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Agricultural Matters.

PRACTICAL FARMING.

The Brown County Farmers' Institute, which is held every year, brings together men of practical experience and good sense and is the occasion for exchange of ideas whereby all are profited. From the papers for the 1894 institute the following are here presented in order that their usefulness may be shared by KANSAS FARMER readers:

SYSTEM IN PLOWING.—BY THEODORE SCHECHER.

On the system of plowing we adopt depends, to a great extent, our success in farming. Theoretical farmers have long suggested that in deep plowing great advantages are found which far outweigh the extra cost. The advantages of deep plowing and allowing growing crops to send their roots deep into the ground are generally conceded by our best farmers. The advantages we derive from deep and thorough plowing I found by my own experience are numerous. Deep plowing will give the ground a chance to soak up the water which we generally have in the flooding showers of spring and early part of the summer. Many farms are cut up in ditches and a great deal of the best soil is washed away into the creeks on account of shallow plowing from year to year. This could be prevented to a great extent by deep plowing. Again, many farms, where the soil became so light by shallow plowing from year to year, by the frost in the winter and sun of the summer, the soil is blown away by the high winds of spring into the roads along hedges and fences. This could have been prevented to a great extent by deep plowing and mixing the deep soil from below with the surface soil. By my own experiment I noted that for corn, and all other deep-rooted crops, it will pay to stir the deep soil sufficiently to give the roots a chance to penetrate to a depth at which moisture is more constant than at the surface.

Now a few remarks on plowing for wheat. As long as the soil was new, wheat sown upon imperfect or half-plowed ground sometimes made a good crop, but it can't be continued for many years successfully. A few simple facts should be kept in mind in preparing land for wheat. It should be in fine tilth to keep moist below. Let it be as compact as it can be made. The plowing should be early and deep. The time has come when thorough plowing and preparation is absolutely necessary to produce anything like a good crop, and the sooner the plowing is done the better. As one object gained by early plowing for wheat is the destruction of weeds, and the sooner their growth is checked the less plant food they will take from the ground: also where wheat follows wheat or oats, the plowing should be done early, and if the harrow or pulverizer follows the plow so much the better. It makes the ground more compact so it will retain moisture better. The time of plowing with a two-horse team is a thing that should belong to the past. Assuming 150 pounds to be accepted as the average working or draft power of a horse, then a plow running seven or eight inches deep and cutting a fourteen-inch furrow requires a three-horse team at least to carry it comfortably, and then the draft is very easily increased 10 to 50 per cent. by the practice of cutting a sixteen-inch furrow with a fourteen-inch plow—a practice that cannot be abandoned too soon. It is far better to cut a fourteen-inch furrow with a sixteen-inch plow, than to cut a fourteen-inch furrow with a fourteen-inch plow. The sixteen-inch plow will turn the ground better, and it turns all the vegetable matter under better than a fourteen-inch plow: it also cuts all the ground loose. I will not say anything about the lister, except that where the lister is used the ground should be plowed at least every third year.

And now I expect you all will become satisfied that I am not a professional writer. I further say that our best writers are not farmers, and our best farmers are not writers.

FARMING FOR PROFIT.—BY CHARLES KNABB.

The topic assigned me is one that requires a good deal of study under the present financial condition of the country, and I don't know of any better answer than for farmers to use more economy in their business. I will try and point out a few items where farmers can make quite a saving:

First—In my opinion farmers buy too much machinery and take too little care in the use and shelter thereof.

Second—Farm labor is too high in proportion to the price of grain; as we have to compete with other countries where farm labor is much cheaper, we ought to get our farm hands at 25 or 30 per cent. less to make any profit in raising grain at the existing low prices.

Third—Farmers as a rule ride too much in their carriages. It is no uncommon thing to see ten or a dozen carriages to one lumber wagon on the streets of Hiawatha on Saturdays, which is all wrong. Instead of riding in their carriages they ought to bring a load of something to sell or exchange and not draw on their pocketbooks or ask the merchant to wait for his pay until they can get time to haul something to town, or until grain or hogs bring a little better prices. This, as a rule, is a very poor theory. Prices are as apt to go down as they are to go up. A very good rule is to sell when we have a thing ready for market, both in stock and grain.

Fourth—Farmers ought to strive and raise a little more grain to the acre and a good many less weeds. In order to do this it is necessary to change the ground more from one kind of crop to another. While I acknowledge corn is king in this county, it is not profitable to have the whole farm in corn, for several reasons. The most important is, in this rolling land we are losing too much of our good soil by heavy rains. Another is, the ground is apt to get too foul and will not produce as well, and by a change to small grain, such as can be fed on the farm to stock, if there is no market for it, or sown to grass for hay and pasture, and occasionally a good growth of grass turned under when its turn comes for corn again is very profitable, both for the farm and farmer.

We have one class of farmers that are still making it profitable in farming with the rich soil we have in Brown county, and with the abundant corn crops we can raise farmers should all prosper.

I believe in mixed farming, in growing all kinds of grain adapted to our soil and climate, and feeding it to stock on the farm, thereby utilizing all the roughness that is grown and enriching the soil and grow better crops each successive year.

The great trouble with the American people is they are living too extravagantly to be prosperous; everything has to be the finest the market affords; the consequence is the expenditure is greater than the income and the great cry is "hard times," when we are to blame ourselves.

One more trouble with the present farmer is, that our sons and daughters cannot help us on the farm; they have to be kept in school from 5 years old until they are of majority to get the required education, and the old man has to do the farming by himself or with hired help. By the time the children graduate they have lost their taste for farming, the old man is worn out by hard work and the farm grows up in weeds. This, in my estimation, is all wrong. I am of the opinion that everything is tending toward lower prices, and we, as farmers, may as well try and make our calculations accordingly.

FARMING FOR PROFIT.—BY WILLIAM HEFFNER.

"How can farming be made profitable under the present financial conditions?"

I am at a loss to know how to commence this paper, from the fact that farming for profit at present is a puzzle for the best of farmers, and the finances of the country are of such a nature that we common mortals cannot grasp, hence I will have to drop the financial part of the topic and confine myself to farming.

The highest ambition of all practical

farmers should be to manage the farm in such a way as to realize the best results with the least expense and at the same time increase the yield of all crops and not to impoverish the land. To accomplish all this we must have an eye to business principles and not expect too much from the land without giving something in return.

I think one of the worst habits that some of our farmers have fallen into is the neglect of utilizing the manure pile. I notice a great many farmers let the manure accumulate two or three years, or until they are compelled to move it (or their buildings), and then nine times out of ten they will deposit it alongside of the road or some ditch. Now, this is wrong. All the fertilizer thus accumulated on the farm should be utilized on the farm, and that annually.

Another item in regard to keeping up the fertility of the soil must not be lost sight of, and that is farming more clover. Every well-regulated farm of 160 acres should have at least twenty-five acres of clover and so reguigated as to change off about every three years, that is, break one and seed down another. In that way you supply that element so much needed in the corn plant, and my word for it, you will be surprised what an effect it will have on other crops.

Now, as to what kind of crops to raise and how to make farming profitable is the puzzle. My experience is that we must confine ourselves to mixed farming, for several reasons, viz.: In case of a drouthy season, a wheat crop would in all probability mature while a corn crop would suffer.

Four years ago those who farmed wheat were the lucky ones, on account of hail storms, while those who farmed corn were nearly ruined. Others who farmed clover and timothy fared very well, while those who were engaged in raising corn strictly were left on the debtor side. Another reason for urging mixed farming is that thereby we are apt to keep up the fertility of the soil. Another serious matter in regard to our soil is confronting us, and we must look for some way to hold it and keep it from washing off. I honestly believe that at the present waste of our soil that in fifty years from now we can't raise white beans, and the land will be worthless. And I further believe that we have come to that point in the history of our avocation that we must pay more attention to what seemed in the past to be small matters, that of fruits, berries, poultry, eggs and dairying. All these things go to swell the aggregate. Eight or ten years ago we thought we could not afford to spend any time on those small matters, but circumstances have changed, the markets have come closer and the demand greater, so that on the whole the aggregate in one year would astonish you. I have become satisfied that we must pay more attention to these small items, and always have something ready in the way of produce to carry to market to exchange for groceries and such other things as are needed by the family. My experience in the last four years has been that had it not been for the dairy products and other items above mentioned, I would have been left in the hole (if you will allow the expression). So you see that conditions are changing all the time, and in order to keep up with the times, we must adapt ourselves to circumstances.

Much more might be said on this topic if we were allowed the political view of it, and the transportation system of the present, all this brought out would make this paper too long.

Kansas Crops.

Secretary Coburn issues, July 5, the following concerning agricultural conditions in Kansas on June 30, collated from reports by a corps of experienced and conservative correspondents in each county, chiefly farmers, to the State Department of Agriculture. He says:

Considering the depressing winter wheat situation reported by growers one month ago, the changes for the better which have since occurred are as remarkable as they are pleasing. Rains, continuing at intervals, with some minor exceptions, over the entire State (but increasing in volume as they



M. Hammerly, a well-known business man of Hillsboro, Va., sends this testimony to the merits of Ayer's Sarsaparilla: "Several years ago, I hurt my leg, the injury leaving a sore which led to erysipelas. My sufferings were extreme, my leg, from the knee to the ankle, being a solid sore, which began to extend to other parts of the body. After trying various remedies, I began taking Ayer's Sarsaparilla, and, before I had finished the first bottle, I experienced great relief; the second bottle effected a complete cure."

Ayer's Sarsaparilla

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

Cures others, will cure you

extended east), begun falling early in the month, causing the stunted straw to shoot up and heads of grain to form and mature almost as if by magic where before the plants were despaired of as too enfeebled to reproduce so much as their seed. These, supplemented by abundant warm weather, have given a yield of from five to ten bushels per acre in innumerable fields and numerous counties where virtually none had been hoped for thirty days earlier, besides wonderfully enhancing the yield and quality of all the remainder, that under more favorable circumstances had continued to be fairly promising. Except in the more northern and northwestern counties the crop is in shock or process of stacking, and the very commendable determination to stack before threshing appears more general than in any preceding season. As a rule, the harvest has been from a week to twelve days earlier than usual, except in some of the southwestern counties, where either sowing or germination were very backward. As to the quality, only a single reporter from each of five of the 105 counties uses the word "poor" to describe it, while all the others quote it as "medium," "plump," "good," "very good," "extra good," and from seventy-three counties the description is "good" or "very good."

Taking the assessors' returns already received, showing the acreage sown in all but thirteen counties, in connection with the present estimates of acreage that will be harvested and the yield per acre, and applying the same ratios of acreage and yield to the other thirteen counties, the result indicates a crop for the entire State of 28,320,000 bushels from 4,726,707 acres sown, or an average of 10.62 bushels per acre for the estimated 2,666,671 acres that will be actually harvested. This is an increase of 3,685,440 bushels or 15 per cent. above the total yield in 1893.

SPRING WHEAT AND OATS.

Reports on spring wheat show but poorly for the acreage to be harvested or the yield; there will be but little. This has not been a spring wheat nor oats year, and of oats there will not be to exceed a half crop.

RYE.

The yield of rye per acre will not vary essentially from that of winter wheat, and the quality is good.

CORN.

Without exception, reports indicate that Kansas presents at this time an area of growing corn the equal of which for extent, evenness of stand, vigorous growth, propitious soil conditions and freedom from weeds has seldom if ever been seen before in any State. The acreage appears to have been increased during the month 10 per cent. and per-

haps more by planting ground upon which oats, spring wheat, etc., had made an unpromising start. The weather at this writing continues very kindly to the corn. In some localities where there have been more or less chinch bugs in winter wheat fields the harvest has caused their migration to the borders of adjacent corn, which, if backward and small, they have left their marks upon, but as yet not to any extent likely to be appreciable in the State's aggregate product.

POTATOES.

While the total yield of potatoes promises to be large the conditions of the crop are widely varying, even in counties adjoining; this applies not only to damage done by frosts in May, but by dry weather in some localities, too much rain in others, rotting of some of the earlier varieties, and the damage done by potato bugs as well. Dickinson, Ellsworth, Kiowa, Ottawa, Pawnee, Republic, Smith and Wichita counties—no two of them adjoining—report more or less serious damage by "bugs."

HAY AND PASTURES.

Dry weather previous to June retarded the growth of grasses to such an extent that in quantity hay will not be more than a medium crop at best, although the rains and more than ordinarily favorable weather of the past month have brought a notable improvement in both wild and tame grasses. Pastures are now good, and while some are yet short they are much better than at any time before, and continue to improve daily, as does the live stock they sustain.

VARIOUS CROPS.

The condition of the crops named below is given in percentages of what is accounted a good average:

Barley.....	48 per cent.
Broomcorn.....	87 "
Castor beans.....	90 "
Flax.....	85 "
Millet.....	84 "
Sorghum.....	28 "
Clover.....	74 "
Timothy.....	65 "
Blue grass.....	80 "
Alfalfa.....	26 "
Prairie grass.....	80 "

RAINFALL.

Weekly bulletins of the United States Weather Bureau, which comprehend daily observations carefully made at about seventy-five different points in Kansas, report thus:

Week ending June 11.—"The rainfall has been unequally distributed, the western half of the western division receiving an average of one and a half inches, the northern counties of the middle division from one to three inches, and from Pratt to Wyandotte two inches and over, while commencing in Harvey and ending in Lyon is a belt in which from four to five inches fell. From Finney and Gray to Washington and Marshall, and from Clark to Linn and Miami the rain was light."

Week ending June 18.—"The eastern division, eastern half of the middle and western half of the western division have generally been well watered this week, while in the western half of the middle and eastern half of the western divisions the rain was light."

Week ending June 25.—"The rainfall has been far in excess of the weekly average, except in the central counties of the extreme west and in Cowley, Chautauqua, Elk, Montgomery and the southern portions of Woodson and Greenwood. There were two well defined centers of rainfall this week, amounting to over four inches each; one in Osborne and Smith counties, culminating in 5.90 inches in Osborne, the other in Reno, Harvey, Sedgwick and northern portion of Butler, culminating in 5.40 inches at Mt. Hope, in the northwest part of Sedgwick. This has been the best growing week of the season."

Week ending July 2.—"The rainfall has not been as well distributed as during the past two weeks, the eastern half of the State generally receiving a large excess, while over much of the western half none occurred. In Woodson county on the 25th, 7.10 inches of rain fell, 5.50 inches falling in one hour and forty minutes. A fine growing week over the larger part of the State."

For a thorough business and shorthand course attend the Wichita Commercial College. Y. M. C. A. building.

The Stock Interest.

THOROUGHbred STOCK SALES.

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

OCTOBER 2—C. C. Keyt, Short-horn cattle and Poland-Chinas, Verdon, Neb.
OCTOBER 3—W. H. Wren, Poland-China swine, Marion, Kas.

REARING HOGS WITHOUT CORN.

The old-time hog-raiser would have his ideas seriously shocked at the idea of maturing hogs for the market without corn. Nevertheless, it is being done in many parts of the country. In some localities it is necessary, because corn is not raised there and is too expensive to ship it in for feed. The real reason, however, is the fact that intelligent and practical experiments have demonstrated that corn is not the only feed, but there are others that are equally good if not superior in many respects.

There is a growing demand, according to the *Field and Farm*, "for less lard and more lean meat in the market hog. Colorado farmers have never heretofore raised many hogs for market because they could not readily meet the former demands for lard-producers. With these changing requirements, they will be able to furnish a hog that, in a few years, will become a distinct part of the produce of Colorado; this will be the alfalfa-fed hog. Alfalfa does not contain all the fattening properties of corn, but this plant, used with non-saccharine sorghums, would probably give a balanced ration. Alfalfa alone gives too much muscle and produces a peculiar kind of complaint not wholly unlike the blind staggers in horses. Fed with corn at the proper period in the life of the hog the disease disappears, or is prevented by such feeding.

"Some substitute for corn as a principal food must be found. The ratio of corn is 1 pound of meat-producing ingredients to 10 1-10 of fat. That of alfalfa is 1 to 3 4-10, while sorghum runs up from 1 to 17. It would appear from the chemical analysis, therefore, that a combination of alfalfa and sorghum would produce the required results, though it is possible to find a substitute for sorghum. The feeding of alfalfa is no new matter, but we do not know that it has been tried with sorghum. In western Kansas, in the Pecos valley in New Mexico, and parts of Wyoming, farmers are preparing to engage extensively in grazing hogs on alfalfa. A farmer in western Kansas tried it some time ago and is so pleased with his success that he has added to his capacity. He lets the sows run on alfalfa pasture, giving them no other feed until within two weeks of farrowing time, when bran and shorts are added. This ration is continued until weaning time, six weeks with him, when the pigs are put on alfalfa pasture with all the bran and shorts they will eat. At 50 pounds weight, the pigs are sorted and wheat screenings are fed with alfalfa. At this period he feeds Jerusalem corn. When the pigs reach 100 pounds, he changes them to another alfalfa pasture, where corn is fed until they weigh from 175 to 200 pounds, his market weight. At the 50-pound weight, one of the pigs was taken sick with the complaint mentioned, and he was told that the cause was to be found in feeding too much of the albuminoid-bearing ration, bran not being so good as alfalfa in that particular.

"Some other plant besides sorghum may be found to take the place of corn. There are a great many which have prolific growths in Colorado that are nearly as good under chemical analysis as sorghum. In the list are several roots, such as turnips, rutabagas and beets. The ratio for none of these is as high, however, as it is for sorghum, or even corn, so that theoretically the sorghum seems to have the preference, especially for the regions out of reach of the present system of irrigation. Sorghum will grow where corn will fail. In the way of dry forage it makes enormous returns. These conditions present to the farmer the prospects for the development of an old branch of farming in a new way. If alfalfa and sorghum, fed from the pasture in sum-

mer and properly prepared for the swine in winter, will meet the growing demand for more meat and less lard, by all means let the farmers add this to their industries."

Starting a Flock of Sheep.

Some time ago we received a copy of the "Souvenir Hand-Book of Shropshire Sheep," by A. H. Foster, Allegan, Mich., who informed us by a letter that he would send this eighty-page pamphlet to any of our readers, postage paid, on receipt of 5 cents. To any one contemplating sheep husbandry from a Shropshire standpoint, the hand-book would prove valuable and interesting. In regard to starting a flock, the "Souvenir Hand-Book" advises as follows:

"If you have not a flock of good sheep the chances are 99 to 100 that it will pay you to have one. Make up your mind first to have a few and let them grow in numbers, and you grow in the knowledge of handling them at the same time. Don't rush into it as a business all at once to get a large flock before you understand something of the management of them. If you do you are very liable to suffer some losses that will perhaps discourage you, and you will attribute it to the business instead of mistakes unknowingly made.

