mesosternum* serve to divide the family into sub-families, the sub-family *Carabinae* having the *epimera* large and extending to the coxal cavity, while in the other two sub-families, the *Harpalinae* and the *Pseudomorphinae*, it is usually narrow and does not reach the cavity. Of these two sub-families, the former have distinct setae or bristles over the eyes and on the thorax and abdomen, while the latter have no setae and have a distinct antennal groove.

The *Harpalinae* are divided into two sections, the *Unisetosae*, having one bristle over the eye, the *Bisetosae* having two. This sub-family comprises a large number of our species.

The other sub-family, the *Pseudomorphinae*, is of little importance, there being only four North American species described.

I trust that these few remarks have

"THE ONLY SUCCESS."

The McCormick Corn Binder

LIGHT DRAFT—CLEAN WORK—SQUARE-BUTTED BUNDLES



Chas. McKissick, Supt. "Mayville Farm," Mayville, N. Dakota, says:

"It solves the question of handling corn."

Wm. E. Dana, East Avon, N. Y., says:

"I cut 24 acres of corn ranging in height from 3 to 14 feet."

P. F. Huntley Jr., Le Roy, Minn., says:

"Just what is wanted in corn districts."

A. S. Cotton, Manager "Sanitarium Farm," Clifton Springs, N. Y., says:

"Cuts and binds all corn—slightly lodged and tangled, as well as standing. Have tried many corn harvesters. The McCormick is the only success."

Manufactured by McCORMICK HARVESTING MACHINE CO., CHICAGO.

N. H. Leonard, Spring Valley, Minn., says:

"Binds the corn in great shape, with nice square butts for shocking."

Levi Wambaugh, Waterloo, Iowa, says:

"It works well and to my entire satisfaction."

J. R. McCullough, Solomon City, Kan., says:

"Two men and two horses can cut, bind and shock 12 acres a day."

John L. Taylor, Owego, N. Y., says:

"I cut 50 acres of ensilage corn (some of it very heavy). It is a machine which all ensilage growers must have."

impressed upon you the importance of entomological study. All the creeping things we see are not to be crushed under foot, and it is important to know which to foster and which to fight and how.

Two Crops of Strawberries in One Year.

A lady correspondent in Fairfield county, Ohio, writes to the *National Stockman*: "A fruit agent sold us plants of a strawberry which he said would bear two crops in one year. He also said the horticultural editor of the *Stockman* had the strawberries on exhibition at our county fair in October last. What I wish to know is: Are they a success?"

In reply to which the horticultural editor of the *Stockman* says that he saw and admired the dish of beautiful strawberries at the Fairfield county fair, last October. They were not exhibited by him, but by an intelligent fruit-grower in the northern part of the county. The variety was Enhance, if we remember correctly, a variety we have grown for a number of years with good satisfaction but without knowing that a fall crop could be obtained from it by special treatment. But it is only by special management that October berries can be had. (1) There must be rich soil, well manured. (2) When the last berries of the first crop are not quite ripe (so the exhibitor said) they are to be pulled off. Better, probably, if the blossoms are pulled off about the time the fruit begins to form. (3) The cultivation is to be begun at once on pulling off the few remaining berries and should be almost continuous; at any rate, very frequent. This is the way the grower was understood to have done.

It will be observed that the plan is a kind of forcing, producing a crop, not three or four weeks in advance of the usual time, but six or eight months; and successful management attests the skill of the gardener. Possibly it would not succeed in all seasons. Doubtless if drought should set in at any period, watering would be necessary to avoid failure.

Probably Greenville or Muskingum or some of the other new sorts would respond the same way Enhance does. It would be interesting for any one who can command the time and the other indispensable conditions to make the experiment with any of these varieties, or with Bubach, Haverland, or some of the older ones.

If you want a reliable dye that will color an even brown or black, and will please and satisfy you every time, use Buckingham's Dye for the Whiskers.

Olden Fruit Farm.

The celebrated Olden fruit farm, in Howell county, Missouri, was opened in 1884. It is described in *The South-west* as follows:

"The present proprietors are J. C. Evans and Wm. Byers. The farm comprises 2,700 acres, of which 1,350 are in cultivation, 1,340 being in fruit. The number of different trees is as follows: 70,000 peach, 46,100 apple, 2,000 pear, 1,500 plum, 400 cherry and 20 acres of blackberries and raspberries. The largest proportion of these trees is in bearing, or of bearing age; the severe winter killed the fruit buds on many of the peach trees. The first setting comprised 18,000 peach and 4,000 apple trees. From this planting, five years later, 30,000 crates of peaches were shipped; also 12,000 crates of berries. Yearly large blocks were cleared and set to trees, and this work will be continued until most of the 1,300 acres now in timber has been cleared and planted. One hundred acres will be added to the fruit area next spring. In one block there are 440 acres, all in fruit. There is one solid block of 140 acres in peaches; another block of 90 acres in Elbertas.

"The Ben Davis orchard of 100 acres, nine and ten years old, will this season yield 10,000 barrels of apples. It is worthy of note that this 100-acre orchard, when six years old, produced 3,000 barrels of apples, which sold at Olden station for \$3 per barrel. The present crop is estimated at 25,000 barrels of apples, 5,000 bushels of peaches and 2,000 crates of blackberries."

One of the inexpensive little household conveniences that pleases the wife and is a real convenience as well as a guarantee of a cup of good coffee, is the canister coffee-mill, sold by Fairbanks, Morse & Co., of Kansas City.