"If you have no sheep buy a few good ewes, the best you can get. If you cannot get two or three pure-bred ones get a few large-bodied, medium-wooled sheep with all the quality you can and begin breeding up with the best pure-bred ram you can get access to, and in a few years you will have built up a splendid mutton flock that will pay you. When you have enough ewes to pay buy a good pure-bred ram, and if you cannot hire a good one before, better go in with your neighbors and buy a good one. Don't use a poor one at any events.

"If you buy a few good pure-bred ewes, bred to a first-class pure-bred ram when you buy them, you can easily sell ram lambs enough to your neighbors at remunerative prices to pay for your start, and you will have enough ewe lambs to build up your flock with.

"Sheep are excellent animals to clean up lands which have grown up to bushes and foul stuff, but when they are fed on this ration alone the best results are never reached. It is better to clean your land with an ax and grub hoe, get it into grass and crops and let your sheep have good grass for pasture. It is better for the sheep and better for the land and your purse. A few sheep can be kept on every farm and the expense of maintaining them will hardly be noticed; but don't keep any stock that has to go hungry. It don't pay.

"In general diversified farming, one sheep to every three acres of a farm can easily be kept to good advantage. There are, indeed, few farms upon which this number would not be kept at a profit with but little attention. This refers to the average farms in the Central States.

"If you desire to raise pure-bred sheep for the purpose of selling them for breeders, take heed that you start right. The stock you start with when your flock is of but few in numbers will be a very accurate measure of what your future larger flock will be. Get good ones, even though you have to pay twice as much as you can get the ordinary so-called pure-breds for, give them enough to eat and drink, mate them well and the results will be that your neighbors will get interested when they see the results that you get, and they will want to do likewise. Don't think you have to make all the money that is to be had out of the business in a year or two. There will always be a demand for animals of a superior quality at profitable prices. Those whose prices and standard of excellence are low will be the ones to drop out, thinking to themselves that the business is overdone."

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SPECIAL FOR JULY.—For new subscribers, both the KANSAS FARMER and Topeka Weekly Capital, to January 1, 1895, for 50 cents, club-raiser to keep half the money.

Who Pays the Freight?

The FARMER is frequently in receipt of complaints and protests from our best breeders and farmers in reference to the outrageous freight rates on purebred animals, especially the single shipments of a bull. It is a clear case of double hardship as well as a blow at improved stock-breeding industry. It frequently occurs that a farmer desires a particular strain of blood, and therefore has to ship a single animal a considerable distance. Again, breeders at a distance may desire to exchange animals; but worst of all is the fact that a farmer who is disposed to improve his stock is debarred from so doing, not because of the price of the animal, but because of the high freight rate and expenses of an attendant.

So important is this matter to breeders and farmers generally that this question should have the prompt consideration and attention of the Kansas Improved Stock Breeders' Association and the State Board of Agriculture, who are the proper persons to take up this matter and arrange an equitable and satisfactory rate. The editor recently received a private letter from one of our prominent breeders, and in reference to this subject, he said:

"The worst enemy the breeder has to-day is the railroad. Exorbitant rates on single animals and unreasonable rules, requiring an attendant, the same as for a carload, and requiring attendant to pay fare in some cases. It practically amounts to a boycott on both the breeder and stock-raiser, keeping them apart, when it is for the best interest of all three—the breeder, stockman and railroad—that the breeder and stock-raiser should have easy rates on breeding animals and the best facilities for shipping. The breeder receives an inquiry for bull from a prospective customer at a distance. In addition to the price he must know what the freight will be. It frequently happens that within the limits of the State of Kansas the freight will be 50 per cent. of the cost of the animal—sometimes more. This is discouraging, and no business can be done. And to make matters worse, an attendant, in some cases, is required, who must pay fare both ways, which will make the cost of the animal to the purchaser at least double what the breeder charges, and sometimes more. The Eastern roads are charging first-class rates on a minimum of 4,000 pounds for a yearling bull that may not weigh over 800 or 900 pounds, and Western rates are but little better. If the railroads would look at this question in its proper light, they ought to see that from a selfish standpoint a more foolish and suicidal policy could not be pursued. They could better afford, for their own interests, to carry bulls for nothing than to thus hamper and cripple the breeder of good stock. For instance, how many steers will the average bull get in his life time, and how much more will the produce of a good bull weigh than the produce of a scrub? And the railroads carry them all to market, besides carrying the same bulls back to market when their usefulness is ended—and weighing double what they did when the breeder first ships them."

Berkshire Prize Essays.

The owner of the Select herd of Berkshires and Kansas Vice President of the American Berkshire Association, Mr. Geo. W. Berry, of Berryton, Shawnee county, authorizes the KANSAS FARMER to make the following offer:

"I will offer a premium, to consist of a pair of Berkshire pigs that could not be bought at private sale for less than \$75, for the best essay on the origin, characteristics and development of the Berkshire, with special reference to the early maturing, superior feeding and excellent pork-producing qualities of the breed."

Few medicines have held their ground so successfully as Ayer's Cherry Pectoral. During the past fifty years, it has been the most popular of all cough cures and the demand for it to-day is greater than ever before. Prompt to act and sure to cure.

Its either Direct Legislation through the INITIATIVE and the REFERENDUM or another Revolution. Which shall it be? For books, information and plan write W. P. BRUSH, Topeka, Kansas.

Irrigation.

THE DUTY OF WATER IN ARIZONA.

By W. A. Hancock in reply to Major J. W. Powell, in *Irrigation Age*.

Major J. W. Powell, in his paper in the *Irrigation Age* for February, has evidently aimed to sustain his assertions before the Irrigation Congress at Los Angeles, and in so doing has fallen into some very grave errors. In the interest of Arizona in particular, and the arid West in general, I propose to give him and his paper a little attention.

AMOUNT OF WATER REQUIRED.

Under the head of "The Amount of Water Required," he says: "Grass growing in turf will transpire in one day a weight of water as great or greater than the weight of the dried grass," and he enumerates a number of vegetables, cereals and perennial vines and trees that will likewise "exhale every day a weight of water equaling the weight of the dried growth of the year." Further on he says: "Thus a ton of hay requires 100 tons of water for its growth, and an acre of grass that will make two tons of hay will require 200 tons of water." "An acre inch of water weighs 226,600 pounds, or about 11½ short tons."

[Both Major Powell and Mr. Hancock have erred in estimating the weight of an acre inch of water. There are 43,560 square feet in an acre. One cubic foot of water at ordinary temperature, say 60°, weighs 62.37 pounds, and one acre foot weighs 62.37 × 43,560 = 2,716,837 pounds. One acre inch weighs one-twelfth of this, or 226,403 pounds, or 113 1-5 short tons.—EDITOR KANSAS FARMER.]

The truth is that an acre inch of water contains 3,630 cubic feet, and at 62.3 pounds per cubic foot, it weighs 226,149 pounds, or 451 pounds less than Major Powell states, but it is 11.3 tons instead of 11½ tons, and hence the acre of grass will transpire only 1.77 acre inches of water, instead of 18 acre inches, as Major Powell claims. If the crop of grass transpired 18 acre inches during its growth, it would transpire 2,034 tons instead of 200 tons, or 1,000 times the weight of the dried crop instead of 100 times.

Major Powell makes the absolute duty of water what the crop will transpire during its growth. As a result, after eliminating his errors, the absolute duty for the crop of two tons would be 1.77 acre inches. Add to this his allowance for evaporation and waste 6 acre inches, and the practical duty is 7.77 acre inches, instead of 24 acre inches, as he claims.

Remember, I do not claim this to be the practical duty of water, but I say that it results from his theory, after eliminating his errors. To follow his theory a little further, he says the absolute duty of water is what the crops transpire, and that in applying this water under economic conditions the loss by evaporation and waste would be 6 acre inches, which must be added to the absolute duty to make up the practical duty; and I will assume that this rule will apply as well after eliminating his mistakes about the absolute duty, so that the practical duty should be the transpiration of the crops, 1.77 acre inches plus the 6 acre inches, for evaporation and waste, or 7.77 acre inches, and all water applied over and above this would be an injurious duty under this rule. Now, let us consider a practical test of the question in central Arizona.

AS APPLIED TO ALFALFA.

The principal plant relied upon for hay is alfalfa. By the 1st of March we give it an irrigation of 4 acre inches, 452½ tons of water per acre. In fifty days we cut it, and realize 1½ tons per acre. By the 1st of May it is again irrigated with 5 acre inches of water, 565½ tons per acre. In forty-five days we again cut 1½ tons per acre. This process we repeat three times more, cutting the last crop about the 5th of November. The total amount of water applied is 24 acre inches. If we deduct 6 acre inches for evaporation, we have 18 acre inches, Major Powell's mistaken duty for one crop of 2 tons, and we have cut five crops, making 7½ tons per acre. The weight of 24 acre inches is

2,713½ tons per acre. If the transpiration is 100 times the weight of the dried crop, and this is the absolute duty of the water, then it is 750 tons per acre, or 6.66 acre inches, and the evaporation and waste is 1,963½ tons of water per acre, or 17.34 acre inches.

Take the result of one cutting that is produced in forty-five days with 5 acre inches of water, and the transpiration would be 150 tons per acre, or 1.33 acre inches, and the evaporation and waste 414½ tons per acre, or 3.67 acre inches of water. For another illustration of the practical result, I will take a crop of wheat or barley. It may be sown from October 1st to February 15th following, and will be cut from May 10th to July 1st, but its growth is principally in February, March and April—say ninety days. It is ordinarily irrigated three times, applying altogether 14 acre inches, or 1,583 tons per acre.

The dried crop, grain and straw, will weigh 2 tons per acre. The transpiration being 100 times the weight of the dried crop will be 200 tons per acre, or 1.77 acre inches, and the evaporation and waste must be 1,383 tons per acre, or 12.23 acre inches.

Now, one more illustration of the practical test on this subject: After our wheat and barley are removed, from the 20th of June to the 10th of August, we can plant corn on a large proportion of our soils with a certainty of producing a profitable crop, if we are diligent and have water to apply. To produce the crop will require fifteen acre inches, or 1,696 tons of water per acre. The crop when dried will weigh three tons per acre. Again applying Mr. Powell's rule that the growing crop will transpire 100 times the weight of the dried crop, and the transpiration will be 300 tons per acre, or 2.65 acre inches, and the evaporation and waste 1,396 tons per acre, or 12.35 acre inches. I will say here, further, in regard to the irrigation of alfalfa, some soils will take an irrigation of 12 acre inches in February and March, after which three crops, making five tons per acre, may be cut without further irrigation. Following the same general rule the transpiration would be 500 tons per acre, or 4.42 acre inches, and the evaporation and waste would be 856 tons, or 7.58 acre inches. A second application of 6 acre inches of water, 678 tons per acre, will produce two tons more of hay, and the transpiration would be 200 tons, or 1.77 acre inches, and the evaporation and waste will be 478 tons per acre, or 4.23 acre inches.

POSSIBLE AREA CAPABLE OF IRRIGATION.

And now I will consider the vital question with Major Powell—the area which can be irrigated. His estimate is 40 million acres. I have already shown that this may be increased to 53½ million acres, leaving his conclusion about the possible and practical duty of water as he makes them, without eliminating his errors. Now, consider that the absolute duty of water, according to his theory, is 1.77 acre inches, instead of 18 acre inches, that the evaporation and waste is but 6 acre inches applying the water under economic conditions, as he claims, and we have the practical duty of 7.77 acre inches, instead of 24 acre inches, a little less than one-third after eliminating his errors, and we may irrigate three times 53½ million acres, or 160 million acres. I will not now attempt to go beyond this, leaving his theory of the possible catch and the practical catch, with 60 per cent. slashed off from the actual run-off to stand for the present. But what about your practical application? says Major Powell. You have used 20.24 and even 29 acre inches, at least as much as I have claimed the practical duty to be. Yes, I admit that, but that is where the variables come in. Central Arizona is but a small portion of the arid region of the United States, and there is nothing else like it anywhere, and I do not know of any other place where the transpiration and evaporation should be as great as here. Consider the altitude, 1,100 feet, the distance from the sea coast, 300 miles, the extreme dryness of the atmosphere, and the depth of the soil, from five to ten feet. Where else are these conditions all to be found?

On what extent of the arid region can you produce five crops of alfalfa in one season? On what extent can you raise more than two crops? On what extent can you produce a crop of wheat or barley and then a crop of corn in the same season? I have shown you that we can produce one crop of alfalfa with 5 acre inches of water; that we can produce three crops with 12 acre inches; that we can produce a crop of wheat or barley with 14 acre inches, and a crop of corn with 15 acre inches. With the exception of a small proportion of the arid region, two crops of alfalfa, one crop of wheat or barley, one crop of corn and one crop of any other plant is the most that would be attempted, and hardly anywhere else would the demand for water be so great as here.

AVERAGE AMOUNT OF WATER REQUIRED.

The average here would be between 12.14 and 15-acre inches. These added together make 41, and one-third of 41 is 13.66 acre inches, and we could irrigate 110 million acres, if the whole arid region required as much as we do. I am led to believe that if Major Powell had not fallen into the grave errors, to which I have called attention, he would have found that the amount of land possible to irrigate in the arid region would not fall much, if any, short of the 160 million acres. It is intended that we, the people, shall be benefited by the expenditure of the large amount of money annually devoted to paying the expenses of that particular branch of our political economy that is directed by the genius of Major Powell, and it may be well for us to take heed and abide by his statistics and theories. But when we detect him committing errors, even though it may be only the trifle, 1,830 tons in the weight of, or 16½ acre inches in the depth of the absolute duty of water for one acre, is it not natural that we should have some grave doubts about the correctness of his statements in general?

I have considered the position he occupies, and the high reputation he bears in his profession, and I have tried to reconcile his statements and theories, and the result is here given. If any person can throw any more light on the subject, I shall be glad, for I am in search of light on the subject of irrigation, and the amount of water that various plants will transpire while growing, and how much will evaporate in the same time from different soils under different climatic conditions.

Irrigating Potatoes.

J. B. Swan, Loveland, Col., says: "I am not able to say just when potatoes should be irrigated. In that, as in size of seed, no rule will hold good. Some varieties require more water than others. Perhaps the best general rule is about this: keep the water off until the potatoes are about the size of a walnut. Of course, if upon examination you find the ground about the roots getting dry and the tops changing to a dark bluish green, water them—being careful not to run the water too high in the row. Always bear in mind it is the roots and not the potatoes that you are interested in wetting. If your field is as much as eighty rods long I would advise the running of one or more laterals through your field so that you need not run water so long through the rows that the upper end is muddy before the lower end has received sufficient moisture. After once irrigating it is very important that the ground should never be allowed to become dry, thus stopping the growth of the potato. For if you permit the growth of the potato to stop and by irrigation it again starts to grow it will either increase irregularly in size or set a second crop, thus giving a large number of small potatoes or a crop of ill-shaped ones. The last irrigating is usually about the first of September, although if it is a dry fall a later irrigation may be needed. Your crop will need no further attention now until digging time. It might now be well to prepare a place to store the crop when dug. Experience has taught me that the crop should be dug by the first of November."

It was the highly "practical" man who once denounced railroad cars as the invention of theoretical fools.—*Dairy Messenger*.

Third National Irrigation Congress.

By the authority of the National Executive committee, the third National Irrigation Congress is hereby called to meet in the city of Denver, Colo., for the seven days beginning September 3, 1894.

To the people of the western half of the United States this Congress presents both an urgent duty and a supreme opportunity.

In this moment of extraordinary political, social and industrial unrest, the nation may well recall Macaulay's prediction that the real test of our institutions would come with the exhaustion of our public domain. The nation faces that situation to-day, with all its perilous possibilities, unless the arid public lands are to be made fit for the homes of men. To suggest the means whereby this may be done, so that idle energies shall find employment and landless citizens find homes and industrial independence, is the duty and the opportunity of Western men.

Irrigation Commissions in seventeen States and Territories, created by the last Irrigation Congress, will render reports to the convention at Denver. Upon these studies of existing conditions and future needs in all parts of the arid region, it is proposed to construct a national policy and code of local laws to be submitted to the federal Congress and the Legislatures of the Western States.

BASIS OF REPRESENTATION.

In accordance with a resolution adopted by the International Irrigation Congress, at Los Angeles, Cal., October 14, 1893, the third National Irrigation Congress will be composed as follows:

1. All members of the National Executive committee.
 2. All members of State and Territorial Irrigation Commissions.
 3. Two delegates at large and as many additional delegates as they have Congressional districts, to be appointed by their respective Governors for the following States and Territories: Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington and Wyoming.
 4. Two delegates at large for each State and Territory not heretofore enumerated, to be appointed by the Governors of said States or Territories.
 5. Duly accredited representatives of any foreign nation or colony, each member of the United States Senate and House of Representatives, each Governor of a State or Territory, one member each from different societies of irrigation engineers, of agriculture, of horticulture, of Chambers of Commerce, of Boards of Trade, together with a delegate appointed by the Mayor of each incorporated city of the seventeen States and Territories named as being directly interested in irrigation, will be admitted as honorary members.
- By order of the National Executive committee.
W. E. SMYTHE,
Chairman.
FRED L. ALLES,
Secretary.

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Horse Markets Reviewed.

KANSAS CITY.

W. S. Tough & Son, managers of the Kansas City stock yards horse and mule department, report the market during the past week as having suffered considerable from the influence of the present strike. Notwithstanding this fact there was quite a good auction on Tuesday. The bidding was prompt and there was quite a fair run of both buyers and sellers. Prices continue very low on medium and cheaper grades of horses and mares. It is very difficult to tell when the present state of affairs will end. Country buyers must be exceedingly careful or they are sure to lose money. Mule market at a standstill. Absolutely no trading in anything.



Five World Beaters.

"SICKLES" BRAND HARNESS. All genuine stamped with this "Trade Mark." Made in five styles at \$6.50, \$9.00, \$10.00, \$15.00 and \$25.00 per set complete. The best harness for the money on the market. Ask your harness dealer for them. Manufactured only by J. B. Sickles Saddlery Co., St. Louis, Mo.

Does Farming Pay?

The Australian *Agriculturist* has a practical as well as somewhat humorous letter full of good points, under this heading. It says: "This question, according to a recent issue of the *Agriculturist*, still awaits an answer. To my mind one cause of delay in the matter is the general want of keeping any record of the various transactions taking place on the farm. True, farming out West is still in its infancy, and to a great extent experimental, as we are still in ignorance of the best paying crops to grow, or those most suitable to our land and climate of the locality. But time will soon correct this, and unless your querist happens upon a Yankee or canny Scot you will speedily get the answer.

"The world over, farmers seem to dislike keeping account books. I remember some forty years ago, in the old country, two brothers had worked a farm for many years successfully. One market day at the dinner table a younger farmer led the conversation to the great importance to the farmer's business of duly keeping accounts as in all other commercial undertakings. When the elder brother, who always attended the market, reached home, at the supper table he reported the topic of conversation at the dinner table to his brother. The result was they agreed that the correct thing for them to do was to keep account books. The necessary ones were duly bought and properly kept. At the end of the year they were totalled up, and the result discussed freely over the bright fire in a cozy room after the work of the year was over. Said results were the talk of the two brothers and their housekeeper niece for days afterwards. The housekeeping book, which contained the amount of butter, eggs, milk, poultry and pork, entered at the same prices as the storekeeper in the town allowed for them, reached such figures that surprised them all.

"After conning it over a good time, the elder brother says: 'Look here, forty years we've lived comfortably, paid everybody, and saved a bit without keeping accounts. It may do for young folks, but I won't be made uncomfortable like this by knowing that our butter, etc., cost so much. Put the books away.' Things have changed since then, and the modern man now keeps his proper set of books, but are not we here much in the same position as older countries were a century back? We ought not to be, with modern appliances at hand, but our land is as poorly tilled, and its resources as undeveloped as in those early days. True it is that education has made rapid strides since then, but some of our most successful settlers are those who came out as mere lads, and whose instruction was left so severely alone, that they do not take so kindly to the plan, but the younger ones of the family should be urged to keep daily records of work done, sowing of crops, preparation of land for same, sales or purchases connected with the farm. My plan is to use an ordinary diary or its blank page, fill in every evening what has transpired during the day, with notes of the weather. This does not take long, and the looking over this of last season is the source of much fun for the younger ones, as the several deals in horse-flesh or other stock recalls many a laughable incident which would otherwise have been forgotten, and also helps to correct any errors which were made in previous season's work.

"The young people will gladly do it if father can't. I feel sure that all who may try this simple way of book-keeping will soon merge into the orthodox commercial style of Dr. and Cr. accounts, and will ere long be enabled to produce a profit and loss account, the doing of which will materially help to increase the profit, and thus shortly the question will be positively answered."

The value of manure on farm lands is proved in every fair experiment that is made. Prof. F. A. Waugh reports a test of black wax beans at the Oklahoma Experiment station in which an unmanured plot has given up to date 8.4 pounds of string beans, while a plot directly beside it and treated the same

in every way, except that it had a good coat of manure just before planting, has given 43.8 pounds of string beans. Further than this the beans on the unmanured plots are dead, while those on the manured plots are still green and bearing. In the same test beans on older cultivated land have given 13.3 pounds; on alkali ground, 10.2, and on second sod, 14.2 pounds.

Weekly Weather-Crop Bulletin.

Issued by the United States Department of Agriculture, in co-operation with the Kansas State Board of Agriculture, for the week ending July 9, 1894, T. B. Jennings, observer:

The first days of the week were unusually hot, but cool weather has prevailed since the 3d. The sunshine has generally been abundant. The larger part of the State has been well watered, the rains generally falling where most needed. They were light in Clark and Meade, in Greeley, Wallace and Wichita, in Norton, Phillips and Smith, in the counties east of Ness, and in the eastern division south of the Kaw. They were heaviest in Kearney and Reno.

The hot weather of the first days was very trying on vegetation in the middle and western divisions and in the extreme southern counties of the eastern, but the timely rains have very materially benefited crops in the middle and western divisions. Corn over the entire State, with few exceptions, is in an unusually good condition and is now silking as far north as the Kaw river.

Wheat harvest is generally over and threshing has begun. Oat harvest has begun and the oats are generally turning out better than anticipated.

Meadows and pastures have improved much, and the new hay coming into market in the central counties is very fine. In the west the seed crop of alfalfa is about ready to cut, while in the central counties it has generally been secured in good condition.

Apples are growing fast and promise a good crop, though in Pottawatomie many were blown off by high wind.

Potatoes are generally large, though in Trego the crop is about ruined by the Colorado beetle, and in other localities the wet weather has injured it.

Agriculture in China.

China is the oldest nation in existence. Three-tenths of the population of the earth live within the boundaries of this empire. The agriculture that supports its 450,000,000 inhabitants is a subject of the greatest importance to them and of no little interest to us.

The Secretary of the American Legation at Peking, recently made a report to our government on agriculture in China, of which we give a brief extract. The origin of the art is lost in antiquity. Notwithstanding this the Chinese have made but little progress in it; the primitive methods are still in vogue. Their system of cultivation is very careful and marked by attention to details, but shows ignorance of the principles of rotations of crops, adaptation of soils to particular grains, and extremely primitive knowledge of agricultural implements. Their fields are treated like immense gardens. They are subjected to the most constant and watchful care, both at the time of planting and during the growth of grain. When ripe the crop is gathered by hand with the utmost completeness, not a straw or a leaf, scarcely even a root, being allowed to remain.

The two most characteristic features of agriculture, and to which its success is largely due, are the use of manure and the system of irrigation. Manures are gathered from every available source. Many devices are used for irrigation. Where there are no running streams water is laboriously raised by hand from wells and cisterns.

The agricultural implements are few in number and of the rudest character. They are chiefly the plow, the hoe, the harrow, the rake and the stone roller. A complete outfit for farming, including a water buffalo or donkey, may be bought for \$20 or less.

The principal crops are wheat, rice, beans, millet, Indian corn, tobacco, poppy, barley and buckwheat. Large areas are devoted to the growth of mul-

berry trees for silkworm culture. All cereals are carefully planted in furrows wide distances apart and hand cultivated. The yield of grain is larger than the average in this country.

Our First-Page Illustration.

That the evolution of the hay press has kept pace with the wants and needs of the hay-maker and shipper is fully confirmed by an inspection made with a view of purchasing one of the latest improved machines. Our readers interested in hay presses will find on examination that the Eli Continuous Travel Baling Press is one of the best yet offered for the inspection of the public. It is manufactured by the well-known agricultural implement manufacturing company, the Collins Plow Co., of Quincy, Ill., and among other things concerning their hay presses say: "It is constructed on the best known scientific principles, combining many new improvements, and we believe it to be the most powerful yet simplest full-circle hay press ever invented. Constructed as it is, mainly of steel, there is absolutely no danger of breakage. The bale chamber is made entirely of steel plates three-sixteenths of an inch thick, and are firmly fastened with steel rivets, making it a smooth and solid chamber that ought to last a century. One of its most recent improvements is its forty-six inch condensing feed opening, making it, as we believe, the largest feed opening of any machine yet put upon the market. This of itself ought to command the attention of every hay-baler, as it gives plenty of time, in fact more time to the feeder and a better opportunity to get a full and larger amount of hay into the baling chamber in a given time, and, of course, a greater quantity of hay or of the material that is being baled, with the same effort that is used in working with a smaller feed opening. Another special feature that we desire to call the attention of the hay-making and hay-shipping public to, and that is, the construction of the full-circle Eli is such that it is easily and rapidly set for work and in making ready for the road for removal from one place to another is, as we call it, readily telescoped and compacted so that it is no more trouble to move than is an ordinary road wagon. That you may the more fully understand the merits of our several makes of hay presses and other farm machinery, we will take pleasure in mailing you a copy of our very handsomely illustrated catalogue that contains a host of information, much of it that comes from our patrons, on whose testimony you can implicitly rely. We recognize the fact that the hay crop is reported short generally, and that hay will bring this coming winter a remunerative price. It is owing to this fact and to the excess of the rainfall during the last month (June) over Kansas and Nebraska that we feel that the shortage will be made up to some extent from the prairies of Kansas and Nebraska, hence we propose to help market it by the use of the Eli hay press."

Gossip About Stock.

By addressing Marshall Bros., box 20, Atlanta, Kas., any one interested in a Galloway herd of cattle may find what they want. However, the rule among buyers is to confer with breeders who advertise what they have for sale.

The wool market is unchanged and trade dull. The St. Louis quotations are: Medium, 11@13c; fine medium, 10@11c; light fine, 9@10c; and heavy fine, 8@9c, while the live stock market for sheep is as follows: Higher and demand unsatisfied. Fat sheep and lambs wanted. Sales of common to good mixed at \$3@3.50; common ewes at \$3; lambs at \$3.75@4.75; tailings at \$1@1.50; bucks at \$1 each. This reference to present market conditions tells the story in brief of the situation now and the future trend of sheep husbandry.

If farmers and breeders would more generally advertise their wants, for sale, exchange, etc., there would be less complaint about getting such small prices, and bargain-hunters take advantage of this unbusiness-like condition to seek whom they may devour, by scouring the country and picking up rare bargains at their own prices from men who do not let their light shine or advertise. Remember that somebody, somewhere, wants any surplus you have for sale. How then are you to find this out? There is only one well-known modern method—by advertising.

Thousands of dollars are being lost every year by Kansas breeders who overlook the importance of advertising. If you have anything for sale advertise it and you will do business. If you only expect a local trade, advertise in your county papers; if you want more competition among buyers and desire to extend your trade and realize higher prices, then extend your advertising throughout the State by using the KANSAS FARMER, whose columns are carefully read every week by thousands of people who have many wants to supply and look to the FARMER for the necessary information on such matters.

Working harness

will last longer, be tough, won't gall the horses, and is pleasant to handle if oiled with

Vacuum Leather Oil.

Nothing so good for women's and children's and men's shoes.

25c. worth is a fair trial—and your money back if you want it—a swob with each can. For pamphlet, free, "HOW TO TAKE CARE OF LEATHER," send to

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WATER PIPE.

Our Hard Burned Vitrified and Glazed Clay Pipe is everlasting. With our Improved Joints this pipe will stand same pressure as iron and costs about one-fourth as much. Write for particulars.

W. S. DICKEY CLAY MFG. CO.,
Makers of all kinds of Burned Clay Goods.
Office 800 N. Y. Life Bldg., Kansas City, Mo.

German or Crimson or Scarlet Clover Seed.

The following information is from the Kansas Seed House, Lawrence, Kas.:

"This popular clover is in common use in Italy and France for cutting and feeding in the green state, also for hay and seed. Also grown successfully in Delaware, Maryland and Virginia. The yield of fodder is immense, and after cutting it at once commences growing again and continues until severe freezing weather. Its growth is very rapid and very luxuriant, and therefore it is valuable as a fertilizer to turn under. It is said to be 20 per cent. richer as a fertilizer than common red clover.

"It produces from eight to fifteen bushels per acre when properly handled. It makes the earliest pasture in spring, and blooms in April.

"The best results have been obtained by seeding it during July and August. It can be sown alone or with timothy after wheat crop is removed.

"It is fast becoming a popular crop in the Middle States and South, and is finding its way into Pennsylvania and the West. It is used on poor and rich land. It is seeded in this country in June, July, August and September, and will produce an enormous crop early in the following spring, suitable either for consumption as green food or for hay. Ten or fifteen pounds should be sown to the acre, according to quality of ground."

Railroad Fares Reduced.

The Nickel Plate road has made material reductions in the fares to many points on that line, including Fort Wayne, Cleveland, Painesville, Ashtabula, Erie and many other Eastern points. Ticket office, 199 Clark street; depot, Twelfth street viaduct and Clark street, Chicago.

Where Will You Spend the Summer?

The Baltimore & Ohio Southwestern railway has an attractive list of summer resorts reached via its lines. Before you decide where to go, ask some agent of the B. & O. S. W. Railway for a copy, or write O. P. McCarty, General Passenger Agent, St. Louis, Mo.

"TOBACCO SPIT EVERYWHERE"

How often have you noticed it? Ladies' eyes dilate with horror as they scornfully gather up their dress and tip-toe into the car for a seat. The man who is "TOBACCO SPITTING HIS LIFE AWAY" can find a cure in

NO-TO-BAC

because it acts directly on the nerve centres, destroying the nerve craving effects, and builds up and improves the entire nervous system. Makes WEAK MEN STRONG. Many report a gain of ten pounds in ten days. You run no physical or financial risk. NO-TO-BAC sold under

OUR GUARANTEE

IS PLAIN AND TO THE POINT. One box, \$1.00; three boxes, \$3.00. 30 days' treatment, \$2.50. IS GUARANTEED TO CURE TOBACCO HABIT in any form, or money refunded. We don't claim to cure every one, but the percentage is so large we can better afford to have good will of occasional failure, than his money. We have FAITH in NO-TO-BAC. If you try NO-TO-BAC, you will find that it is to you

WORTH ITS WEIGHT IN GOLD.

Book called "Don't Tobacco Spit and Smoke Your Life Away," mailed for the asking. Buy No-To-Bac from druggist or mailed for price. Address THE SUTHERLAND REMEDY CO., Chicago Office, 45 Randolph St.; New York Office, 10 Spruce St.; Laboratory, Indiana Mineral Springs, Ind. (1)

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.

Land Poor.

I've had another offer, wife—a twenty acres more of very decent farming land, as level as a floor. I thought I'd wait and see you first, as Lawyer Brady said, To tell how things will turn out best, a woman is ahead.

And when this lot is paid for, and we have got the deed, I'll say that I am satisfied—it's all the land we need; And next we'll see about the yard, and fix the house up some, And manage in the course of time to have a better home.

There's no use talking, said the wife—you buy that twenty more, And we'll go scimping all our lives, and always be land poor. For thirty years we've tugged and slaved, denying half our needs, While all we have to show for it is untilled land and deeds!

I'd sell the land, if it were mine, and have a better home; A pleasant garden close at hand, where you and I may roam. If we could live as others live, and have what others do, We'd live a great deal happier, and still have plenty, too.

While others have amusements, and resting times and books, Just think how hardy we have lived, and how this old place looks. That other farm you bought of Wells, that took so many years Of clearing up and fencing in, has cost me many tears.

Yes, Charles, I've thought of it a hundred times or more, And wondered if it really paid to always be land poor; That had we built a cozy house, took pleasure in our home, Our children, once so dear to us, had never wished to roam.

I grieve to think of wasted weeks, and years, and months, and days, While for it all we never yet have had one word of praise. Men call us rich, but we are poor—would we not freely give The land and all its fixtures for a better way to live?

Don't think that I am blaming you—you're not a whit to blame; I've pitied you these many years to see you tired and lame. It's just the way we started out, our plans too far ahead, We've thrown the cream of life away, to leave a "pile" when dead.

'Tis putting off enjoyment, till no longer we enjoy; And, after all, too much of wealth seems useless as a toy. Although we've learned, alas! too late, what all must learn at last, Our brightest earthly happiness is buried in the past.

For life is short and full of care, the end is always nigh; We seldom half begin to live, before we're called to die. Were I to start my life again, I'd mark each separate day, And never let a single one pass unenjoyed away.

The things that make life pleasant, I'd have them now and then, And have a home that was a home, and not a cage or pen. I'd sell some land, if it were mine, and farm right well the rest; I've always thought, and think so yet, small farms, well worked, are best.

—Australian Agriculturist.

LITERATURE IN THE HOME.

Graduation thesis, by Winnie Luella Romick, at State Agricultural College commencement, 1894.

Some one has beautifully said, "Literature is the atmosphere of the mind. In it we live, move and have our being intellectually."

Among our many habits that are cultivated daily, none can produce as much real pleasure and improvement of the mind as that of reading, provided the books are well chosen.

Reading is a recreation. It is a means of developing our mental faculties, and is a rest from our daily cares that makes one feel like a new person. Not only has it been called the wine of mental life, but the daily bread and door to all truth, whose drawn curtains reveal the fire and splendor of the past, the ambitions and hopes of the present, and, to some extent, the power that lifts the mysterious veil of the future.

In this age of fiction, science and history, material for reading is abundant. Time only prevents us from reading as much as we wish, but every one has a leisure hour that might be well spent with such books as will develop the brain and sharpen the intellect. The question is often asked, "What shall I read?" The large number and variety of good books make it difficult to promptly select, but there should be no hesitation in choosing pure and sound literature instead of that which is debasing.

At the very best we can only read a small fraction of all the books published, still we must not confine ourselves to one course, for reading only along one line will develop a very narrow character, while the various

kinds of literature will bring us in closer contact with the world, broaden our minds and increase our stock of information.

There can be no ideal home without good reading material, for without this one essential it is deprived of the happiness, comforts and advantages that are sure to result from the use of books. A good library is indispensable to a well-ordered, intelligent family, and the home without one is not excusable when books are so cheap and easily obtained. The library should contain not only the more substantial works, but also a few volumes of the lighter sort, selected with special reference to the child's needs—for instance, fairy stories and books of adventure.

What can be a more attractive picture than the one which appears before us as we enter the home of a family after the curtains have been drawn with the approach of night? The father is reading the newspaper, and the children, grouped about their mother, are listening eagerly to the stories read in her pleasant and well-modulated voice. Later in the evening, when the children have been tucked in bed, the mother and father spend a happy hour enjoying together the contents of a new magazine or book from the shelves of the attractive library, which fills one corner of the bright little room.

The influences of literature are numerous, and were we to attempt an estimate of them we would be compelled to admit it is one of the greatest aids in the advancement of civilization.

History is full of interest when one reads the writings of Macaulay, Motley and Prescott. The poetry of Wordsworth and Burns will bring us in closer contact with nature, and the fiction of Dickens and George Eliot will cultivate our imagination and help us to understand human nature and social conditions.

Whatever we read or fail to read, there is one book that should be our daily companion. It is the Bible. All other books are read and laid aside for occasional reference, but this is a book we should carry with us all through life. It has been compared to a lamp that shines, a sword that cuts and a star that guides.

A good and pure literature, both in and out of the home, is one of the highest developments of the ages, as among its many advantages it will tend towards saving young people from idleness and vice, saving them to true manliness and womanliness, and lifting them into realms of beauty and truth.

The Use of Electricity in the Home.

Graduating thesis, by Minnie Louisa Romick, State Agricultural College commencement, 1894.

It is strange, indeed, that a power so rich in its resources, so universal in its application, and so readily controlled as electricity, was not earlier introduced into the home.

Although destruction and even death have resulted from electricity, we are to learn that its application to household appliances is safe and becoming better known daily, here as utility and there as an ornament, until in a reasonable time we may anticipate its presence in the home will be indispensable.

Of the many uses to which electricity has been applied, perhaps the most important are lighting, heating and cooking. Of these, the first mentioned is best known, and since it has so many excellencies and peculiar advantages, we feel sure that it will very soon be introduced in every home.