Invited to send for my latest price list of small fruits. Half million strawberry plants, 300,000 Progress, Kansas and Queen of West raspberry plants. B. F. Smith, Box 6, Lawrence, Kas. Mention this paper.

A. H. GRIESEA, Prop'r Kansas Home Nurseries, Lawrence, Kas., grows trees for commercial and family orchards—the Kansas Raspberry, Blackberries, standard and new Strawberries—also shade and evergreen trees adapted to the West.

ESTABLISHED IN 1873.

WILLIS NURSERIES.

Offers for fall of 1895 large stock, best assortment. Prices low. Stock and packing the best. We should be glad to employ a few reliable salesmen. Address

A. WILLIS, Ottawa, Kansas.

[When writing mention KANSAS FARMER.]

FRUIT EVAPORATORS

and CIDER MILLS.

BEST, CHEAPEST and Most Reliable on the market. Catalogue free.

WM. STAHL EVAPORATOR CO., QUINCY, ILL.

Economy in Procuring and Using Plant Food.

The expense incurred by Eastern farmers in fertilizing their thin, washed-out lands is little understood by the tillers of the fertile plains west of the Missouri, or even the Mississippi. The cost of fertilizers is an ever-present expense in the East and must always add materially to the cost of producing farm staples in that portion of the country. The following letter from New Jersey shows how they have there to figure on fertilizers:

EDITOR KANSAS FARMER:—One would naturally expect, and with good reason, to see a shrewd and prosperous tradesman studying the wants of his customers and looking about to find in what market he can obtain the goods required of good quality and at least cost. With equal reason we should expect the cultivator of the soil to study the requirements of his own crops to see how he can grow them of best grade and at the smallest expense.

It is granted by all that a complete plant food consists of three elements, viz., nitrogen, phosphoric acid and potash. How can we obtain these at the least outlay of money? Nitrogen in all purchasable forms is the most expensive of the three. We will consider the modes of obtaining it and also the other elements by the majority of farmers. To begin with, he has the manure made by his animals upon his farm, and every wise farmer will make, save and use all he can, for in so doing he avoids the purchase of a certain amount of fertilizer, which means so much money saved. But few farmers get along without buying plant food in some form and should know how to procure it at least cost.

We will look into the cost of some of the articles most commonly bought by the farmer, and will first consider New York horse manure. W. H. Beals, of the Office of Experiment Stations, gives the composition and value of manure from different animals, and from analysis shows that a ton of horse manure contains 9.8 pounds of nitrogen, worth, at 15 cents per pound, \$1.47. It contains 5.2 pounds of phosphoric acid, worth, at 6 cents a pound, 31 cents. It contains 9.6 pounds of potash, at 4½ cents a pound, worth 43 cents, and to these items we will add 50 cents per ton for handling, and we have the horse manure cost \$2.71 per ton spread upon the land, and if fourteen tons per acre are used we shall have the plant food for an acre cost \$37.94. Now we will see if we can furnish the same amount of plant food at less expense. Suppose, to furnish the nitrogen, we pay \$1 for fifteen pounds of crimson clover, sow it upon an acre of land in the corn field after the last working, and we will allow \$1—a large estimate—for sowing and covering the seed, and plow under the clover next May or June for crop, say, of late cabbage, and the clover, with what bone meal we will use, will furnish as much nitrogen as the horse manure, and in as good or better form. For, according to Prof. E. B. Voorhees, of the New Jersey Experiment Station, a fair crop of crimson clover gives 6,500 pounds of organic matter to furnish humus, while it takes twenty tons of horse manure to furnish the same amount, and this nitrogen and humus we have in the clover for \$2. Now we must supply 72.8 pounds phosphoric acid, the amount in fourteen tons of horse manure, and we will do it by buying 250 pounds of bone meal, at \$28 per ton, at a cost of \$3.50, and we have more phosphoric acid than there is in the manure, for the bone meal gives 67.75 pounds, and have from the clover 12 to 25 pounds. Now there is left to supply 81.6 pounds of potash, as the fourteen tons horse manure contained 134.4 pounds, but we have already supplied 52.8 pounds in the clover. We will procure this 81.6 pounds potash in the purchase of 165 pounds muriate of potash at 2 cents per pound, and we have it for \$3.30 and we will allow \$1 for putting on the bone and potash, then the whole expense will be, clover \$2, bone meal \$3.50, potash \$3.30, and \$1 for labor, amounting in all to \$9.80, as against \$37.94 for horse manure, leaving \$28.14 in favor of the clover, phosphoric acid and potash; a snug profit for an acre on plant food alone. But suppose we make a deduction from Mr. Beal's estimate of 71 cents per ton for horse manure, as it can be obtained in this section for \$1.50 per ton, making a difference on fourteen tons of \$19.94, and we still have a profit of \$18.20 per acre.

In like manner, if we take any of the best brands of mixed fertilizers we shall find crimson clover, phosphoric acid and potash ahead, and this will in great measure be owing to the fact that the most expensive ingredient, nitrogen, is furnished so inexpensively in the clover. We will take a brand of some reliable firm which sells at \$40 per ton, a ton of which contains eighty-two pounds of nitrogen, just about the amount contained in a moderate crop of crimson clover and 250 pounds of bone meal. It contains 204.8 pounds phosphoric acid and 120 pounds of potash. Now, as the nitrogen has been supplied by the clover,