The incandescent electric lamp produces light without flame and very little heat, without smoke and gas as do the lamps in most common use to-day. In addition to these, it is adapted to the purpose of adornment, because of the charming effect produced by its artistic arrangement in appropriate surroundings.

There can be no doubt that roses and other flowers can be made to bloom more frequently by the assistance of the electric light. Its influence on color has been shown to be extraordinary. Tulips, fuchsias and petunias exposed to its light produce deeper, richer tints, bloom more fully and develop longer stems and larger leaves.

Edison, the well-known scientist, introduced the electric light, and long usage and familiarity with it have proven it less hurtful to the eyesight than oil and gas lights.

The advantage of using electricity for heating the home is that it saves much discomfort and ill health by constantly regulating the temperature, both in summer and winter, independent of irregularities in the seasons. When the house is heated with water, hot air or steam, it is only necessary to place in each room a thermostat, which makes contact as soon as the temperature reaches the desired point. By means of this thermostat the temperature can be kept within desirable limits. It is generally claimed by those who have adopted this system that it is a decided saver of fuel and a great comfort to have the whole house kept at a uniform temperature.

One of the latest and most important uses to which electricity can be put is that of cooking. Attempts have been made for many years to make it useful in this line of

work, and after considerable experimenting the final form given is that of a German silver wire imbedded in enamel in the base of each cooking utensil, thus furnishing each with its own stove, and the whole array of pots and pans need only to have the button pressed and the cooking can go on under the most perfect control. There can be no doubt that as the cost of the current is reduced, electrical cooking appliances will be brought into general use, because of their many advantages, such as cleanliness as well as economy of time and labor in their favor. It certainly will be a very interesting and delightful condition of things when the girls of this generation shall be able to fry, boil and bake without heat, smoke or gas.

In equipping a house with electricity, consideration is required to obtain the greatest convenience. The switches by which the lights are turned off and on should be placed where they will be accessible on entering the room.

If one's house is supplied with the necessary appliances for heating and cooking, a good plan would be to have a switch just inside the door and another so conveniently arranged that the switch can be turned before rising in the morning and in twenty minutes the house, from garret to basement, will be comfortably warm, and if the food be put in the cooking utensils at night and the necessary connections made, the breakfast will be done and ready for the table when the housewife makes her appearance.

Great indeed are the possibilities of the future, art and science lending the means and electricity supplying the power.

SPECIAL FOR JULY.—For new subscribers, both the KANSAS FARMER and the Topeka Advocate, to January 1, 1895, for 50 cents, club-ratser to keep half the money.

SPECIAL FOR JULY.—For new subscribers, both the KANSAS FARMER and Topeka Weekly Capital, to January 1, 1895, for 50 cents, club-ratser to keep half the money.

An Uncanny Town Clock.

"We've got a town clock in our village that waked folks up more than a little at different times during the past five years," said George May, of Coalton, Pa. "That clock was put into the tower of the May building twenty-five years ago. It struck the hours regularly for nearly twenty years and then suddenly quit striking. John Gordon, the village jack-of-all-trades, had taken care of the clock ever since it became a feature of the village, but he couldn't tinker the old public indicator of the flight of time so that it would again announce the hours as they passed. The clock ran all right, but it wouldn't strike.

"Now, our folks had got used to depending on hearing the clock strike, and when it became silent there was much regret in town, so much, in fact, that when, two years ago, the Presbyterian society of our town went around with a paper soliciting subscriptions for the purchase of a town clock, to be put in the steeple of their new church, people gladly and willingly put down their names, and the clock was bought and put up.

"The church was across the square from the May building, and it was a glad sound when the new clock pealed forth its announcement one day that it was ready to keep the village posted on the hours. It was set going at 12 o'clock noon. Everybody was rejoicing over being able once more to know just how things were going, when, at 1:30 on the day the clock was started, they were thrown into consternation by hearing the old clock in the May building, which hadn't made a sound for three years or more, start in deliberately, and it seemed defiantly, to strike 2.

"It sounds ridiculous to say that the old clock was actuated by vengeful feelings toward the town it had served for so many years because the town had forgotten it for a new and more vigorous timepiece, but it is a fact, all the same, that it took striking at all hours of the night, sometimes immediately preceding the striking of its correct neighbor in the church steeple, sometimes immediately after it, and sometimes at the same time.

"Then, again, it would break out two or three times an hour, striking all the way from one stroke up to forty-eight. The clangor it kept up caused people to request the owner of the May building to cease having the old clock wound, but he declined to interfere with it, and it kept on fooling with the new clock and keeping folks busy looking at their watches to see what time it really was, until one night a year and a half ago the church caught fire in some way and was burned to the ground, new clock and all.

"The church was an hour burning, and during that time the old clock across the square struck three different times.

"It wasn't until long toward evening the day after the fire that people began to notice that the old clock hadn't struck once since its rival was destroyed. That amazed them, and their amazement grew when the clock remained silent all that night and the

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next day, and did not strike again for nearly a year and a half.

"John Gordon, who had wound the old clock for a quarter of a century, lived with his aged mother in the village. Along in the early part of May, at just 6 one morning, the clock aroused and astounded everybody again by giving one loud and doleful stroke. Soon afterward it was learned that Gordon's old mother had died at exactly 6 o'clock that morning.

"At the funeral of his mother Gordon became ill, and for the first time since the clock was put in the May building other hands than his had to wind the capricious timepiece. Gordon was sick two weeks, but every one expected to see him on the streets again in a few days, when at 8:30 o'clock one evening the old clock tolled out another single stroke.

"John Gordon died at just that hour. "Then the owner of the clock decided that it should never be wound again. When it ran down and stopped, its hands were at 8:30, and there they will remain as long as they cling to the face of the now silent old clock."—New York Sun.

"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.

RUDY'S PILE SUPPOSITORY is guaranteed to cure Piles and Constipation, or money refunded. Fifty cents per box. Send stamp for circular and Free Sample to MARTIN RUDY, Lancaster, Pa. For sale by all first-class druggists and in Topeka, Kas., by W. R. Kennady, Druggist, northeast corner Fourth and Kansas Ave.



HIRES' Rootbeer

makes the home circle complete. This great Temperance Drink gives pleasure and health to every member of the family. A 25c. package makes 5 gallons. Be sure and get the genuine. Sold everywhere. Made only by The Chas. E. Hires Co., Philada.

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FITS CURED

(From U. S. Journal of Medicine.)

Prof. W. H. PEEKE, who makes a specialty of Epilepsy, has without doubt treated and cured more cases than any living Physician; his success is astonishing. We have heard of cases of 20 years' standing cured by him. He publishes a valuable work on this disease which he sends with a large bottle of his absolute cure, free to any sufferer who may send their P. O. and Express address. We advise anyone wishing a cure to address, Prof. W. H. PEEKE, F. D., 4 Cedar St., New York.

The Young Folks.

The Old Days.

Do you forget the days we passed
In the bright hay-harvest meadow,
In the glimmering heat of the noon-day sun
Or in hazy depths of shadow?

How we roamed in the shade of forest trees,
When the sun, at noon, was glowing,
And heard, through the tangled undergrowth,
The pebbly streamlet flowing?

How we quenched our thirst at the forest spring
And ate of the forest berry?
Oh, the days we spent in the old greenwood
Like the days of song, so merry!

'Twas long ago, and yet, dear Bob,
When memory brings before me
The scenes of childhood, I forget
That age is creeping o'er me.

I'm a boy again, in the summer-time,
And out in the morning early,
Out in the field at break of day,
When the dew on the grass is pearly.

Out in the meadow, soft and cool,
Where the clover tops are bending,
We watch the round-faced moon grow dim,
And greet the lark ascending.

We wade in the brook in the balmy morn,
Till the sun o'er the hill is peeping,
Till we hear the sound of the breakfast horn,
And swift at the call go leaping.

You're older now, dear Bob; your hair
With silver threads is sprinkled,
And the bonny boy-face, once so fair,
Is weather-browned and wrinkled.

And I am older still; but why
Should we waste life in pining?
Let's nurse the vine, that memory
Around our hearts keeps twining.

The flowers it bears will live and bloom,
'Till unto us is given,
To gather, in never-changing fields,
The deathless flowers of heaven.

—Gath Brittle.

THE BOSTON SCHOOL REGIMENT.

One of the features, to the boys at least—the greatest feature in the public schools of Boston each year—is the street parade, maneuvering, dress parade and inspection of the Boston School Regiment. The regiment, which for thirty years has constituted a part of the curriculum of Boston's High and Latin schools, is an organization distinctively an adjunct of Boston's school system. No other city in the country has a regiment of public school boys, and few have military drill in their public schools.

Each year a day is set in the month of May by the school committee for the parade of the regiment. This year the day named was May 18. Parade day is one of great interest to Bostonians. Even those whose residence in the city has been but a few years seem to catch the spirit of paternal pride in all things pertaining to the young "school-boy soldiers." No regiment of State militia can claim so much attention upon parade as these 1,600 uniformed and well-drilled boys.

The regiment usually forms in Montgomery Square, in front of the English High school, and the march over the route begins about 10:30 in the morning. The last street on the route is aristocratic old Beacon street, and up this street, past the State House at the top of the hill, they march to the wide gates at the lower end of the Common, and out upon the parade ground. Here they perform the evolutions that are concluded with the dress parade. The parade ground is separated from outsiders by two lines of rope on the hill overlooking it. The inner rope keeps from the parade ground all who have no business with the regiment. From this rope for about two hundred yards up the hill there is a reserved space for the friends and relatives of the boys, and then another rope, carefully guarded by policemen, shuts out the thousands of indirectly interested spectators. Admission to the reserved space is by tickets, which are issued by the school committee, and given to the boys for distribution.

The introduction of military drill into the public schools of Boston was the outgrowth of the martial spirit engendered by the war of the rebellion. In 1861, Amos Lawrence, Martin Brimmer, Rev. Dr. Edward Everett Hale, and several other distinguished citizens, established the Massachusetts Rifle Club, the object of which was to instruct and to fit men to be officers in the volunteer regiments then organizing in the State. Hobart Moore, an officer in the militia, was engaged as drill-master. In 1864, the men who had organized the rifle club petitioned the school board to permit the introduction of military drill into the public schools. They agreed to pay for an instructor and rent a hall for one year as an experiment.

The year's work demonstrated the experiment to be a wise one. It was decided to establish the drill regularly, confining it to the Latin and the High schools throughout the city. General Hobart Moore was appointed instructor, and held that position until his death in the latter part of last month. He was Brigadier General of the Massachusetts militia for seven years, and a thorough tactician.

There are at present eight High schools in Boston, in which there are about 1,600 boys. The military classes are divided into

one battalion of eight, two of seven, and one battalion of ten companies. The two central and largest High schools in the city are the English High and the Latin school. The Latin school is the only one that fits the pupils directly for Harvard college. From these two schools are chosen by election each year the Colonel and Lieutenant Colonel of the regiment, one furnishing the Colonel, the other the Lieutenant Colonel, and the choice of each alternating between the schools, so that the highest officer is elected from one of the schools every other year. The other officers are elected every year by the boys from the various schools in which the battalions or companies may be located.

Before the boys reach the High schools they have received preliminary military instruction, which fits them for carrying the musket and wearing the sword. The tactics are substantially those used in the regular army. Military drill in the High schools is compulsory, though of course the feelings of the parents are given due respect, and exceptions made in some cases.

The arms and equipments consist of 1,500 breech-loading muskets, which were sent to the factory and cut down to the required lengths for cadets. There are two lengths, adapted to the different ages of the boys. The cadets wear the belt and bayonet scabbard. The officers wear a double-breasted sack coat of dark blue cloth, with standing collar. The Colonel, Lieutenant Colonel and Majors wear two rows of buttons, nine in each row, while for the Captain and First and Second Lieutenants there are only seven buttons in each row. The three higher officers wear three double strips of one-quarter inch gold braid running the length of the cuff, with a small button in the angle of each strip. A collar clasp of crossed swords is on each officer's coat. The trousers are of the same material as the coats, with one-quarter inch gold braid on the seams. The non-commissioned officers wear silver cord on the trousers.

The Colonel of the regiment this year was elected from the English High school. Mr. H. H. Hill, from one of the advanced classes. The Lieutenant Colonel is Mr. W. H. Rand, Jr., a Latin school senior. The school regiment has no band of its own, but there is always a well-equipped and thoroughly trained drum corps. On parade day special bands are hired. About ten days after the annual street parade there are prize drills of the battalions in Mechanics' Hall for four days, each battalion drilling from two to five o'clock of the four afternoons. When these drills are over military work for the year is practically over, and not until the canvassing for officers' positions at the opening of the next school term does enthusiasm for the work fairly awake.—Harper's Young People.

SPECIAL FOR JULY.—For new subscribers, both the KANSAS FARMER and the Topeka Weekly Capital, to January 1, 1895, for 50 cents, club-rates to keep half the money.

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Another World and Ours.

Graduating thesis, by C. C. Smith, Manhattan, delivered at Agricultural College commencement, 1894.

We are all more or less interested in the welfare of our neighbors, and the question comes to us, "Who are our neighbors?" The term is relative, and may be restricted to the members of the community in which we live, or it may be so comprehensive as to include a universe. Using the term, then, in its widest sense, there is one of our neighbors which is particularly interesting to those who are acquainted with her; and to those who are not, allow me to introduce to you our neighboring planet, Mars. The fact that she is several years older than any of us will not, I think, make her acquaintance any the less pleasant.

This member of our solar system receives our special attention because of its marked similarity in physical conditions and habits to the globe on which we live. It obeys the same laws of rotation and of revolution as those by which our earth is guided. Its surface, like that of the earth, is made up of land and water, very much as we see them here. The zones of Mars correspond to the zones of our own planet. The poles there are surrounded by perpetual snows, which increase in winter and decrease in summer, just as do the snows of our arctic and antarctic regions. The seasons are limited by the same extremes of temperature that mark the difference between our summers and winters. The Marsian year is longer than our own, the orbit of that planet being exterior to the orbit of the earth. The length of their year is 687 days of twenty-four hours each. The diameter of that globe is about 4,000 miles, half that of the earth. The volume of Mars is a little more than 0.12 the volume of the earth, the density is 0.97 and the planet as weighed in the scales of science is 0.13 the weight of our own planet.

Mars has two moons, their diameter being given as anywhere from six to sixty

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miles each. The smaller of these makes its revolution once every eight hours. So here we have an instance of a moon that rises more than once a day. The other follows the example of our satellite, making its revolution in a little more than twenty-four hours.

We now come to what is perhaps the most interesting, though an entirely unimportant part of our subject, that of the habitation of Mars. Of this we know nothing, but neither does any one else, so that while we cannot prove our position, others cannot disprove it. We choose to believe that Mars is inhabited, and no evidence that we have seen has seemed to us sufficient to cause any one to abandon this view, should he choose to hold it. The physical conditions of Mars are very similar to those of the earth. They have the same heat, the same light, the same atmosphere that we have, and can we stop here? No, let us carry the comparison farther: Here every drop of water is a little world in which live myriads of minute animalcules. Why should it be different there? Here an atmosphere very similar to that of Mars supports the lives of higher organized beings. Is it not probable that the same result follows on the surface of our sister planet? It is not necessary that the inhabitants of Mars be exactly the same as the inhabitants of the earth. Did you ever ask yourself why some little particular of our existence is just as it is, and what the effect would be if there were a slight change? We should not expect to find the two planets entirely similar. No two individuals are alike in every particular. You cannot find one clover leaf in all the garden of nature exactly like any other clover leaf. God never made two human beings but there was a vast difference between them, and it is not to be supposed that He has made two worlds exactly alike.

In studying this part of the subject let us form our own conclusions. Either view you accept you will find it will supported. But do not let a slight variation of conditions from those of the earth make you believe that the habitation of Mars is impossible, but remember that a power that can support our existence here can support the life of a similar being, even in another, though it be a different world.

Perilous Place of Abode.

A young Wilmington man recently visited the suburbs to secure a spot for permanent investment. Tired of the wares of the stock board, he concluded to take a look at some real estate, and, boarding an electric car, soon arrived at his destination. Drawing a Reina Victoria from his vest pocket and striking a flame by the application of a lucifer to his trousers, he sauntered leisurely up the board walk, at peace with the world, and himself in particular.

The business man deviated from the course which led over the board walk and traversed scarcely one hundred yards of a suburban field when his attention was arrested by the sound of rapidly approaching hoofs. Looking around, he observed a fine specimen of the equine family, sans bridle, sans harness, galloping over the turf with the speed of a Directum. For an instant he admired the turf work of the rapidly approaching steed, and with sweet memories of lucky days at Gloucester, he was almost tempted to place an imaginary stake on the finish of the fast stepper, when, to his horror, he realized the animal was making straight for him. Without stopping to argue the point with the seemingly belligerent beast, the business man took to his heels and barely succeeded in vaulting a high board fence just as the animal let drive at him with a hind foot and sent the top board of the fence spinning after him.

The young man picked himself up as best he could and started off for more fields to conquer, when the cries of a woman were wafted to his ears, and, casting his eye in the direction of the signal of distress he was just in time to see a dairymaid sent sprawling on the ground, the impetus being the vicious kick of a brindle cow. His first impulse was to rush to the rescue of the rustic maiden. If he had any misgivings as to his duty at this moment, they were soon dissipated by the movements of the brindle cow, which he observed bearing down upon him under full sail.

He took refuge behind a pump, and, instead of tracking him to his lair, the cow

merely knocked the handle off the pump and passed on. Again the young man pulled himself together and started off, only to have his trousers torn in a conspicuous locality by the sharp molars of a collie dog.

By this time the young man began to wonder if the fates were not rampant in that community, and whether or not his past life had been all that could be desired in the way of pursuing the straight and narrow path. Thoroughly satisfied with the adventures of one day, he returned to leave the accursed neighborhood, by passing round an adjacent stable, when the rustle of wings and the "shrill clarion" of the cock caused him to look up at the moment when a big game rooster flew over his head and bore away a good-sized fragment of his spring overcoat. Thoroughly alarmed over the onslaughts which confronted him on every side, the business man rushed madly from the scene of the hostilities and took refuge this time on the cushioned seat of an ingoing electric car.—Wilmington News.

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The United States Treasury estimate of the population of this country July 1, 1894, is 68,397,000.

Many anxious people in the cities are turning longing eyes to the country with its freedom from the turmoil of strikes.

Cannot modern civilization find a better method than the strike for adjusting differences between employer and employed?

The latest Wall street circular of Henry Clews says that it is very generally expected that next spring will certainly bring a "boom."

The developments of the next few hours of the great strike are expected to be of the utmost importance. The various trades unions of Chicago have determined to strike this (Wednesday) morning at 7 o'clock. It is hinted by Grand Master Sovereign that the strike will speedily become universal throughout the country.

After presenting a summary of the condition of the wheat crops of the various countries of the world the *Millers' Gazette*, of London, England, comes to the conclusion that there is very little promise of the world's crop in 1894 being at all equal to those of the past three years; there has, in fact, been quite a marked deterioration in the general wheat crop prospects during the past six weeks, and this has naturally had much to do with the restoration of confidence in the wheat market.

The *Millers' Gazette*, London, England, of June 27 says: "During the past week the speculative element has been more in evidence than for many months past, and although not much support has come from the French demand, the feeling is becoming very prevalent that wheat has seen the worst, and that as an investment, it presents very attractive features. The 'army of bears' have, moreover, come to the conclusion that under the circumstances wheat is too cheap to bear any further pressure; and many a 'bear' seller of a month ago, is to-day a 'bull.'"

The following are Bradstreet's estimates of the position of wheat at the beginning of the new crop year: "The United States and Canada carried over on July 1, fully 73,500,000 bushels of wheat against 75,000,000 bushels a year ago, and one-half to one-third as large quantities visible in preceding years. The total here, in Canada and Europe July 1, was 146,519,000 bushels, compared with 152,308,000 bushels one year ago. With Australian stocks included, the world's available wheat supply July 1 was 154,319,000 bushels against 157,208,000 bushels one year ago, when the total was the largest on record for a like date."

STRIKES.

Of all means to an end, that which seems to the general observer to give least results compared with the magnitude of the expenditure, is the strike. Loss of wages to the striker; loss of business and often of capital to the employer; loss of opportunity to other industries, and in case of a great strike, loss to the entire country from the interruption and derangement of industries and commerce, must be put down on the debit side of the account. To these must be added a certain demoralization which is inevitable, and, often, the destruction of vast amounts of property by those who—not strikers and not laborers—are the standing enemies of everything that is, and are ready to take every opportunity to pilage and destroy when it can be done under cover of a respectable cause or of any disturbance of society's equilibrium. Bloodshed must also be reckoned as one of the inevitable accompanying expenses of every great strike.

This, briefly, is the debit side of the strike. When the credit side is looked for it is difficult to discover tangible results of sufficient importance to be at all considered in comparison. In the case of the present strike, the restoration of the former scale of wages to the workmen recently employed in the works of the Pullman company, or the agreement to submit the Pullman case to arbitration, would settle the entire difficulty, and is apparently all that the strikers or boycotters hope to achieve.

If this is all, it is an insignificant matter for so large a contention, and one for which there might easily be ample provision of law.

Again, it may be inquired, what has the whole country to do with settling a dispute about wages affecting an employer and, at most, a few thousand employes?

But organized labor looks at the matter as one of the largest significance in its relation to the question of wages now and hereafter, and it is worth while to try to analyze organized labor's view of the case. It is useless to disguise the fact that, as opportunities are now appropriated, there are several people idle and anxiously waiting for every vacancy that can possibly occur throwing open an opportunity to labor at any price. Laboring men believe that no more opportunities would be created by a reduction of wages, and they realize that should there be a cutting under should the injunction "Thou shalt not take another man's job," become obsolete, present conditions would surely change rapidly to others in which wages would reach the lowest figure at which people can subsist. Unlimited competition after the full appropriation of new opportunities means wage reduction unlimited save by the starvation line. It is the perception of this fact which, in the mind of the striker, justifies the great expense which constitutes the debit side of the strike account. It is the realization of this which gives vitality to the maxim, "The cause of one is the concern of all."

From time immemorial society has proceeded on the theory that a man may do what he will with his own. He may use it; he may let it to some one else; he may hire some one to use it for him, or he may consign it to disuse as long as he sees fit. He may have many or few employes; he may engage or dismiss them at pleasure, and he may obtain them at such wages as he sees fit to offer, and they or any others to accept. If laborers were not satisfied to serve at such wages as the owner chose to pay, the aphorism was, "The world is wide," and they were expected to find work somewhere else or to fix their eye on the setting sun and go out and appropriate some of the new opportunities.

Until recently modern times have seen no such demand for specialization as now exists, and such vast communities of wage-earners as now abound were unknown. But emigration has now girdled the globe and the vast accessible new opportunities are no more. The industrial requirements of the age demand the gathering together of hands trained for special work to such an extent that they are of little value for anything else even if other work

were to be obtained. This condition prevails in every industrial occupation except farming, in which work specialization has yet made but little progress. It is the skill and fidelity of the employes and the capital of the owners which together have built up the great transportation and manufacturing enterprises. Both law and custom declare the right of the owners to employ and discharge at will, and to obtain labor in a competitive market. Against this the employes can interpose only combination, and the last resort of this is the boycott and the strike. That the conditions, let alone, must grow rapidly worse; that continued reduction of wages must succeed unlimited competition; that want must succeed continued reduction of wages; that woe and misery must succeed want; that starvation and anarchy must succeed these, the trend of events in the recent past in this country and for many generations in the old world strongly indicates. The ever-present fear of such catastrophe; the manifest tendency towards such conditions nerves the laborer and his family to endure the woes of the strike. The dim realization of some such impending fate has developed at each succeeding great strike a more extended popular sympathy for the strikers' cause.

No doubt the worker who takes the strikers' place—if he can do so with safety—promotes his own selfish interests, and places his family in a position of comfort, while the man whom he has displaced is fighting the battle of wages, the battle which the striker believes is the only barrier between any laborer and rapid reduction to the verge of pauperism. The laborer who will thus take the place of another is considered worthy of the utmost contempt of his fellows, and is denominated by the opprobrious title, "scab."

But the employers' side of every strike depends for its success on the employment of "scab" labor and bringing strikers to time by the immediate starvation argument.

It is too much to expect that the present strike will be the last. More probably it is the beginning of a series of disturbances whose end cannot be predicted. Certain it is that neither side has proposed anything to lessen the cause of disturbance or to render its repetition improbable.

"UNCLE SAM" AND THE BOYCOTT.

"Uncle Sam" may have remembered that he has contracts with several railroad corporations to carry his mails. He has observed that these corporations are not persons in the ordinary sense but that they make all contracts and perform all their other functions through their various employes. He has remembered that on the part of these corporations some of their employes have bound them in contracts with the United States to carry the mails. He has also heard that these same employes with whom he has contracted for carrying the mails have also agreed with the Pullman Car Company to transport its cars. He has further heard that there is a disagreement among the employes of these corporations about transporting these Pullman cars, some of the employes being opposed to carrying out the contract with Pullman, but all being in favor of the full and faithful carrying out of the contract to carry the mails. The dispute among the employes became so great that one set of employes declared that they would not work on a train of which a Pullman car constituted a part, alleging as a reason that Pullman is starving his own laborers and they will not countenance this. Thereupon the other set of the corporation employes declared that without Pullman cars mail trains should not move.

Thereupon, our "Uncle Samuel" said in a fatherly way: "Now boys, I have provided courts in which may be settled all controversies about the transportation of Pullman or any other cars, but my mails must not be delayed. You are all agreed about carrying my mails. Carry my mails and I will look into this Pullman boycott by means of the courts and will also examine as to any fracture of the inter-State commerce

laws. But the public business must not be delayed on account of this Pullman matter about which you are quarreling and which is insignificant when compared with the transportation interests of the whole people. Carry the mails, I say, and as much else as you are agreed upon until my courts have investigated the other matter and then I will direct as to that."

Did our "Uncle Sam" say that?

FROM STATE SOVEREIGNTY TO PATERNALISM.

Compared with the slow progress shown by the history of organic changes in society, this country is making a remarkable record in the rapidity with which it has progressed from the condition of separate colonies of Great Britain to its present condition of a centralized government. A stand was made over thirty years ago by the advocates of "State sovereignty," and the appeal to arms resulted very naturally in the establishment of the doctrine that the nation is paramount and its power supreme. This doctrine has been accepted, not without considerable protest from an old school of politics whose affiliations were almost without exception found with the party which elected the present administration. Thinkers had long ago observed that the Jeffersonism of Grover Cleveland was of such a far-away character as to have no resemblance to the original article. When the occasion arrived, against the protest of the Democratic Governor of Illinois, the President, almost without hesitation, constitutes himself a national chief of police and directs, through the army, the quelling of a mob in the city of Chicago.

The great majority of the people of the United States make no objection to this, and the Attorney General of the United States explains that the opposing doctrine went down in the throes of the late war. If there are dangers in such centralization as this indicates they are passed over lightly by the people who are coming to regard State lines of little consequence, except for geographical description, and to look more and more to the general government as a protecting parent, and to expect that ere long it will assure to every inhabitant not only the right to life, liberty and the pursuit of happiness, but also to work and to be clothed, fed and housed.

Progress thus far has been rapid, and this fact is greatly emphasized by the fact that the extension of the government's power to the execution of police duty in time of peace has occurred under a Democratic administration. How rapidly will be realized the further tendency towards governmental paternalism in industrial affairs and by what party, is, perhaps, to be determined only by the surprises of the future.

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Governor Altgeld, of Illinois, made to President Cleveland a vigorous protest against the use of United States troops in quelling the mobs in Chicago. The Governor claimed that it was something like an invasion for "Uncle Sam" to order his soldiers to duty in his State without invitation from State authorities. Little attention was paid to the protest.

In answer to many inquiries from those who have received one number of "Picturesque America," would say, that any subscriber who has sent us \$1 for subscription will receive three other numbers of the work from us upon receipt of one more dollar for a year's subscription for any one whose name you choose to send. By a little work in any locality several subscriptions can be obtained, and for each one, accompanied by a whole dollar, the sender will be entitled to receive from us three numbers of "Picturesque America." In sending to us always report what number or numbers you already have, and the numbers you claim.

NOT OURSELVES ALONE.

There are those who assume that the unfortunate situation of industry in this country is peculiar to their own vicinity or State, or at least to the United States; that it just happened to come about and could not have been avoided, and that it will some day also "happen" to be succeeded by happier and more prosperous times. In a valued English exchange, *Bell's Weekly Messenger and Farmer's Journal*, the oldest agricultural journal in England, we find the following opening of the leading editorial in the number of June 18, 1894:

"Upon turning over the report recently issued by the local government board upon the subject of local indebtedness, we find some very strange facts, as well as some unpleasant reading. At the present time it appears that various local authorities owe no less a sum than £207,500,000, and, what is still more serious, 30 per cent. of this sum has been added during the last ten years. If we separate London from the rest of the country—and it would, owing to the great difference in the circumstances, hardly be fair to include the metropolis—we find that at the present time the average locality is indebted to the extent of £1 7s. 2d. for every pound of ratable value under its jurisdiction."

Another younger, not less vigorous, and equally candid exchange, *The Cable*, also published in London, contains in its leading editorial of June 23, 1894, a feeling description of the situation in a large tract of country which lies between the Great Eastern railway and the sea, of which it says:

"A larger proportion is every year being driven out of cultivation by the inexorable combination of decreasing prices and increasing taxation. It is a scene to which it would be difficult to find a parallel in the whole range of our agricultural experience. The contrast between the vast wealth of the metropolis and the poverty of the abandoned fields, which lie at its very gates, seems to have produced a very painful impression upon the Commissioner himself—an impression which was greatly heightened by the recollection of his former visit. He came to Essex in 1875, and everywhere his gaze fell on smiling corn fields, a happy, industrious population, well-fed and well-housed, with all the indications of wealth and prosperity. He returns in 1893 to find a barren wilderness, abandoned—as if plague-stricken—by its former inhabitants to desolation and despair."

"Merrie England" mortgaged almost to the limit! Farms in "Merrie England" abandoned, as if plague-stricken, by its former inhabitants, to desolation and despair! Truly calamity is not in Kansas alone, not in the United States alone; and if our inquiries were extended to the continent of Europe we should find it there, too. But since 1875, this change has taken place in "staid old England" and the "abomination of desolation" has settled with its despair! In England local provincial indebtedness has increased 30 per cent. in the last ten years!

Who hath sown these tares? Evidently an enemy hath done this.

Possibly it is too late for regrets, but it should not be forgotten that in the name of honesty there has been for a quarter of a century a persistent and systematic increase in the value of the unit of money with its converse of lowering prices of products, making it an extraordinary circumstance of any productive industry—unless especially favored by legislation—should yield a product worth as much on the average as the cost of production. Why, then, should not agriculture languish in England, farms be abandoned there as well as in Massachusetts and mortgages prevail the world over? An enemy hath sown the tares of contracting values and the harvest plagues the farmer everywhere.

But the farmer is not alone in this distress. The primary events which led to the great Pullman boycott, with its attendant crime, pillage, fire and blood, are ascribed to decline in prices of cars. The suffering from inability to obtain work which has appealed to humanity in every city and town throughout the world is a result of the

steady, never-ending decline in prices, or what is the same thing, the advance in the purchasing power of money.

Some may imagine that this woe is at least a great ways off and that it is greatly magnified in the telling. In the *Kansas City Star* of July 6, an editorial opened with the following paragraph:

"Three thousand men stood at the junction of Independence avenue and Porter road yesterday morning asking for work on the construction of a sewer. Fifty men were chosen. Twenty-nine hundred and fifty men turned away and went home where anxious wives and hungry families were waiting, and greeted the faces at the door with the old heavy look of disappointment. If the method of computing population from heads of families is correct, then nothing is more certain than that 12,000 people in Kansas City are in want of work."

These men are not strikers; they are not Coxeyites; they are not tramps; they are not vagabonds—but they are liable to suddenly become desperate, to pillage and apply the torch as did the desperate thousands in Chicago at the very time the *Star's* press was printing the paper containing the above pathetic statement of fact.

But like the desertion of farms, the evil of idleness, this story of want is so prevalent in the countries of the old world as to scarcely elicit attention.

The evil may have grown to such an extent that a remedy cannot be found short of revolution. There is no condition so dangerous to society as that in which large numbers are in idleness and want. But surely enough has been seen to call a halt on the process of increasing the value of money under the plea of an "honest dollar." The restoration of silver to its former place in our coinage may not remedy the difficulty but it would be a step in the right direction, and possibly at least stay our rapid progress towards revolution.

THE DEMOCRATIC CONVENTION.

The State convention of the Democratic party of Kansas was held in Topeka last week. The following ticket was nominated:

For Governor, David Overmyer, of Topeka.

For Lieutenant Governor, Sidney G. Cooke, of Herington.

For Associate Justice, J. D. McCleverty, of Fort Scott.

For Secretary of State, E. J. Herning, of Sumner county.

For Attorney General, James McKinstry, of Hutchinson.

For Auditor, W. E. Banks, of Russell county.

For Treasurer, Barney Lantry, of Strong City.

For Superintendent, M. H. Wyckoff, of Atchison county.

For Congressman-at-Large, Joseph G. Lowe, of Leavenworth.

The platform declares for strict construction of public powers; local self-government and personal liberty;

endorses President Cleveland; reaffirms the Chicago platform, and especially emphasizes its denunciation of the protective tariff; favors income tax; declares for bimetallic currency and free coinage of both gold and silver without discrimination on the ratio of sixteen to one; favors appropriation to test irrigation; recommends a non-partisan immigration commission; denounces all attempts to make religious convictions a test for office; demands equal protection for both capital and labor; affirms the right of wage-earners to organize for peaceable protection of their rights; commends the course of Senator Martin; favors liberal pensions to old soldiers and endorses the course of present Pension Commissioner; favors laws for improvement of the public roads; demands the repeal of all laws for the issue of bonds, except for the construction of public buildings and free bridges on public roads; favors a constitutional convention; demands the resubmission of the prohibitory amendment; opposes woman suffrage; denounces the returning board proceedings of the last general election and the "unlawful larceny of the lower house of Legislature" and the subsequent disgraceful proceedings.

The only important contest was on the free silver plank, which resulted in the substitution of the minority for the majority report of the platform committee.

Experiment Stations.

EDITOR KANSAS FARMER:—The man who owns a thousand or ten thousand acres of land and can farm it by hired help or by tenants, can afford to make experiments for the purpose of determining the relative values of this or that method of culture or of kinds of land or manure or forms of implements. It is, however, assumed, from the experience of France and sundry of our own States, that the cultivation of small farms by their owners—yeomen, or as they are called in the north of England, statesmen (i. e., estatesman)—is the way to insure a more general prosperity of an agricultural people. The holders of small farms are, however, not likely to have the capital or time for costly experiments, and their habits of life are mostly against their taking interest in any other than proved methods of culture. It is then not an illegitimate function of the government of an agricultural State to make experiments for farmers and spread a knowledge of the results among the community.

This is conceded generally, and Kansas has had for thirty years her Agricultural college at Manhattan, endowed both by State and national governments, for teaching agriculture and on a limited scale experimenting with new methods. Added to this, now for several years, there has been an experiment station located at the Agricultural college with a national endowment now amounting to \$34,000 per annum. Besides this there has been a station for experiments in grasses at Garden City, and for seven years there has been—at Ogallah and Dodge City—stations for experimental forestry. The grass station has been recently discontinued.

Much public attention has been given to these experiment stations, but it has been more or less spasmodic, and when politicians have given attention they have not always mastered the facts of the case and have given unwise judgments.

Attention should be given to these stations by three classes of the community, viz.: (1) Farmers, because they may be thereby warned to avoid costly mistakes or shown how to profit by useful knowledge. (2) Merchants, bankers and others, resident in towns, because the upbuilding of their own communities and their own personal profits depend on the prosperity of their rural neighbors. (3) Politicians. This term I use to include all who, as members of Legislatures or holders of offices, are in counties or States directly concerned in the imposition of taxes. There is a bad sense to this word, and those to whom it is applicable should be interested in this subject as well as those to whom the work of practical politics is an honest business.

We ask the attention of these classes at this time. The politician is the last one who will care for it, and he is the last one who should care for it.

The farmer ought to inform himself on the subject in this way. He should decide these questions: (1) Are the experiments being made of value to me? (2) Is the value such that I am justified in asking the State—that is, the tax-payers—to pay for them? (3) If the value at present is doubtful, would a change of methods or management at the stations give them the desired value?

Merchants and other citizens should decide the same questions, and then the politicians will obey the will of the community as expressed in farmers' meetings, in the public press and at the ballot-box.