and also 126 pounds phosphoric acid and 52.8 pounds potash, we have left to supply 192.2 pounds phosphoric acid and 67.2 pounds potash. We will supply the phosphoric acid in 708 pounds of bone meal, which at \$28 per ton, will cost \$9.86. The potash will be supplied in 134.4 pounds muriate of potash, which, at 2 cents per pound, will cost \$2.69, and we shall have for the whole, clover \$2, bone meal \$9.86, muriate of potash \$2.69, and labor \$1, amounting in all to \$15.55, against \$40 for special brand, leaving a balance of \$24.55 in favor of clover, phosphoric acid and potash, a nice profit again on an acre. In these cases I have employed muriate of potash as a source of supply for actual potash, but in many cases I make use of kainit, to supply the potash, not because it gives the actual potash for less money but because it is destructive to injurious insects and is just as good for the crops. I am now preparing between seven and eight acres for late cabbage, furnishing the nitrogen from crimson clover, which was sown in corn last July and turned under in June, 1895, phosphoric acid from bone meal and potash from kainit, which costs, delivered at my place, \$11 per ton. I am using 500 pounds bone meal and 800 pounds kainit per acre, and in this apply more phosphoric acid and potash than is contained in fourteen tons of horse manure or a ton of special brand, and think, judging from experience, that I shall be well repaid for the outlay.

This is no experiment, for I have been practicing the same thing for years, only I did not wake up to supplying nitrogen from crimson clover till four years ago. However, I have used no mixed fertilizers for a long time, preferring to buy the materials separately and use them according to the crop to be grown. I buy by the carload, thus saving largely in price and freight. Others can do the same thing. Even small growers who want less quantities can combine and buy a car together and divide up. All these little savings go to swell the profits, and when farmers look more carefully after these little matters of economy they will have less cause to complain of hard times. J. M. WHITE.

New Brunswick, N. J.

Gossip About Stock.

Irwin & Duncan, of Wichita, have a nice lot of young Poland-China gilts and boars ready for service and the best lot of young pigs they have ever raised. Have one exceptionally fine young Short-horn bull for sale.

D. Trott, of Abilene, Kas., reports his pigs are growing "almost as fast as sunflowers, in the Ash Grove herd. Never had pigs do better—broad backs, large bone and all vigorous individuals." Mr. Trott has made a decided success in swine-raising.

John A. Dowell, of Robinson, Brown county, Kansas, breeder of registered Poland-China swine, reports a fine lot of pigs, and he will sell good males or females, six to ten months old, for \$15 to \$20. Also will furnish sows bred or not, just as customer desires. Intending purchasers should place orders early as the fall demand promises to be unprecedented.

Mr. E. T. Warner, one of Franklin county's most successful swine breeders, reports that he has just sold one of his fine herd boars—Tecomseh J. Corwin 10744 S.—to Walter J. Latimer, of Garnett, Kas. Our field man regards this animal one of the best in the State and says Mr. Latimer has secured an excellent breeder and one worthy any Poland-China herd anywhere. Mr. Warner reports his herd in excellent condition, especially the youngsters that are coming on for the late summer and fall trade.

Mr. H. F. Hartman, of Marshfield, Mo., writes that the Duroc-Jersey sow he bought of Mr. D. Trott, of Abilene, Kas., had pigs when she was eight months and thirteen days old. She weighed about 240 pounds at the time, and had nothing but grass to eat for six weeks before farrowing. "I was afraid," he said, "of getting her too fat. I believe I could have made her weigh 300 pounds easily at eight months old if I had fed her. She is a beauty and it would take \$100 to buy her. Mr. F. Manning brought a grade Poland-China sow and bred her to the Duroc-Jersey boar I bought of Mr. Trott. The boar was only four months and three days old when he bred the sow. Mr. Manning says the pigs from him are the best he ever had. I do not think they can be beat in the county. I expect to be a Duroc-Jersey man after this. Mr. S. L. Peer also bred a sow to my boar. He bred a thoroughbred sow to a thoroughbred boar of another breed. He says the Duroc-Jersey pigs are by far the best, that the Duroc-Jerseys are the hogs for him, and that he will be a Duroc-Jersey man from now on. This is written to show the great satisfaction Mr. Trott's stock is giving in my neighborhood, and for the benefit of those who may be anticipating purchasing thoroughbred hogs. I tell you both Mr. Manning and Mr. Peer have reason to blow, for they have fine pigs."

What is "Cooking Butter?"

One of the laws of Massachusetts regulating the sale of oleomargarine provides a fine for any one who sells oleomargarine to any person who asks for butter. Recently, an agent of the Dairy Bureau of that State, went into a store in Holyoke and called for butter. For the purpose of conveying information to the salesman as to the kind of butter which he wanted, he qualified his request by calling for "cooking butter." The merchant furnished him oleomargarine, and was convicted in the District court. His case was appealed and tried in the Superior court of Hampden county. Judge Hopkins instructed the jury, says the *New England Farmer*, that if they found that "cooking butter" was an article of commerce, separate and distinct from butter, they should acquit the defendant. If, however, they found that "cooking butter" was merely a kind of variety of butter, and that oleomargarine therefore was sold when butter was called for, they should return a verdict of guilty. The jury, after struggling with the case all the afternoon, finally were unable to agree.

If you want one of the finest magazines published, send us \$2.25 for KANSAS FARMER and *Cosmopolitan*.

Heart Disease Cured

By Dr. Miles' Heart Cure.

Fainting, Weak or Hungry Spells, Irregular or Intermittent Pulse, Fluttering or Palpitation, Choking Sensation, Shortness of Breath, Swelling of Feet and Ankles, are symptoms of a diseased or Weak Heart.



MRS. N. C. MILLER.

Of Fort Wayne, Ind., writes on Nov. 29, 1894: "I was afflicted for forty years with heart trouble and suffered untold agony. I had weak, hungry spells, and my heart would palpitate so hard, the pain would be so acute and torturing, that I became so weak and nervous I could not sleep. I was treated by several physicians without relief and gave up ever being well again. About two years ago I commenced using Dr. Miles' Remedies. One bottle of the Heart Cure stopped all heart troubles and the Restorative Nervine did the rest, and now I sleep soundly and attend to my household and social duties without any trouble. Sold by druggists. Book sent free. Address Dr. Miles Medical Co., Elkhart, Ind.

Dr. Miles' Remedies Restore Health.

A NEW BOOK FREE

It has 128 pages, is printed on fine book paper, it has hundreds of illustrations—wood cuts, zinc etchings. Its reading matter is interesting, as much so for a man as a woman, and the children also are not neglected.

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A CHANCE TO MAKE MONEY.

I have berries, grapes and peaches a year old, fresh as when picked; I use the California cold process; do not heat or seal the fruit; just put it up cold; keeps perfectly fresh, and costs almost nothing; can put up a bushel in ten minutes; last week I sold directions to over 100 families; any one will pay \$1 for directions when they see the beautiful samples of fruits. As there are many poor people like myself, I consider it my duty to give my experience to such, and feel confident that any one can make \$100 or \$200 around home in a few days. I will mail sample of fruit in nice case and complete directions to any of your readers for eighteen 2-cent stamps, which is only the actual cost of the samples, postage, etc., to me. MRS. A. M. CURTIS.
606 Chestnut St., Englewood, Ill.

THE STRAY LIST.

FOR WEEK ENDING JULY 3, 1895.

Miami county—Jas. E. Caton, clerk.
MARE—Taken up by Fred Weir, June 10, 1895, one bay mare, fifteen hands high, white spot in forehead, right hind foot white.
Cherokee county—P. M. Humphrey, clerk.
HORSE—Taken up by Frederick S. Hodson, in Cherokee tp., (P. O. Garden), June 24, 1895, one sorrel horse, fifteen hands high, white in face, hind feet white, spavin on hind leg, saddle marks, high-lifted; valued at \$20.
HORSE—By same, one sorrel horse, fourteen and a half hands high, some white in face, collar marks, work horse; valued at \$10.
HORSE—Taken up by J. W. Hamilton, in Pleasant View tp., May 9, 1895, one bay horse, fourteen hands high, white hind feet, branded B. on left hip; valued at \$10.
Shawnee county—Chas. T. McCabe, clerk.
HORSE—Taken up by Callie Chiles, in Tecumseh tp., June 17, 1895, one light bay gelding, 3 years old, star in forehead, left front foot and both hind feet white; valued at \$25.
MARE—By same, one dark iron-gray filly, 3 years old, white face and nose and right hind foot white; valued at \$25.

FOR WEEK ENDING JULY 10, 1895.

Phillips county—I. D. Thornton, clerk.
MARE—Taken up by John Van Horn, in Rushville tp., (P. O. Powell), April 29, 1895, one light dan mare, sixteen hands high, weight 800 pounds, star in forehead, wire cut on front leg; valued at \$25.
Neosho county—W. P. Wright, clerk.
PONY—Taken up by Philip Shafer, in Lincoln tp., June 4, 1894, one gray pony mare, sheared, branded on left side and hip; valued at \$12.
Cherokee county—P. M. Humphrey, clerk.
MARE—Taken up by B. G. Jones, in Shawnee tp., June 15, 1895, one dark bay mare, sixteen hands high, 12 years old, both hind and one front foot shod, saddle and harness marks; valued at \$10.
Harvey county—T. P. Murphy, clerk.
MARE—Taken up by Charles Haering, Williams & Gardner's addition to Newton city, June 20, 1895, one black mare, 4 years old, scar on right fore foot, no other marks or brands; valued at \$25.
HORSE—Taken up by Maria D. Miller, of Walton tp., (P. O. Walton), June 5, 1895, one bay horse, collar marks on shoulders, no other marks or brands, about fifteen hands high, 9 years old; valued at \$15.

FOR WEEK ENDING JULY 17, 1895.

Miami county—Jas. E. Caton, clerk.
STEER—Taken up by Dr. D. V. Mott, of Fontana, one black three-year-old steer, white face, swallow fork in right ear and underslip in left ear; valued at \$16.
Cherokee county—P. M. Humphrey, clerk.
HORSE—Taken up by George W. Gleer, in Lowell tp., one bay horse, 8 years old, heavy mane and tail, saddle and collar marks; valued at \$20.
MARE—By same, one mare, 5 years old, right hind foot white, had on halter, shod all round, saddle marks; valued at \$20.
HORSE—Taken up by John Longdon, in Lowell tp., July 9, 1895, one yellow-dun gelding, branded B on left jaw, H L on left shoulder and H A on left hip, weight 1,100 pounds.
Crawford county—Peter McDonnell, clerk.
MULE—Taken up by Lyman Jones, of Pittsburg, June 28, 1895, one bay mare mule, 10 years old, branded O on right shoulder; valued at \$25.
MARE—Taken up by J. M. Richards, in Baker tp., May 20, 1895, one dark bay mare, fourteen hands high, 8 years old, star in forehead, branded O on left fore and right hind hoof; valued at \$20.
Johnson county—Jno. J. Lyons, clerk.
HORSE—Taken up by H. N. Hodges, in Gardner tp., May 30, 1895, one dark brown horse, fifteen and one-half hands high; valued at \$25.
MARE—Taken up by Darby O. Dar, in Shawnee tp., (P. O. Shawnee), June 29, 1895, one brown mare, fourteen hands and three inches high, white spot on face, branded O S on left shoulder; valued at \$20.