The experiment station at Manhattan has, under pressure from without, this year established one or two branch stations in western Kansas. The writer has visited one of these, north of Garden City, and good work is being done there. The center of the population of Kansas, several years ago, passed west of the meridian of Manhattan. It would have been well if the authorities having charge there had at that time recognized that experiments at Manhattan on methods of cultivation had slight value for one-half the population of the State, as the climatic conditions west of Manhattan are essentially different from those to the east. If at

the time the forestry stations were established one-half of the government experimental endowment had been transferred to operations on those and other stations in the western half of the State, some useful knowledge would have been already available, and instead of pressure which may have in it some appearance of hostility there would now only be words of praise for the managers of the government funds. Still it is yet open to these managers to volunteer much. The more they offer the less they will be pressed. The climatic conditions are so different west of the 98th meridian from those to the east of the 96th, that fully half of the experiments should be made in reference to the more newly settled region.

There should be care in the selection of stations. Many considerations go to a proper choice. In a former letter I pointed out that the two forestry stations have essentially the same climatic conditions. One ought to have been differently located. Mr. Thoburn emphasized this point in your issue of June 20. I suggest that one of the forestry stations be given up entirely to experimental farming, mainly with irrigation, retaining only enough of tree culture to show a successful wind-break and a good orchard on the plains. The experimental irrigation station at Garden City bids fair to do good work, but it is a wonder why it was placed there. Every lesson to be learned there is already demonstrated all round the station. The station should have been at Ulysses, in Grant county, or on the north line of Finney county, or in the valley of the Whitewoman, in Greeley or Wichita county, or elsewhere, distant from the present irrigation centers. The experiment should take wild land as well as that which has been long in tith. The demonstration that there is water in sufficient quantity for irrigation under the high prairie, at eighty or one hundred feet deep is important. It was not necessary to show that at thirty feet there is abundance where it has been used for years.

The writer has been giving the question of the water supply of the plains considerable attention for more than a decade, and can indicate the probabilities in many parts of western Kansas. The probabilities will become certainties by the work of the settlers and the definite knowledge may be sooner acquired by the State making the experiments in well-selected places and settlement would then at an earlier date bring results beneficial alike to farming and civilization.

Next winter the politicians at Topeka will have the opportunity to deal with the whole question of experiment stations. The other classes of interested citizens should see to it that during the political campaign the politicians are properly instructed in the premises. There need be no hasty legislation. Let the voters think on this subject and write to every member of the Legislature, every State official, every County Commissioner who shall be elected next November, and if the number of experiment stations should be increased let it be done intelligently. If it is well that all the State interests of this kind be under one central control, let the controlling body be strong but not large. If the State Board of Agriculture need to be put in definite relations to the other agricultural interests let it be done on broad grounds. If a State irrigation bureau be established, let its powers be ample and well defined.

Let all these things be intelligently and earnestly discussed before Christmas and then a Legislative committee can formulate the will of the people so that the greatest good can be done at the least cost. Let the eastern part of the State understand that the development of the west means lighter taxation and prosperity for all.

The writer can honestly wish that all persons shall discuss these matters with as friendly a spirit towards all officials and as earnest a desire for the State's welfare as he has himself, with the assurance that then right will be done.

ROBERT HAY.

Junction City, June 28, 1894.

Get up a Club for KANSAS FARMER.

Horticulture.

Cross Pollination.

The United States Department of Agriculture has published the results of some extended investigations as to the utility of cross-pollination of fruits, more especially pears. The following are the general summary and conclusions:

In pollination work on the pear two distinct kinds of experiments have been tried, (1) simple bagging experiments, in which bags of paper, cheese cloth, or netting with meshes (ten to the inch) were placed over the unopened buds and outside pollen thus excluded; and (2) careful hand-pollinations of flowers which were emasculated while yet in bud and protected from all other pollen by paper bags. These experiments were carried on in large numbers and at four different places, viz., at Brockport in 1891, and Scotland, Rochester and Geneva in 1892. The conditions of the trees were widely different as was also the weather at flowering time. The work was done on a large number of varieties of pears, several of which occurred in all four of the series of experiments. The results under these varying conditions have substantially agreed, in most cases being remarkably uniform. The fruits resulting from the different kinds of pollen showed interesting differences, which tend to corroborate the conclusions.

It should be noted that similar experiments were tried on the apple and the quince along with the pear work. The varieties of apple are more inclined to be sterile to their own pollen than the pear. With the former, in the great majority of cases, no fruit resulted from self-pollination. The results, as a rule, however, were less clear cut than in the pear, because with most of the self-sterile varieties, an occasional fruit will set under self-pollination, and none of the varieties were very completely self-fertile. The quince, on the other hand, seems to fruit nearly as well with its own pollen as with that of another variety.

The following conclusions are, it is thought, fully warranted from the evidence which has been given, and doubtless many who read this will recall observations in practical orcharding which give further support.

1. Many of the common varieties of pears require cross-pollination, being partially or wholly incapable of setting fruit when limited to their own pollen.
2. Some varieties are capable of self fertilization.
3. Cross pollination is not accomplished by applying pollen from another tree of the same grafted variety, but is secured by using pollen from one tree of a distinct horticultural variety, i. e., which has grown from a distinct seed. Pollen from another tree of the same variety is no better than from the same tree. This failure to fruit is due to the sterility of the pollen and not to mechanical causes.
4. The impotency of the pollen is not due to any deficiency of its own, but to the lack of affinity of the pollen and ovules of the same variety.
5. The pollen of two varieties may be absolutely self-sterile and and at the same time perfectly cross-fertile.
6. The state of nutrition of the tree and its general environment affects its ability to set fruit either with its own pollen or with that of another tree.
7. Bees and other insects are the agents for the transportation of the pollen.
8. Bad weather during flowering time has a decidedly injurious influence on fruitage by keeping away insect visitors and also by affecting the fecundation of the flowers; conversely, fine weather favors cross-fertilization and the setting of fruit.
9. Pears produced by self-fertilization are very uniform in shape. They differ from crosses not only in size and shape, but also, in some cases, in time of maturity and in flavor.
10. Among the crosses the differences were slight or variable, so that their variations are not to be ascribed with certainty to the differences in pollen.
11. Self-fecundated pears are defi-

cient in seed, usually having only aborted seeds, while the crosses are well supplied with sound seeds.

12. Even with those varieties which are capable of self-fecundation the pollen of another variety is prepotent and unless the entrance of the foreign pollen be prevented the greater number of fruits will be affected by it, as shown by the study of Buffum pears.

13. The normal typical fruits, and in most cases the largest and finest specimens either of the self-sterile or self-fertile sorts are crosses.

PRACTICAL CONCLUSIONS.

1. Plant mixed orchards, or at least avoid planting solid blocks of one variety. It is not desirable to have more than three or four rows of one variety together unless experience has shown it to be perfectly self-fertile.

2. Where large blocks of one variety which blossomed well have failed to fruit for a series of years without any apparent reason it is exceedingly probable that the failure is due to the lack of cross-pollination. The remedy is to graft in other varieties and supply foreign pollen.

3. Be sure that there are sufficient bees in the neighborhood or within two or three miles to properly visit the blossoms. When feasible endeavor to favor insects' visits to the blossoms by selecting sheltered situations or by planting wind-breaks.

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The Potato.

"A potato and an ear of corn." Nothing in all the vegetable world can be more hopelessly common, homely and plebeian, yet they represent the greatest gifts of the new world to the old, gifts more valuable than gold, more precious than diamonds in their adaptability to the daily needs of mankind. The potato was first made known to Europe by Spanish explorers, but it was at the time of Sir Walter Raleigh's expeditions to this new and wonderful country that some of the uncouth, strange-looking tubers were carried to Ireland and planted on his own estate near Cork, about the year 1565. Its cultivation in the Emerald Isle gradually became general; years but added to its popularity in its first adopted home, until we speak of our own child of American soil as the Irish potato.

When first introduced into England it was planted in a few gardens as a foreign curiosity, and as such was cultivated by Gerard and described in his "Herbal" in 1597, the treatise being adorned with the author's portrait holding in his hand a branch of the vegetable covered with blossoms. Even after its culture became common it was so little prized as a table food as to be recommended only for "swine and other cattle;" but in 1663 the Royal Society, led by the alarming frequency of wheat famines, advised its general cultivation as a food for the people, and now even the roast beef of old England would lose half its charm were it not flanked by a dish of the American tubers.

The potato, however, has no right to the name it bears, except as custom sanctions its use. It belongs to the *solanum* family, but through the botanical ignorance of the early Spanish travelers it was given the same name that another American native rightly bears—the *batatas*, or sweet potato. It is said, when Christopher Columbus presented himself to Queen Isabella, on his return from his western voyage, among his offerings from the unknown world to his royal patron, were the *batatas*, or sweet potato, and whenever the vegetable is mentioned by the early writers down to the middle of the seventeenth century it is the sweet potato that is indicated.

Taken alone as an article of diet the potato proves unsatisfactory as a producer of the highest development of mind and body, as it is from 70 to 80 per cent. water, and is deficient in nitrogenous substance. But whatever it

Do not be deceived.—The following brands of White Lead are still made by the "Old Dutch" process of slow corrosion. They are standard, and always

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FOR COLORS.—National Lead Co.'s Pure White Lead Tinting Colors, a one-pound can to a 25-pound keg of Lead, and mix your own paints. Saves time and annoyance in matching shades, and insures the best paint that it is possible to put on wood.

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Clark Avenue and Tenth Street, St. Louis.

NATIONAL LEAD CO.

may lack in nutrition another true American native more than atones for—the ear of corn.—A. Lewis Wood, in *Good Housekeeping*.

Trees—The Soil.

EDITOR KANSAS FARMER:—There is no cure for tree blight. It is perhaps caused by sun-scald, a paralysis produced by the rays of the sun on an exposed limb or body of the tree, which deadens the bark and stops the flow of sap, and first kills the part above the dead bark. The south and west part of the tree is most liable during a dry time and warm sun. To prevent blight, shade and protect the body and limbs of the tree. Never trim your trees. Encourage limbs low on the tree. The best protection is green, growing leaves. When you set out a long-bodied tree, wrap it with straw or anything that shades the body and large exposed limbs. The bark of young fruit trees is thin and tender and cannot endure a hot sun. The apple and pear are natives of cool, moist climates. The old bark should not be taken from the trees. It is a protection to the inner bark. It is a non-conductor of heat and absorbs and holds moisture. See all exposed trees in their native forests. They protect themselves with the old bark. Orchards should never be plowed and the soil should be covered with some tap-root plant or a mulch of straw and coarse manure under the trees. Set trees out young. Do not trim—better if limbs start low down. Make your holes for the trees by a round stick three inches in diameter. Make your holes as deep as you wish, then fill up with coarse soil mixed with broken stones, brick-bats, etc. Set your tree about six inches in the ground and fill with coarse soil. Set your tree straight. You need not trim the roots if they spread. Tie them in a bundle and fit the hole. This will cause them to root deep. If convenient, fill up the bottom of the hole with water, as much as will soak up, but do not wet the top six inches. In a dry climate in soil that does not need draining you must not encourage surface roots. Do not stimulate your trees by clean, intensive cultivation, nor with liquid or commercial fertilizers. Do not break the original turf. If weeds are in your orchard, cut down before they go to seed and leave for mulch. Keep surface level the first year or two. Your trees will make a slow growth of top but a large growth of root. The life and health of fruit trees depends on their large and deep root system. As plants and trees take all from the atmosphere and nothing from the soil, and in addition to their own material add each year a coat of the thickness of a sheet of paper to the surface of your land, will bring to the soil from the atmosphere all the needed fertilizers, even to the color of the soil—that is, walnut trees make black soil. So every tree and plant gives its own color to soil, and the more you raise on land the richer it becomes. The great destroyer of the fertility of the land is exposure to sun, wind and washing of water. Productive land is a physical arrangement of its soil grains and not a chemical condition. The fertile land is that land that absorbs most water and holds it longest. The land is a laboratory and not a mine. The mechanical disturbance of good land is

always an injury. See the condition of all lands in primeval forests and prairies where constantly covered and shaded. Even soil under a board or stone is made fertile solely from atmospheric action. The continuous plowing of land in western Kansas will make it a desert. It heats the surface, increases force of wind, lessens the rainfall in the summer months. The dust storms destroy the granulated soil and reduce it to a fine dust. No trees or vegetation can grow in soil too fine. Productive land is coarse and granulated. B.

St. Joseph, Mo.

[This correspondent advances several ideas which vary from commonly-accepted tenets. They are not unlikely to call out vigorous discussions.—EDITOR.]

A person is prematurely old when baldness occurs before the forty-fifth year. Use Hall's Hair Renewer to keep the scalp healthy and prevent baldness.

Climate and Crops Just Right.

Oklahoma has thousands of acres of the finest farming land in the world, waiting for you or anybody else with a little cash and lots of gumption. Climate crops are just right. Farms will cost more next year than this. To find out if this is the country you want, ask G. T. Nicholson, G. P. A., Santa Fe route, Topeka, Kas., for free copy of Oklahoma folder.

LUMBER Joists, Sheeting, Flooring, Stud-ding, Timbers, Boards, Sash, Doors—All kinds Building Material. Purchasers of World's Fair Buildings. Corrugated Iron Roofing \$1.50 per square. Send bill for our estimate at once. CHICAGO HOUSE WRECKING CO., 3005-39 E. Halsted St., (6 Blks. North of Union St. Yds.) CHICAGO, ILLS.

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Now but send a postal card to-day to
BUREAU OF IMMIGRATION,
Spokane, Wash. for printed information
about the opportunities and special offers given **FARMERS** by this great and prosperous state.

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and one Diploma for Beauty, Strength and Cheapness. Over 50,000 of these vehicles have been sold direct to the people. Send at once for our complete catalogue (D) of every kind of vehicle & harness, also book of testimonials, they are free.
"A" Grade, \$27.50. "A" Grade, \$44.
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ALLIANCE CARRIAGE CO., CINCINNATI, O.

"The Great Leak On The Farm"

is a valuable pamphlet relating to corn fodder, and also descriptive of that wonderful machine, the "Keystone" Corn Husker and Fodder Cutter, combined.

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(Mention this paper.)

In writing to advertisers please state that you saw their advertisement in the KANSAS FARMER.

In the Dairy.

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

The General-Purpose Cow.

Beef-production and milk-production in the same animal are often useful to the farmer, but should not be the aim of him who desires to receive the greatest amount of profit from the dairy. A first-class beef and milk and butter cow, combined in the one animal, is rarely, if ever seen; either the beef tendency will prevail, or the dairy qualities. All animals require so much food for support, and the balance that they are able to digest goes to keep up heat in the body and to the production of fat. This fat will not be evenly distributed—half in the animal frame and half in the milk-pail. If the animal has been bred long in the line of beef-production rather than milk and butter, the greatest amount of this fat will go to beef, and the reverse. The first-class dairy cow cannot be made very fat while in good flow of milk. She cannot digest enough rich food above the amount required to maintain support to deposit a large amount of fat on her bones and maintain a heavy flow of milk at the same time. The general-purpose cow, then, is not a strict reality, though there may be good milking strains of beef breeds, which are useful where beef is the main object.

Progress of "Oleo."

The oleo fraud seems to be making greater progress than ever, both in home and foreign markets. The exports of oleo and of oleo oil during May were much larger than during the same month last year, while for the eleven months ending with May, the total exports of these two forms of fraud were almost 115,000,000 pounds, valued at over \$11,000,000. During the same period, honest butter was exported to the value of only \$2,000,000, while our cheese exports were valued at \$5,500,000, both together forming but about half the quantity of oleo exports. We have reason to believe that in our domestic markets oleo is taking the place of butter to an even larger extent. The cities of our Southern States, which formerly constituted such a fine market for large amounts of butter from Iowa and other sections, are now largely controlled by the bogus butter trust. The oleo people have been printing long articles in the leading dailies East and South about the merits of their article, and claiming that dairy butter was not fit to eat. The sales of oleo in original packages are being pushed in New York and New England in defiance of State laws. Meanwhile the markets for dairy products are depressed and Congress shows no disposition to enact Senator Hill's bill providing that oleo in original packages shall be subject to the State laws. They might at least do this.—*Ex.*

Says Oleomargarine is Better Than Butter.

Senator Manderson says oleomargarine is better than butter. He buys it in preference himself. To such base uses has he come at last. In the June number of *Frank Leslie's Popular Monthly* there is an interesting article on "Horses in Trade, Traffic and Transportation." On page 650 in the aforesaid article, occurs the following paragraph:

"Not the least interesting feature in New York is the value of the dead horse that one sees daily fallen by the way in our gutters and on our pavements. What it ultimately will produce in commerce is between \$25 and \$30. There is not a part of the animal that has not mercantile uses. Out of the hide are wrought gloves, boots and shoes; the hair goes into cloths and mattresses; the bones into buttons; the flesh into oil fat, oleomargarine and butterine; the hoofs into glue; the intestines into delicate membranous pouches for drugs and medicines. And it can scarcely be an agreeable sensation to those of the American body politic who swear their gastronomical faith on a plate of buckwheat cakes ordered from the restaurant of the period, with a side partner of three strata of butterine

alongside for concurrent consumption, should he stop to reflect that the fleshy part of the dead horse, seen perhaps a week previous lying on Broadway, was the basic property of the dressing applied to his provender."

In so far as Senator Manderson prefers for his own use this dead horse and other foul fat decoction, we have no words to offer. That is a matter of taste. But when he uses his power and privilege as a law-maker to build up, by sanction of law, a fraud and vile counterfeit, to the great hurt and injury of a legitimate agricultural industry, and, moreover, adds insult to this injury, we may be permitted to say that he is not a fit representative of the people of Nebraska. If the dairy farmers of that State have the spirit and courage of true American citizens they will make his unfitness conspicuously manifest. Party considerations have no business to govern in this matter. Let every creameryman and dairy farmer in that State declare outright that they will vote for no man for the State Legislature who will not stand up against such treachery to the cause of honest agriculture. That will very quickly make an impression that will be felt. They owe it to their own manhood to do this.—*Hoard's Dairyman.*

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Dairy Notes.

Dairy products are the only foods that can be purchased that have no wastes, and in consumption all are digested.

If you wait until the herd begins to shrink in milk yield before undertaking to supply additional feed it will be too late.

As grass is our cheapest and best stock feed for the summer season, it is well to manage to make the most of it; arrange to have it as early and as late in the season and as much of it all the time as possible.

The worst men are those who never try to improve upon anything that they are doing; this is certainly true among dairymen. Much in the way of improvement can be learned from others while there is much we can learn ourselves.

The reason for not disturbing milk when the cream is rising, is that the cooling of the milk causes currents to form in the fluid, the end of which is to deposit the fats at the surface and every disturbance of the milk upsets this process.

When both are given good treatment the cow which calves in the fall gives as much milk during the year as the one that calves in the spring, while the milk of the cow that calves in the fall will, in nearly all cases, bring in the most money.