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.

SORE EYES.—I have a cow that has a tumor in one eye; it is so large one cannot see the eyeball at all. The eye was first inflamed and was doctored by burning with caustic. The other eye is also inflamed. What would you recommend? J. S. Cherokee, Kas.

Answer.—Your description is not definite enough. There is a species of bleeding cancer which affects the eye that is hard to cure. Such growths can only be removed with the knife, and the eye is too delicate an organ to be tampered with by a novice.

WIRE CUT.—I have a two-year-old filly that about six weeks ago cut her forearm on a wire until the bone was exposed for about four inches and all of the muscles cut but not completely severed. A large piece hung down so it would not unite and I cut it off. The other leg had a cut near the knee and as near as I can judge the flexor pedis was completely severed, and the lower end of the tendon stuck out. This end got so large in a few days that I cut it off and now the flesh is healing over it. The knee joint is enlarged and hard. Did I do right in cutting off the parts? What effect will this have on her action in the future? She is well bred and I wanted her for a driver. Oberlin, Kas.

Answer.—It was all right to cut the loose parts off if they could not be made to unite. If the extensor pedis was completely divided it may leave a defective action; but young animals generally outgrow such things in time. The enlarged knee will gradually go down after the cut is all healed.

BLOODY MILK.—I have a cow that gives bloody milk out of one teat. The trouble is of several months standing. What can be done for her? L. S. C. Marion, Kas.

Answer.—There is doubtless some diseased condition of the udder, and a cure is very uncertain. Give the cow two heaping teaspoonfuls of nitrate of potash and two teaspoonfuls of fluid extract of phytolacca decandra twice a day for a week and at the same time milk her thoroughly clean morning and evening, and each time bathe the affected quarter of the udder with cold water for ten or fifteen minutes. If there is no improvement with this treatment the cow may as well be turned dry.

LAME COW.—I have a young cow that has been so lame at times for a year as to be almost unable to walk. The trouble seems to be in the shoulders or front legs. She braces her feet and arches her back when walking. I have another that is lame but not so bad. What can I do for them? Quincy, Kas.

Answer.—The symptoms are those of sore feet, rather than of sore shoulders. Poultice their feet for a day or two with warm poultices made of ground flaxseed, then examine to see if there are no sores or cracks about them. If any are found wash them once a day with a solution made by dissolving a teaspoonful of sulphate of copper in one pint of water. Keep the cows where their feet will be dry and where they will not be required to travel much for a few days.

Interesting circulars sent to farmers. Send name to Bureau of Immigration, Spokane, Wash.

MONEY MADE AT HOME

Last month I cleared, after paying all expenses, \$235.88; the month before \$186.80 and have at the same time attended to my regular business. I believe any one, anywhere, can do as well, as I have not a particularly good location and not much experience. When you have an article that every family wants, it is very easy selling it. It seems strange that a good, cheap dish-washer was never before placed on the market. With the Perfection, which sells for \$5, you can wash and dry the dishes for a family in two minutes, without putting the hands in water. As soon as people see the washer work, they want one, and that is why so much money can be made so quickly. For full particulars address The Perfection Mfg. Co., 277 6th St., Englewood, Ill. I feel convinced that any lady or gentleman, in any location, can make \$5 to \$10 a day, as every family will very soon have a dish-washer. Try it and publish your experience for the benefit of others. ALICE O.

MARKET REPORTS.

Kansas City Live Stock.

KANSAS CITY, July 15.—Cattle—Receipts since Saturday, 8,773; calves, 556; shipped Saturday, 993 cattle, 83 calves. Good natives were steady. Western and Texas cattle 5 to 15 cents lower. The following are representative sales:

DRESSED BEEF AND SHIPPING STEERS.			
26.....	1,232 \$5.35	20.....	1,408 \$4.90
21.....	1,207 4.65	32.....	1,107 4.40
TEXAS AND INDIAN STEERS.			
24.....	1,104 \$3.75	48.....	1,124 \$3.75
132.....	932 3.40	50.....	835 3.35
50.....	1,000 3.30	1.....	1,190 3.30
24 Ind.....	891 2.90	1 Ind.....	1,093 2.40

SOUTHWESTERN COWS.			
42.....	723 \$2.45	85.....	721 \$2.33
9.....	718 2.00		

WESTERN STEERS.			
23 fed.....	1,267 \$4.00	20 fed.....	1,275 \$4.03

TEXAS AND INDIAN COWS.			
10.....	703 \$3.00	33.....	800 \$3.00
28.....	732 2.85	24.....	737 2.70
68.....	657 2.35	25 Ind.....	456 1.75
1 half.....	425 2.00	1.....	670 1.03

COWS AND HEIFERS.			
1.....	1,010 \$3.25	1.....	1,100 \$3.25
10.....	1,000 3.05	1.....	1,000 2.90
3.....	913 2.65	2.....	712 2.65
2.....	731 2.60	1.....	1,130 2.60
71.....	640 2.50	28.....	835 2.50
1.....	1,020 2.50	2.....	770 2.40
1.....	464 2.35	1.....	980 2.30
10.....	1,080 2.25	1.....	960 2.25
1.....	900 2.00	1.....	1,180 1.75
4.....	890 1.65	2.....	980 1.60

STOCKERS AND FEEDERS.			
23.....	1,255 \$4.50	23.....	1,148 \$4.30
27.....	1,001 3.85	28.....	822 3.70
6.....	690 3.35	28.....	780 3.25
28.....	945 2.60	1.....	1,070 2.50

Hogs—Receipts since Saturday, 2,226; shipped Saturday, 828. The market was strong to 50 higher. The following are representative sales:

80.....	211 \$3.05	66.....	234 \$5.00	62.....	291 \$5.00
77.....	213 5.00	60.....	277 5.00	70.....	217 5.03
74.....	218 5.00	57.....	258 5.00	125.....	191 5.00
76.....	202 5.03	61.....	219 4.97½	64.....	213 4.97½
90.....	203 4.97½	68.....	247 4.91	3.....	216 4.91
71.....	227 4.91	69.....	246 4.95	75.....	211 4.91
47.....	200 4.93½	46.....	210 4.90	58.....	223 4.93
50.....	108 4.93	3.....	110 4.87½	61.....	156 4.89
4.....	367 4.80	24.....	134 4.83	11.....	181 4.00

Sheep—Receipts since Saturday, 4,229; shipped Saturday, none. The market was generally steady to strong and active. The following are representative sales:

13.....	63 \$4.40	240 Tex.....	79 \$2.75
88.....	90 3.25	6.....	116 2.01

Horses—Receipts since Saturday, 38; shipped Saturday, none. It was quiet as usual about the horse and mule market this morning. However, there is a better feeling among the shippers and some interest is being manifested in the markets. The supply is light.

Chicago Live Stock.

CHICAGO, July 15.—Cattle—Receipts, 16,073; market steady for best; others shade lower; fair to good beefs, \$3.50@5.80; stockers and feeders, \$2.25@3.91; mixed cows and bulls, \$1.70@4.20; Texas, \$2.50@4.50.

Hogs—Receipts, 21,000; market stronger; light closed higher; others weak; light, \$4.80@5.30; rough packing, \$1.60@4.85; mixed and butchers, \$1.75@5.25; heavy packing and shipping, \$4.90@5.30; pigs, \$3.50@4.85.

Sheep—Receipts, 12,000; market strong; native, \$2.00@4.21; western, \$2.25@3.65; Texans, \$2.00@3.35; lambs, \$3.25@5.75.

St. Louis Live Stock.

ST. LOUIS, July 15.—Cattle—Receipts, 4,500; market steady for desirable grades, 10c lower for others; Texas steers, \$3.00@4.20; Texas cows, \$2.00@3.40; Texas calves, \$3.50@5.80; native steers, \$3.40@3.60.

Hogs—Receipts, 3,000; market 10c higher; heavy, \$1.90@2.25; mixed, \$4.70@5.15; light, \$4.80@5.20.

Sheep—Receipts, 1,000; market shade higher.

Chicago Grain and Provisions.

	July 15.	Opened	High'st	Low'st	Closing
Wht—July....	65½	66½	61	66½	
Sept.....	67	68½	65½	67½	
Dec.....	69½	70½	68	70½	
Corn—July....	45¼	45¼	44½	45¼	
Sept.....	46¼	46½	45	46½	
Dec.....	30¾	30¾	35	30¾	
Oats—July....	23½	23½	23½	23½	
Sept.....	23½	23½	23	23½	
May.....	20¾	27	26½	20¾	
Pork—July....	10 9½	10 9½	10 9½	10 9½	
Sept.....	11 15	11 20	11 90	11 15	
Lard—July....				6 27½	
Sept.....	6 87½	6 40	6 87½	6 37½	
Ribs—July....				6 07½	
Sept.....	6 20	6 22½	6 12½	6 17½	
Oct.....	6 12½	6 17½	6 12½	6 15	

Kansas City Grain.

KANSAS CITY, July 15.—The wheat market here to-day was still in an unsatisfactory condition. Prices were about the same as Saturday, as a rule, though neither buyers nor sellers were satisfied. Most of the wheat offered was damp, and off grade. No good soft wheat was on sale, and buyers would not venture a bid on it to arrive, though it would have sold well if any had been here.

Receipts of wheat to-day, 52 cars; a year ago, 170 cars.

Sales of car lots by sample on track, Kansas City: No. 2 hard wheat, 4 cars old 64c, 10 cars 61c; No. 3 hard, 2 cars 60c; No. 4 hard, 2 cars good 58c; No. 2 red, new, nominally, 64½c; old, nominally, 68c; No. 3 red, 2 cars, choice, 61c; No. 4 red, 1 car 57c, 5 cars 56c; rejected, 1 car 55c, 1 car 52c; no grade, 1 car 48c.

Corn was firmly held and in fair demand early, but later was somewhat weaker. Nothing was doing in new crop delivery. Corn sold to arrive promptly at 40c.

Receipts of corn to-day, 17 cars; a year ago, 83 cars.

Sales by sample on track, Kansas City: No. 2 mixed corn, 1 car 41c; 5 cars 40½c, 2 cars 40½c, 13 cars to arrive 40c; No. 3 mixed, nominally, 40c; No. 4 mixed, nominally, 39½c; No. 2 white, 2 cars 40½c, 2 cars 41c; No. 3 white, nominally, 40c.

Good old oats sold readily and were firmly held. New oats of poor quality, of which several cars are on sale, met with little demand.

Results prove conclusively that by the use of fertilizers rich in potash the crops of

Wheat and Rye

and all winter crops are largely increased and the soil is positively enriched. We will cheerfully mail our pamphlets on Potash, its Use and Abuse on the Farm, free of cost. They will cost you nothing to read, and will save you dollars.

GERMAN KALI WORKS, 93 Nassau Street, New York.

Receipts of oats to-day, 3 cars; a year ago, 48 cars.