The smaller the butter globules can be made in bringing the butter the nearer free they will be of buttermilk. When the grains of butter come as large as bullets, no working or washing can free them from buttermilk like the method of fine granulation.

While sometimes good butter is made without either good milk or care, by mere accident as it were, but in order to have any assurance of success from the start not only are good facilities necessary but to these must be combined both skill and carefulness.

The character of the fats may be changed by poor or rich food, but the relations of solids to each other will be closely uniform in all of the ups and downs of the feeding. Butter fats are not fed directly into the milk but are the products of the digestive organs.

The system of paying for milk according to its butter fat content is not limited to the United States. England annually buys many Babcock machines of our manufacturers, and buying by the test is becoming the rule in Australian and New Zealand butter factories. Wherever the Babcock test

goes there results a weeding out and improvement of the dairy stock of that locality and a consequent lessening of the cost of dairy products.

The butter aroma appears in the butter as the result of the ripening process. Sweet cream butter does not have this delicate flavor, and while there is a demand in our market, perhaps a growing demand for sweet-cream butter, it never develops the delicate flavor known as the butter aroma.

Much butter that would otherwise be of a fine quality is injured by overworking. The ladle, paddle butter-workers, and often the naked hands are responsible for greasy, grainless, streaked butter. Not only is much labor wasted by unnecessary working but the quality is very seriously injured.

A correspondent of one of our exchanges says that bloody milk is caused by inflammation of the udder, and he finds that the best remedy is fluid acornite, fifteen drops, each day for three days; then miss three days and repeat, which he tried at one time with good success. He kept the cow another year and saw no more bloody milk. He has tried it on two other cows since that time and produced a cure.

A writer in the *National Stockman* describes his method of preventing a cow from sucking herself, as follows: "I got a good stiff wire about eight or ten inches long and sharpened at both ends and thrust that through her nose and brought the ends together and gave them one twist close up to her nose, then bent the points in shape of a two-tined fork. Found it the best thing that I had ever tried and had no more trouble with the cow. Use white metal wire if you have it." In a conversation with one of our readers he said he thought the habit arose from the uncleanness of the cow.

"What sense is there in the Texas farmer or dairyman feeding a lot of scrub cows that give less than a gallon of milk per day and make a pound of butter per week?" asks a Texas exchange. What use is there, we may ask, in farmers or dairymen in any State in the Union doing this? A generous milker eats no more than a scrub and gives several times as much milk. Farmers have as much sense as any other class, and it is inexplicable that so many of them follow methods that no sensible man in any other business would for a moment think of pursuing. A brighter day, however, is dawning, and the old foggy farmers are gradually learning that in order to keep up with their more progressive neighbors they must adopt other and better methods than those that have been in vogue for a century past.

Constipation, an exceedingly dangerous condition of the bowels, is nearly always the result of carelessness and inattention to the calls of nature. To correct irregularities and restore healthy movements, the best aperient is Ayer's Pills. They are easy to take.

See Chicago Sewing Machine Co.'s advertisement in next week's issue.

Leasing Oklahoma School Lands.

All persons wanting to lease school land in Oklahoma will be rewarded by sending for a free sample copy of the HOME, FIELD AND FORUM, Guthrie, Okla., the leading agricultural paper of Oklahoma Territory.

Mountain and Ocean Resorts of the East.

Are readily reached via St. Louis and the Vandalia and Pennsylvania Short Lines. The only route to Cresson and other cool retreats in the Alleghenies. Solid vestibule trains leave St. Louis daily over these lines for Cresson and Altoona, running through to New York, where connection is made for the White mountains, the Adirondacks, Mt. Desert Island and places of summer sojourn in the mountains of eastern New York, Vermont, New Hampshire and Maine. At New York connection is also made for Fall River, Newport, Narragansett Pier, Martha's Vineyard, Nantucket and famous watering places along the Atlantic, to which passengers via Vandalia and Pennsylvania lines have choice of all-rail route or palatial steamers of the Fall River line from New York. Atlantic City, Cape May, Long Branch, Ocean Grove, Asbury Park and summer havens along the New Jersey coast are on divisions of the Pennsylvania system. Any desired information will be cheerfully furnished by J. M. Chesbrough, A. G. P. Agent, St. Louis, Mo.

The Poultry Yard

Overcrowding.

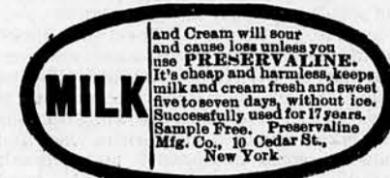
The competency and experience of the writer of the following is vouched for by *Southwestern Farm and Orchard*:

"The bane of poultry-keeping is overcrowding. It is overcrowding that destroys most of the flocks; and it is overcrowding and carelessness that scatters dead fowls about in the back alleys of the city and village.

"Overcrowding produces but few fine fowls, while it multiplies culls. Overcrowding makes a large feed bill and an empty egg basket. Of all the evils that attend poultry-raising, to beginners, overcrowding is the worst. It is the rock that has stranded more beginners in the poultry business than all else besides.

"A party said to us a few days ago that he was going to raise 500 chickens this season. Now this party will not raise the one-fourth part of 500, because he has not the proper quarters to do so. In raising that many chickens one should have them divided into small flocks in order for them to do well. If there should be fifty hatched at one time they would do very well to remain in one flock for not over three weeks, and then divided into broods of twenty-five. Some people have a tendency to overdo whatever they undertake; they go at anything with a vim that in a short time wanes; they come up against difficulties that must be overcome, if their object is successful, and almost always their remedy is only multiplying and making more difficult the attainment of the object desired. The poultry business is one you cannot crowd and be successful; it's no use to try, for it is only time and money wasted. It is a violation of nature. It is overdoing the thing, and nature soon asserts herself, and in asserting herself she goes back to the first law of propagation and declares for the survival of the fittest. So many chickens cannot live together and thrive, so the work of extermination is begun. A weak chicken drops out to-day, another to-morrow, then perhaps there is a day or two of peace and then two or three more go at once. And so it continues until the flock is the size that nature says may live together and thrive, and then all goes well. In the battle for existence those that survive are more or less marked by the conflict; some are stunted in growth and others are deformed, and only a few can approximate to anything like perfection. This is no fancy sketch but only a portrayal of facts. Every person who has attempted too much in the poultry line has experienced these evil results. It does not prove that large numbers of fowls cannot be raised on the ranch or farm, and neither does it prove that one person cannot raise a large number, but it illustrates plainly where all may fail, and what we must do to attain success. We must keep our fowls both old and young, in small flocks at all times to obtain the best results from them. We must not crowd them into little pens, neither should we crowd them all into one flock and give them a ranch to range over, for eventually the latter would prove the road to destruction. We should divide them into flocks, twenty to twenty-three, and give each flock a separate run large enough to afford them plenty of room. If we cannot keep our fowls separate as they should be, we would better content ourselves with only a few, and escape the disaster and disappointment of overcrowding. We must do this to have our flocks business flocks. We keep fowls for the money and profit in them, and if any profit is desired from them they must be kept in a business condition."

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The Family Doctor.

Conducted by HENRY W. ROBY, M. D., consulting and operating surgeon, Topeka, Kas., to whom all correspondence relating to this department should be addressed. Correspondents wishing answers and prescriptions by mail will please enclose one dollar when they write.

Medical Fakirs.

A few years ago Hon. D. W. Wilder wrote an article on "Fakirs," with so many good points in it that we take pleasure in reproducing appropriate portions of it here.

He says:

"When I go home on Saturday nights the first sight that greets me in the pleasant town is a crowd of people surrounding a wagon, near the court house square. In the wagon stands a voluble man—an orator. Above his head is a glowing flame which gives forth a black column of smoke. By the side of the orator sits a banjo-player and song-singer, clad in a flaming scarlet jacket.

"These fakirs, as the people call them, travel from town to town. In Topeka they stand near Rowley's on Sixth street; in Atchison, on Commercial, near the *Champion* office; and in St. Joseph, always on Market square.

"The orators always have long hair and dress in black; they are proud of stove-pipe hats. The outfit is not always the same. Some fakirs drive a pair of horses, have a fine carriage and take around with them a band of singers. 'When the Roses Bloom Again' got into the boys' whistles all over the State from a dashing band of this sort that raided Kansas about ten years ago.

"What do the fakirs do? They cure diseases—all diseases. They take cash or bankable notes for pay, the fee being gauged by the victim's ability to pay. It was Rusty Joe's plan, two years ago, to ask the patient who called at his hotel during the day—'office hours'—to ask him how much he was worth. If the Kansas caller owned a good farm Joe would demand a fee as high as \$500, and get it.

"The fakir also sells medicines, usually of his own make, from an Indian or oriental recipe. They are bought eagerly by healthful persons, taken with delight, and give satisfaction. Nearly all fakirs pull teeth, without pain. The person who parts with his teeth does so with pleasure, talks a good deal about it that evening, and often dwells upon it with delight for months and years afterwards. Events are dated from the time when Shabby Dick pulled the tooth, without pain.

"It is to be observed that some of the goods sold by these mendicants are needed by the persons who buy them. Spectacles, cloths, stationery, everything of value sold by the peddler, can be secured of the local merchant at prices equally low. The citizen trader is always there; if the goods are not what he has said they were he will take them back. This home dealer you know well; he is a reputable citizen, pays his taxes, supports the school and the church, patronizes his neighbors, and does all in his power to build up the town, the county and the State. All this you know and admit. Nine-tenths of the dealers in your town are men of this stamp. They never sell spurious wares for honest goods. The same is true of the medical profession. You have educated, skillful, experienced physicians. Every day and hour they are moving among you and carrying comfort and joy into afflicted households. You, yourself, have called them when stricken with disease, and have gladly, gratefully, confessed your debt to them.

"It is also to be observed, and cannot too frequently be brought to mind, that the fakir does not come again. Nasty Jack succeeds Cunning Tim. Rusty Joe comes not back when the roses bloom again. All that you ever hear of him is that he has been arrested in a drunken row or put in jail in some distant city. The goods that he warrants, the cures that he guarantees, never again see his shining stove-pipe or hear his smooth and oily tongue. He is lying, cheating, stealing, in some other town and State."

The above gives an excellent pen-picture of the medical mendicant, the medical tramp, the medical orator, the medical "run-round" and all-round fakir and swindler who goes from town to town and through divers country places plying his art of swindling, cheating and lying.

As there must be a sufficient reason for everything, so there is a most excellent reason for the existence and the vocation of the medical fakir. That reason is that he thrives, his business is prosperous, he goes out of town better off than he came to it; his pockets bulge with silver and gold and checks and bankable notes, and all because the people heard his lies and believed them. If any citizen should tell them such gigantic falsehoods about goods, wares and merchandise, or the virtues of bread pills and scented water, they would be laughed to scorn and hooted out of town. But the wily fakir, who is a professional liar and knows he could not possibly make his salt by telling the truth, comes in with a band

of music and goes out with bulging pockets, while the honest local trader and the professional man who has skill, as well as honesty, may go begging while the fakir fattens and his victims have no money left with which to pay the skillful physician who is called after the fakir goes, to save some of the wrecks he has created.

New Books.

New books are only new when there is something fresh and new in them, and here is one containing both old and new things. It is a trip around the world, by Rev. Francis E. Clark, President of the National Society of the Christian Endeavor. No book written on the run around the world could have all new matter, and no book written by a live "globe-trotter" should be made up of the stale platitudes of literary mummies. Here is a book by a man who, having eyes to see, saw; who, having ears to hear, heard, and who, having "skill in the turning of phrases," turned his observations to good account for his readers' benefit. And, quite unlike many other travellers, he took his wife along to see what he overlooked, and between the two, people who can only travel with their eyes and imaginations are favored with a fresh "all-round" view of the belted planet on which we live.

A. D. Worthington & Co., of Hartford, Conn., have put this delightful glimpse into many lands into the hands of the bookmaker's press.

Peeping into this new picture of the world, it is hard to tell which you want to shake hands with first, the handsome Hindoo bride or old Pharaoh, who was recently dug up and photographed, and whom some great hypnotist may yet succeed in waking up from his 3,000 years' slumber. He it was who oppressed the children of Israel far worse than Havemeyer, one of the Israelitish descendants, is now oppressing every man, woman and child in America who has a "sweet tooth," by his sugar trust, or Rockefeller by his great oil trust.

Here is a book that is fresh and new
As a newly-minted eagle,
And from title-page to its quaint "adieu"
The book is more than regal.

"Around the World," says the title-page,
Through every tribe and nation,
And his kodak caught the latest glimpse
Of men in every station.

The high or low, or the rich or poor,
From the coolies pumping water
To Ramesis, old Egypt's King,
Father of Pharaoh's daughter.

The drunken men in the opium den,
Devoid of care or pother,
The man who slid down the pyramid,
And Pharaoh's mummy father;

The crocodile on the ancient Nile,
The sly old sphinx beside it;
The donkey in Jerusalem
With the graybeard priest astride it;

The Sultan's tomb with its gleam and gloom,
And the handsome Turkish woman
Before her glass, like a Yankee lass,
Ah, me! how very human!

The howling dervish, the dragoman,
The juggler, with his casket;
The fakir man with his pipe and fan,
And the cobras in his basket.

In her mother-in-law's jinrickisha,
With a man to pull the wagon,
The fair young Jap, without hat or cap,
Goes like a flying dragon.

Thus the kodak fiend, as he travelled, gleaned
And lighted up his story,
With scenes as fair as are anywhere
In lands that are old and hoary.

SPECIAL FOR JULY.—For new subscribers, both the *KANSAS FARMER* and the *Topeka Weekly Capital*, to January 1, 1895, for 50 cents, club-raiser to keep half the money.

SPECIAL FOR JULY.—For new subscribers, both the *KANSAS FARMER* and the *Topeka Advocate*, to January 1, 1895, for 50 cents, club-raiser to keep half the money.

International Fruit Exhibit.

The United States Department of Agriculture is sending out the following notice of the proposed Russian international fruit exhibit:

The Russian government proposes to hold an International Exposition of Fruit Culture and Products at St. Petersburg, under the auspices of his Majesty the Czar, beginning September 22 and closing November 12, 1894.

The attention of horticulturists, nurserymen and all interested in the object of said exposition is invited to the following synopsis as presented by the Society of Fruit Culture of Russia:

(1) The International Exhibition will be held with the object of showing the present condition in Russia and other countries of the cultivation of fruits and vegetables, of viticulture, the cultivation of medicinal plants, horticulture, and of the manufacture of their products.

(2) A congress of pomologists will be convened simultaneously with the exhibition.

(3) All persons interested in the progress of horticulture and pomology, both in Rus-

sia and other countries, are invited to take part in this International Exhibition.

(4) The exhibition will comprise the following sections:

(1) Fresh fruits; (2) fresh vegetables; (3) dried fruit and vegetables, preserved or treated by other processes; (4) wine, cider, perry and other fruit beverages; (5) hops and medicinal herbs; (6) seeds; (7) fruit trees and shrubs; (8) horticultural implements and appliances, and technicality of production; (9) literary, scientific and educational accessories, collections, plans, etc.

(5) Those who may be desirous of taking part in the International Exhibition or in the proceedings of the congress are requested to make timely application for further information to the offices of the International Exhibition of Fruit Culture, 1894, at St. Petersburg, Imperial Agricultural museum, Fontanka, 10.

The Russian Minister, Prince Cantacuzene, has communicated to Secretary Morton the following concessions authorized by the Russian government in favor of American citizens participating as members or exhibitors:

(1) Goods will be admitted free of custom house duties with the condition of their re-shipment. Duty will be exacted on goods which remain in Russia after the term of two months from the day of the close of the exhibition.

(2) Plants, fruits and vegetables (except the American potatoes and grapes) will be admitted without detention at frontier custom houses, upon certificate by the officers of the custom house at St. Petersburg, and into the building of the Exposition, under the condition that they shall be exhibited not later than the 20th of September, and shall remain at the Exposition until its close.

(3) The above-mentioned goods are entitled to a reduction of 50 per cent. from the usual tariff rates on the lines of the Russian railways both ways—to St. Petersburg and back; any other goods sent to the Exposition will be entitled to pass without any charge, on the Russian lines, if addressed to the points whence originally shipped.

(4) The members attending the congress are also entitled to free transportation on their return trip from St. Petersburg.

However extensive your own experience and knowledge may be, don't be afraid to add to your stock by learning all you can from others.

Drs. Thornton & Minor,

Bunker building, Kansas City, Mo., the well-known specialists in the treatment of all rectal troubles, have established a principle in connection with their ever-increasing clientele that is well calculated to inspire confidence in their integrity and ability to perform to the last degree that which they promise when assuming to cure their patients, and that is, they decline to accept a fee until they have clearly demonstrated that a cure has been accomplished. Thousands testify to the efficiency of their treatment. Another specialty of their's is diseases of women, and of the skin. Beware of quacks. Ask for their circulars, giving testimonials of leading business men and high officials—they contain special information for the afflicted. Address, DRs. THORNTON & MINOR, Bunker Building, Kansas City, Mo.

The world's crop of rice is double its crop of wheat. Rice feeds more people than wheat, twice over.—*Massachusetts Ploughman.*

Plant trees around but not in the garden

Make Cheese Instead of Butter

For one dollar I will mail you ten rennets, with instruction for making and curing cheese at a paratus as has. Hundreds of farmers now using my process. Your money refunded if you fail. C. E. KITTINGER, Powell, Edmunds Co., South Dakota.



Davis' Cream Separator Churn, power hot water and feed cooker combined. Agents wanted. Send for circular. All sizes Hand Cream Separators. Davis & Rankin B. & M. Co. Chicago

100 RICH MEN SUBSCRIBED \$1,000 EACH

To secure practically what readers of this paper may have for a cash outlay of

\$4.00

Reference is made to that Superb Memorial Collection known throughout America and Europe as

The White City Artfolio

Comprising 80 unequalled Photographs, secured by William H. Jackson, the world's greatest scenic photographer, who took first prize at the Paris Exposition and at the World's Fair, and was called to Chicago as being at the head of his profession.

Each Folio contains four superb plates, 14x17 inches in size, and descriptive text furnished by Stanley Wood, Esq., the pages of description being inserted from time to time in the Folios, so that when the series is complete the possessor will have a connected commentary on all the views presented. Each plate is ornamented by a delicate India tint border, and placed uncut in the Folio, where it can remain, or it can be framed as an appropriate and artistic mural decoration. This method of presenting these souvenirs of the Exposition possesses many advantages over that of binding, and places the Folio at once in the domain of art works. The Artfolio will be kept by all who obtain it as the most noble reproduction of the magnificence of the White City that exists, and will become the one standard souvenir of that glory now departed forever. It is the single series which reveals in the highest form the rare and manifold architectural beauties of the White City.