Sales by sample on track, Kansas City: No. 2 mixed oats, 2 cars 24½c, 1 car 24½c, 3 cars 23½c; No. 3 oats, nominally, 23c; No. 4, nominally, 21½c; No. 4, new, 1 car 16c; No. 2 white oats, nominally, 28c; No. 3 white oats, nominally, 25½c.

St. Louis Grain.

ST. LOUIS, July 15.—Receipts, wheat, 87,454 bu.; last year, 175,782 bu.; corn, 1,400 bu.; last year, 12,300 bu.; oats, 33,000 bu.; last year, 54,000 bu.; flour, 2,900 bbls.; shipments, wheat, 5,680 bu.; corn, 20,622 bu.; oats, 15,827 bu.; flour, 7,336 bbls. Closing prices: Wheat—Cash, 64½c; July, 60½c bid; September, 60½c bid; December, 60½c bid. Corn—Cash, 41½c; July, 41½c; September, 42½c; December, 41½c. Oats—Cash, 21½c bid; July, 24c bid; September, 23½c.

Kansas City Produce.

KANSAS CITY, July 15.—Prices quoted below for country produce are for wholesale lots from first hands. On orders higher prices are charged.

Eggs—Receipts light; candled stock, 8½c per doz.

Poultry—Receipts fair; market firm on hens and weaker on springs; hens, 6½c; springs, 1½ lbs. and over, 10c; roosters, 15c. Turkeys, gobblers, 6c; hens, 7c. Ducks, 5½c; springs, 10c. Geese, dull and not wanted, 3½c; springs, 10c. Pigeons, firm, \$1.00 per doz.

Butter—Receipts fair; creamery in heavy supply and market weak; extra fancy separator, heavy, supply, 13c; fair, 13½c; dairy, fancy, firm, 12c; fair, 10c; store packed, fresh, 8c; off grades, 7c.

Fruits—Apples, market steady; fancy, hand picked, 40¢@60¢ per bu.; windfall, 20¢@30¢; shipping stock, 30¢@35¢ per bu.; shipped stock, 50¢@\$1.25 per bbl.; fancy stand, \$3.00@7.00; common to choice varieties, \$2.00@4.00 per bbl.; crab apples, \$1 per bbl. Texas plums, sand hill, 50¢@60¢ per crate; thirds, 15¢@25¢; wild goose, 60¢ per crate; 25¢@35¢ per ¼ bu. Arkansas yellow plums, 50¢ per crate. Peaches, home grown, 50¢@65¢ per ¼ bu. basket, 30¢@35¢ per peck; Arkansas and Texas freestones, fancy, 50¢ per ¼ bu.; clingstones, 30¢@40¢; common grades 20¢@35¢.

Vegetables—Potatoes, new, supply moderate, 31¢@40¢ per bu.; sweet potatoes, slow; red and yellow, 2½¢@3c per bu. Cabbage, slow, home grown, 15¢@30¢ per doz. heads. Peas, 40¢@50¢ per bu. Onions, new, California, 50¢@70¢ per bu.

INDIANA - GROWN CRIMSON CLOVER!
The hardest seed. Send postal for exhaustive treatise on the plant. Don't pay one cent for seed until you know whether you can grow it. J. A. Everett, Seedman, Indianapolis, Ind.

Kansas Tannery.

ESTABLISHED IN 1889.

Does a general tanning business, including robes, rugs, etc. Tanning Galloway hides for robes a specialty. First-class work, reasonable prices. All kinds of leather in stock—best quality. Have you any oak bark? Good prices paid for it. Write me.

M. C. BYRD, Lawrence, Kas.

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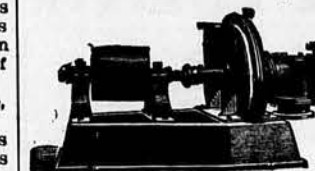
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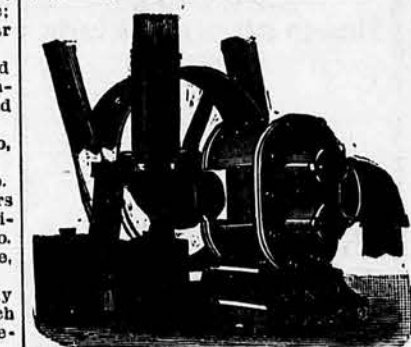
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The Kirkwood Steel Wind Engine

has been in use since 1882. It is the pioneer steel mill. It has beauty, strength, durability, power; it is THE BEST, hence the mill for you to buy. Thousands have them! Our Steel Towers have four angle steel corner posts, substantial steel girts and braces—not fence wire. They are light, strong, easy to erect and will last a lifetime. Our mills and towers are ALL STEEL and fully guaranteed.

Write for prices and circulars. Address, mentioning this paper,

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RETAINS RUPTURE WHEN ALL OTHERS FAIL.



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JUST LIKE USING YOUR FINGERS—YOU KNOW HOW THAT IS!

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We will send you the marvelous French Preparation CALTHOS free, and a legal guarantee that CALTHOS will restore your Health, Strength and Vigor.

Use it and pay if satisfied.

Address VON MOHL CO.,
Sole American Agents, Cincinnati, Ohio.

The Poultry Yard.

COOPS FOR CHICKENS.

What Ingenious Poultry Raisers Can Do with a Barrel.

Every poultry raiser has used old barrels as coops. But most of them have employed them merely for nests at night, laying the barrel down on its side, putting in a handful of straw, and a brick on each side to keep it from rolling. This plan is good enough when there are no rats or cats around, or when the fowls are allowed the range of the farm. In fact in the east it is common practice to fix up such a barrel, drive down a stake twenty or more feet from it, and tie a string to the hen, protecting the leg with a piece of cloth. The fowls soon get used to being tied, and thus the hen and her brood are kept off the gardens.