THOUSANDS ALREADY HAVE THEM. THOUSANDS MORE WILL HAVE THEM ON THESE EASY TERMS:

SEND US ONE DOLLAR for a subscription one year to *KANSAS FARMER* and we will send you one number of the Artfolio free.

Send us two subscriptions and two dollars (\$2) and we will send you three Artfolios. And for each dollar subscription, after the first one, we will send you two numbers of the Artfolio. A little work at odd times, in any neighborhood, will soon entitle one to the whole series FREE. There are twenty (20) numbers in all.

The cash price of any number of the Artfolio is 20 cents.

THIS IS YOUR CHANCE! IMPROVE IT!

Address **KANSAS FARMER CO., Topeka, Kas.**

The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the KANSAS FARMER.

PARALYSIS IN SOW.—I have a large brood sow, due to farrow September 1, that has been down in the hind quarters for about a week.

MORBID GROWTH—SWEENEY.—(1) I have a pig which was castrated two months ago and does not heal, but has grown a large lump of proud flesh instead.

When we reflect that during the ninth decade the urban customers of the farmer increased three times as fast as his cultivating competitors and that such customers are now increasing twenty times as fast;

The Russian Thistle: Its History as a Weed in the United States, with an Account of the Means Available for Its Eradication. By Lyster Hoxie Dewey. Pp. 32, pls. 3.

When we reflect that during the ninth decade the urban customers of the farmer increased three times as fast as his cultivating competitors and that such customers are now increasing twenty times as fast;

The Convention of the Christian Endeavor Society.

"And for a final word, Dr. Clark, what of the year of which this convention is the climax?"

"It has been a year of steady gain in this young people's work all over the world. Societies are multiplying to an unprecedented degree.

If our subscribers who are about to renew their subscriptions, will notice our advertisement of "Picturesque America" in this issue, they no doubt will desire to take advantage of our offer.

Double the life of farm machinery by taking good care of it. The matter is possible for all because practiced by many.

Publications of the United States Department of Agriculture for June.

Contributions from the United States National Herbarium, Vol. III, No. 2. Pp. 91-132. By John M. Coulter.—A preliminary revision of the North American species of Cactus, Anhalonium and Lophophora.

Information Regarding Road Materials and Transportation Rates in Certain States West of the Mississippi River. Pp. 24, maps 4. (Bulletin No. 5, Office of Road Inquiry.)—Condensed reports received from railway managers regarding the supply of road materials—accessibility, transportation rates, etc., along their respective lines.

Information Regarding Roads, Road Materials, and Freight Rates in Certain States North of the Ohio River. Pp. 30, maps 7. (Bulletin No. 6, Office of Road Inquiry.)—A compilation of information furnished by various railway companies regarding the supply of road materials along their respective roads.

Earth Roads: Hints on Their Construction and Repair. By Roy Stone. Pp. 20. (Bulletin No. 8, Office of Road Inquiry.)—A compilation of information and suggestions regarding the best method of constructing a common highway without gravel or stone.

Report of Statistician. New Series No. 116. Pp. 4.—A synopsis of the Report of the Statistician for June, 1894, containing estimates of the acreage of cotton, wheat, oats, rye, rice and clover, and a report on the condition of these crops and of fruits.

Report of the Statistician—June, 1894. Pp. 295-394. (Report No. 116, Division of Statistics.)—Contents: Crop report for June; tariff rates on principal cereals and flour in European countries; notes on foreign agriculture; notes from United States consular officers; the climate of Mexico; Mexican railways; transportation rates.

The Russian Thistle: Its History as a Weed in the United States, with an Account of the Means Available for Its Eradication. By Lyster Hoxie Dewey. Pp. 32, pls. 3. (Bulletin 15, Division of Botany.)

Canagire. Pp. 4. (Circular No. 25, Office of Experiment Stations.)—Contains a description of canagire, together with information as to its tannin content, the regions best suited to its growth, its culture and preparation for market, and the supply and value of the crop.

Report of Wrecks which Occurred on the Great Lakes from December 17, 1885, to November 15, 1893. Pp. 22. (Miscellaneous Report of the Weather Bureau.)

School Chart—Maps of December 14-16, 1893. Size 5 1/2 x 5 1/2 inches. (Published by the Weather Bureau.)—For use of schools, designed to show the movement of areas of high and low temperature and the method of forecasting the same.

Experiment Station Record, Vol. V, No. 10. Pp. 941-1040.—Contents: Editorial notes; a review of recent work on dairying; abstracts of publications of the Agricultural Experiment Stations of the United States Department of Agriculture, and reports of foreign investigations; titles of articles in recent foreign publications, etc.

Hungarian Brome-Grass. Pp. 4. (Circular No. 7, Division of Botany.)—A description of the grass, with special reference to its history, yield and value as a forage crop.

Charts of the Weather Bureau. (Size 19 x 24 inches.)—Semi-daily Weather Map, showing weather conditions throughout the United States and giving forecasts of probable changes. Weather - Crop Bulletin (series 1894) reporting temperature and rainfall, with special reference to their effects on crops. No. 12.—For the week ending June 4, 1894. No. 13.—For the week ending June 11, 1894. No. 14.—For the week ending June 18, 1894. No. 15.—For the week ending June 25, 1894.

Monthly Weather Review—April, 1894. Pp. 149-192, charts 5. (Subscription price 50 cents per annum.)

Wreck Chart of the Great Lakes from 1886 to 1893. Size 24 x 33 inches.—Shows location of wrecks occasioned through foundering, gales of winds, fogs and stormy weather conditions during the period named.

Peach Yellows and Peach Rosette. By Erwin F. Smith, special agent. Pp. 20, figs. 7. (Farmers' Bulletin No. 17.)—Contains information regarding the distribution, distinguishing characters, and preventive measures for the treatment of peach yellows and peach rosette.

Regulations Governing Transactions with the United States Department of Agriculture, together with Extracts from the Revised Statutes, Decisions of Comptrollers, etc. Pp. 42. (Bulletin of the Division of Accounts.)

REPRINT. Fertilizers for Cotton. By J. M. McBryde, Ph. D. Pp. 32. (Farmers' Bulletin No. 14.) Every farmer should write to the Secretary of Agriculture, Washington, D. C., for such of these as he desires.

A baby is a wee little thing, but a constable was once a baby.—Billings' Philosophy.

The Kansas Weekly Capital publishes more Kansas news than any other weekly paper. A free sample copy will be sent on application to THE TOPEKA CAPITAL CO., Topeka, Kas.

Kansas Fairs.

Following is list of fairs to be held in Kansas during the present year, their dates, locations, and Secretaries, as reported to the State Board of Agriculture and furnished by Secretary F. D. Coburn: The Kansas State Fair, C. M. Irwin, Secretary, Wichita, October 2-4.

MARKET REPORTS.

LIVE STOCK MARKETS.

Kansas City. July 9, 1894.

CATTLE—Receipts, 6,842 cattle: 478 calves. The top was 15c higher than a week ago. Dressed beef steers, \$3 25@4 00; cows, \$2 00@2 40; bulls, \$2 05@2 50; heifers, \$2 80; calves, \$4 50; stags, \$2 00@3 25; stockers and feeders, one small lot at \$3 30. Fed Texas steers, \$4 00; Colorado steers, \$4 15@4 45; Texas and Indian steers, \$2 75@3 55; Texas and Indian cows, \$1 25@2 50; Texas and Indian calves, \$4 50@6 00.

Chicago. July 9, 1894.

No market on account of the disturbed condition accompanying the strike.

St. Louis. July 9, 1894.

CATTLE—Receipts, 6,000. Natives steady. Texans opened strong, closing weak. Top, \$3 65; Native steers, common to best, \$3 50@4 75. HOGS—Receipts, 2,300. Market quiet and easy. Top, \$5 00. SHEEP—Receipts, 400. Market steady. Some lambs at \$4 65. Natives, \$2 00@3 25.

GRAIN AND PRODUCE MARKETS.

Kansas City. July 9, 1894.

WHEAT—Receipts for forty-eight hours, 20,400 bushels; last year, 16,800 bushels. A firm tone pervaded the market, the improved condition of the railway situation here causing buyers to take hold with less hesitancy and bid a little stronger for all good samples.

CORN—Receipts for forty-eight hours, 27,000 bushels; last year, 63,600 bushels. Market slow and lower under better receipts and the opening up of the railroads to traffic. By sample on track: No. 2 mixed, 36 1/2@38 1/2; No. 3 mixed, 36@38 1/2; No. 2 white, 39 1/2@41; No. 3 white, 39@39 1/2. Sales: No. 2 mixed, 5 cars at 36 1/2; No. 2 white, 2 cars at 40.

OATS—Receipts for forty-eight hours, 2,000 bushels; last year, 6,000 bushels. Not many on sale and market higher under the influence of the light offerings, but demand only moderate. By sample on track: No. 2 mixed, 33@35; No. 3

mixed, 31@32; No. 2 white, 35@36; No. 3 white, 33@34; No. 4 white, 30@31. Sales: No. 2 mixed, 1 car at 34 1/2; No. 3 mixed, 1 car at 31c.

FLAXSEED—Market slow and weak at \$1 10 per bushel upon the basis of pure.

HAY—Receipts for forty-eight hours, 50 tons. Market firm and demand good for all bright and sweet. Fancy prairie, \$7 00@7 50; choice, \$6 50@7 00; low grades, \$4 00@5 50; timothy, choice, \$9 50@10 00; No. 1, \$9 00; No. 2, \$7 00@8 00; choice clover, mixed, \$3 00@3 50.

BUTTER—Market slow. Much poor coming in. Only best table wanted and it selling in a fair way. Creamery—Highest grade separator, 16@17c per pound; finest gathered cream, 14c; fine fresh, good flavor, 13c; fair to good, 12c. Dairies—Fancy farm, 12@13c; fair to good line, 10c. Country store-packed—Fancy 11c; fresh and sweet packing, 10c.

EGGS—Dull and lower. Fresh, 5c.

CHEESE—Kansas and Missouri, full cream, 8c.

POULTRY—The market is again stronger and this time it is hens that show an advance. Turkeys in light offerings; springs firm; ducks scarce. Hens, per pound, 5c; roosters, 15c each; springs, per pound, 10@11c; turkeys, per pound, 5c; ducks, young, 8c; old, 5c; geese, 8c; pigeons, per dozen, \$1 00; veal, choice, 80@100 pounds, per pound, 4 1/2@5c.

POTATOES—Only home-grown moving at 40@50c. No shipping being done.

MELONS—Watermelons dull and hard to sell at 75c@1.75 per dozen, and market overstocked. Cantaloupes slow sale and offerings heavy.

PEACHES—None here and very few inquiries being had for them.

FRUIT—Apples, fancy, per bushel box, 50@60c; choice, one-half bushel, 35@40c.

VEGETABLES—Jobbing prices: Beans, navy, California, per bushel, \$3 10@3 15; country, \$2 00@2 10; cabbage, per 100 pounds, \$4 00; celery, California, 75c@1 00 per bunch.

EARLY VEGETABLES—Asparagus, 10@12c per dozen; cabbage, home-grown, per pound, 1@1 1/2c; cucumbers, per dozen, 10@20c; beans, per bushel, 80@90c; beets, per dozen bunches, 10@15c; egg plant, per dozen, 30@40c; new corn, per dozen, 10@15c; peas, per bushel box, 60@65c; tomatoes, Mississippi, four-basket crate, 60@75c; one-third bushel box, 15@25c. New onions, \$1 10 per bushel. Squash, 20@25c per dozen.

BROOMCORN—Harled, green, 3@3 1/2c per pound; green, self-working, 2 1/2@3c; red-tipped, do., 2 1/2@3c; common, do., 1 1/2@2c; crooked, half price. Dwarf, 2@3 1/2c.

GROUND LINSEED CAKE—We quote car lots sacked at \$25 per ton; 2,000 pounds at \$26; 1,000 at \$14; less quantities \$1 50 per 100 pounds.

WOOL—Demand fair and values steady. Missouri and similar—Fine, 8@11c; fine medium, 10@12c; medium, 12@14c; combing, 18@15c; coarse, 11@13c. Kansas, Nebraska and Indian Territory—Fine, 7@10c; fine medium, 8@11c; medium, 10@13c; combing, 12@14c; coarse, 5@10c. Colorado—Fine, 7@10c; fine medium, 8@11c; medium, 10@12c; coarse and carpet, 9@10c; extremely heavy and sandy, 5@7c.

Chicago. July 9, 1894.

The following table shows the range of prices for active "futures" in the Chicago speculative market for the speculative grades of the commodities. This speculative market is an index of all prices and market tendencies:

Table with columns: Commodity, High-est, Low-est, Closed July 2, Closed July 9. Rows include WHEAT, CORN, OATS, PORK, LARD, S. RIBS.

WHEAT—Cash—No. 2 red, 57c; No. 3 red, 53@54c; No. 2 hard, 55@56c; No. 3 hard, 53@54c. CORN—Cash—No. 2, 41 1/2c; No. 3, 41 1/2c; No. 2 white, 42 1/2c; No. 3 white, 41 1/2c. OATS—Cash—No. 2, 48c; No. 2 white, 50@53c; No. 3 white, 50@53c.

St. Louis. July 9, 1894.

WHEAT—Receipts, 35,000 bushels. The market gained 1c early, but dropped back 1/2c closing 1/2c off on a belief that the railroad strike was nearing the end. No. 2 red, cash, 54 1/2c; July, 54 1/2c; August, 53 1/2c; September, 54 1/2c.

CORN—Receipts, 67,000 bushels; shipments, 4,000 bushels. Advanced 1/2@3/4c with wheat. No. 2 mixed, cash, 41 1/2c; July, 39 1/2c; August, 39 1/2c; September, 39 1/2c.

OATS—Receipts, 32,000 bushels; shipments, 2,000 bushels. Firm, but early turned weak. No. 2 cash, 45c; August and September 28 1/2c.

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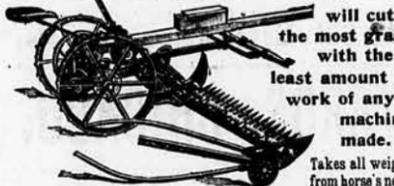
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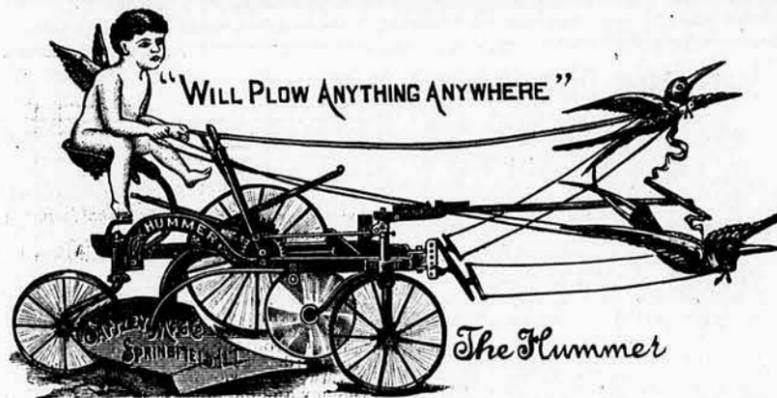


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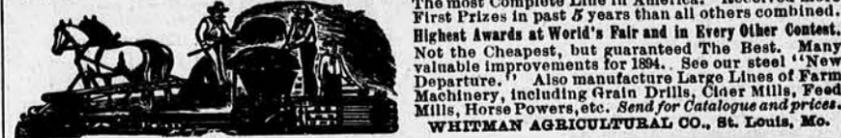


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THE STRAY LIST.

FOR WEEK ENDING JUNE 27, 1894.

Marshall county—E. E. Woodman, clerk. MARE—Taken up by V. D. Crawford, in Noble tp., P. O. Vermillion, one dark sorrel mare, supposed to be 2 years old, no marks or brands; valued at \$12.

FOR WEEK ENDING JULY 4, 1894.

Brown county—J. V. McNamar, clerk. MARE—Taken up by G. E. Joss, in Walnut tp., June 10, 1894, one black mare, 10 or 12 years old, left hind foot white, slit in right ear, saddle marks.

Phillips county—I. D. Thornton, clerk. MARE—Taken up by Eli Holt, in Walnut tp., P. O. Woodruff, June 8, 1894, one blue-iron mare pony, 2 years old; valued at \$5.

MARE—By same, one black horse colt, 1 year old, muzzle on; valued at \$8.

MARE—By same, one light gray mare, 7 years old, weight about 1,000 pounds, large wire cut on right forearm; valued at \$20.

HORSE—By same, one dark gray horse, about 4 years old, weight 800 pounds, white hind feet; valued at \$15.

HORSE—By same, one dark bay horse, about 6 years old, four white feet, star in forehead and strip on nose, weight about 1,000 pounds; valued at \$20.

Scott county—Jos. Griffith, clerk. PONY—Taken up by Eugene Walsthong, in Valley tp., June 2, 1894, one bay mare pony, three white feet and star in forehead, branded SD; valued at \$10.

Osage county—E. C. Murphy, clerk. HORSE—Taken up by Samuel Benton, in Barclay tp., June 12, 1894, one sorrel horse colt, 4 or 5 years old, has white spot in forehead, wire cut on right front foot just above the hoof.

PONY—By same, one chestnut sorrel mare pony, about 8 years old, has white face and a little white on right hind foot.

FOR WEEK ENDING JULY 11, 1894.

Logan county—H. G. Kiddoo, clerk. HORSE—Taken up by Samuel West, in Western tp., May 6, 1894, one large-boned black gelding, no marks or brands; valued at \$10.

Thomas county—Jas. M. Stewardson, clerk. MARE—Taken up by J. V. Davis, in Randall tp., P. O. Mingo, June 8, 1894, one black mare, weight about 1,100 pounds, right hind foot white, branded O on left shoulder, T on left hip; valued at \$35.

SHEEP.

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For twenty-nine years we have kept strictly to the Delaine sheep—wool on a mutton carcass, and we guarantee satisfaction in size and in quality of wool. Rams and ewes for sale. We have thirty-five yearling rams, sixty ram lambs and fifty yearling ewes. Have reduced prices 30 per cent. A bargain. Write at once to ALEX. TURNBULL & SON, Cedarville, Ohio.

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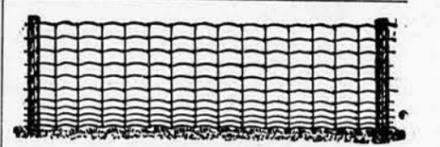
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