But this is not an ideal way, nor do we wish to recommend it. The illustration here given shows a barrel arranged to keep in the old hen and per-

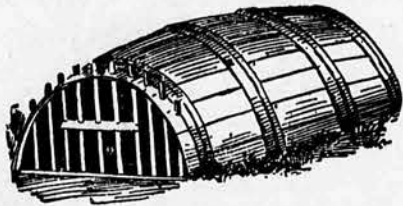


FIG. 1.

mit her chicks to run at will. The barrel is separated into two parts by nailing down the hoops onto the staves where the separation is to be made. Then sawing the hoops gives two coops. Care should be taken to make this separation at a point on the barrel where the bottom will split lengthwise of the grain. The pieces of lath in front may be nailed onto the barrel or driven into the ground.

The second illustration shows how to make even a better pair of coops from a single barrel. The staves are marked on the barrel about three inches from each other, that is, the marks on each alternative state will run round the

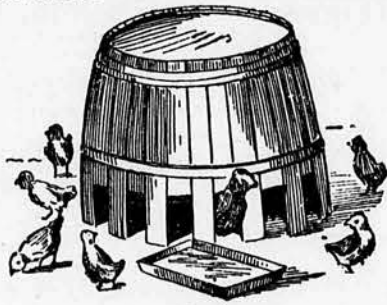


FIG. 2.

barrel in a line. The sawing of these will give two ends like the one seen in the illustration. In sawing these barrels it would be well not to have the alternate openings all around the barrel, as they would let in too much cold at nights, besides wind and dust. When there are but few openings they can be turned to the side to get the sun or away from the sun as desired; also, to avoid wind. Besides it is easier to shut up a few openings at night and keep out rats.—Farmers' Review.

How Wild Turkeys Forage.

A writer in Bee Gleanings thus describes a troop of wild turkeys on a marsh in Missouri: He said they started out in the morning like a regiment of soldiers, taking the fields and woods, and everything that came before them, each turkey marching perhaps twenty feet from its neighbor. They went away every morning, and generally came in an hour before sundown, keeping up the same line of march in all their raids. About an hour before sundown they emerged from the woods, in a long line, all abreast. As they went over the pasture lot every cricket, grasshopper, bug and worm was pretty sure to be detected by their keen, sharp eyes, and you could see them do their work as they moved forward. Of course, they got into the cornfields some, but it is generally considered that they do enough good in their march to atone for the corn they take, for corn is cheap down in Missouri.

We want our readers to secure for us thousands of new subscribers for the KANSAS FARMER and we will pay well for such work. If you will get up a list, write this office for liberal terms.

Some Hints About Lining Eggs.

In lining eggs the most tedious and ticklish part of the work is putting the eggs in the pickle. This may be greatly simplified by using a tin basin punched full of inch-holes, and large enough to hold six dozen eggs. The edges of the basin should be covered with leather, and it should have a handle about three feet long. Fill the basin with eggs, put both under the pickle and turn the eggs out gently; they will all go to the bottom without breaking. This basin will be found equally useful in dipping the eggs out when it is desired to remove them from the pickle.—N. Y. World.

An Ounce of Prevention.

But few poultry dealers, beginners especially, realize the importance of warding off disease, in fact fighting it before it appears; but all are ready to battle when it does come, remedies of all kinds are brought into use and nothing is thought too much of if it will save the birds. But in many cases sad havoc is wrought before the enemy is conquered at all, and great is the loss, which if taken in time might have been averted. If breeders would do one-half of the work before sickness appears in their flock that they do afterwards, how much trouble would be saved.

Splendid Occupation for Boys.

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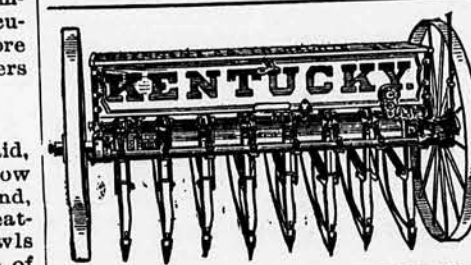
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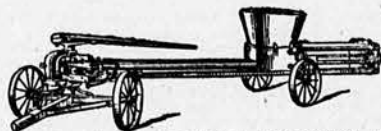
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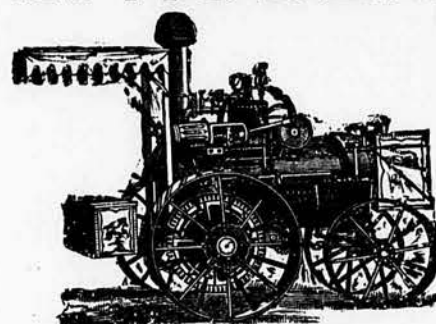
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are the most complete and commodious in the West,
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facilities for receiving and reshipping stock.

	Cattle and calves.	Hogs.	Sheep.	Horses and mules.	Cars.
Official Receipts, 1894.....	1,772,545	2,547,077	589,555	44,237	107,494
Slaughtered in Kansas City.....	969,646	2,060,784	387,570		
Sold to feeders.....	308,181	11,496	69,816		
Sold to shippers.....	409,965	468,616	45,730		
Total sold in Kansas City, 1894.....	1,677,792	2,530,896	503,116	28,903	

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.
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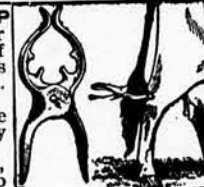
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