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Agricultural Matters.

AMERICAN CROP STATISTICS.

We are permitted, through the courtesy of Mr. C. Wood Davis, to present to KANSAS FARMER readers the following copy of a letter written by him to William E. Bear, formerly editor of *Mark Lane Express* and now of agricultural department of *London Standard*:

PEOTONE, KAS., April 13, 1896.
William E. Bear, Esq., 70 Onslow Gardens, Highgate N., London, England:

MY DEAR SIR:—Your letter of February 24 reached me in due course of mail, but I have been unable to answer until now.

No, the error in the estimate of the corn crop (maize) on our farm was not due to superficial examination, as you suggest, but was due to the character of the season, and common to growers throughout the maize belt.

With a climate as variable as that of the United States it is probably somewhat more difficult to estimate yields correctly than where the climate is so equable as that of the United Kingdom. Tabulations recently made show that in Germany, France, Austria, Hungary, Russia, Roumania and Italy, and in nearly if not quite every other country gathering agricultural data, the estimates vary from the actual product—as shown by subsequent internal and external distribution—quite as much as in the United States. I believe the same conditions would appear to obtain in the United Kingdom did not imported grain constitute so great a proportion of that consumed as to mask and completely obscure errors in both commercial and official estimates of your small crop. An error of 20 per cent. on a crop of 60,000,000 bushels, would be but 12,000,000 bushels, and constitute but 5 per cent. of your whole supply, while an error of 20 per cent. on a crop of 450,000,000 bushels (our average) would aggregate 90,000,000 bushels, add at least 100 per cent. to our average exportable surplus and be obvious to the most superficial of observers.

I am convinced from long-continued investigations, that the estimates of the present Chief of the Statistical Division of the Department of Agriculture vary no more from the actual than do those emanating from official sources in other countries, and are nearly or quite as reliable as those of your own Major Craigie. And yet our production is on an enormously greater scale than yours, and the whole excess in years above an average in acre yield going to swell the exports, that an error proportionately no greater than a synchronous one in relation to your production, appears, to the unreflecting, vastly greater and tends to discredit the work of the Statistical Division. With the exception of the egregious errors of Dodge and Snow in estimating the wheat crops of 1891 and 1892 and the acreage errors of the same officials, I believe the work of the division has, at most times, been reasonably good, and especially since Mr. Robinson took charge. Not that his work has been free from errors, but compared to the errors of 1891 and 1892 they have been immaterial, and such as are inherent in the very nature of things. The apparent errors in subsequent estimates of the wheat crop are clearly due to the stupendous under-estimates of 1891 and 1892, as that wheat has been coming into sight ever since, and swelling the deliveries from current harvests, each of which have been, I believe, estimated quite high enough.

You say that your farmers can usually tell within two bushels what will be the outturn of the wheat crop. Two bushels an acre on your 2,000,000 acres would be 4,000,000 bushels. Two bushels an acre on the 39,000,000 acres of the United States in 1891 and 1892 involved an error of 78,000,000 bushels in each of those years. I think the error in 1891, as well as in 1892, was from three to four bushels an acre in the United States, and from changes made in estimates in the United Kingdom, I believe as great errors have been made in estimating some recent crops by British farmers, if not by British officials.

You have a farm to farm return, while our estimates are made by county agents, and your reports ought to be infinitely better, and your estimates incomparably better than ours, yet I doubt their superiority except as regards acreage.

But I don't care a continental for such necessary and obvious errors as are under discussion. Taking the world as a whole, the incidence and measure of the errors are the same as last year; the same as five years ago, and neutralize one another. What does it matter if there is an element of error of 5 per cent. if it is constant? If the estimate (of world production) is excessive by 5 per cent. consumption is 5 per cent. less than it appears to be. If the estimate is too small by 5 per cent. then consumption is 5 per cent. greater than it seems to be; but in any event, taking periods of five or more years, the variation from the actual is a proportionate and constant one. This is all we can expect or hope for, and, it seems to me, is all that we should care for. At all events, it is all that I care for, as it enables us to determine the ratio of acres to population and average yields, and thus determine the sufficiency of the food supply with average acre yields. The only question of any importance, in this regard, it seems to me, is whether the errors involved are fairly constant, and in the same direction. If so, the ratios are ascertainable, and needs determinable, as are the means of meeting them. And this appears to be all that we can hope to deduce from agricultural data, no matter if it is absolutely accurate.

Your criticisms of American area estimates seems to me ill-founded, when we consider the extent of the country; the fact that farm to farm returns are obtained but once in ten years, and that vast stretches of country—areas greater than the whole of the United Kingdom—are but sparsely inhabited, and social and political institutions but a thing of yesterday. Taken as a whole, I believe recent acreage estimates of the Statistical Division are as good as we have any reason to expect. No doubt the machinery and system employed are alike defective, but this will improve with age, and we should remember it is but twelve years since your officials made their first attempt to estimate the product of the United Kingdom. Under the crude and imperfect system in vogue no doubt enormous and probably inexcusable errors were made by the Dodge regime, as that scientist seemed wholly incapable in the eighth decade of keeping up with the rapid development, and just as incapable of slowing down his estimating machinery in the ninth decade, when all the cultivable lands had been occupied; hence both the last censuses show him to have been all at sea, without rudder or sail, as regards acreage. Now, however, there are no material additions being made to the productive areas, and no material ones possible. The only material changes now occurring are those following from changes in crop distribution necessitated by great annual additions to our consuming element. These changes in crop distribution are mostly in the direction of more grass and less grain, although there are years—such as 1895—when climatic destruction of wheat and grass crops may cause a great expansion—temporary—of the area under maize and other spring crops.

Irrigation is slightly increasing the area under crops in the arid and semi-arid regions; but such increase will never aggregate more than 3 per cent. of the arid regions, because the water is not available, and it will probably take a hundred years to add even this small fraction to the productive areas. In the meantime, such lands as are being irrigated are at once absorbed in the production of fruits, forage and other minor crops, crops that are yearly absorbing, as well, a considerable proportion of the lands heretofore employed in growing grain. In other words, the additions to the cultivated acreage—the additions possible to the cultivated acreage—are not sufficient to furnish the hay required by the 1,400,000 units annually added to the popu-

lation of the United States. This I find to be true, also, as regards additions to the cultivated areas of the temperate zones as a whole.

These significant facts—most significant—are factors of which neither your statesmen (?) nor your economists (?) nor ours take heed, but go on blindly with their futile remedies for an agricultural depression that they know not the cause of, and that is likely to disappear, that will disappear in a night just as soon as the world shall grow, in successive years, two crops of grain not above an average in acre yield. Is there, was there ever such a being as a statesman? Was there ever an economist? The ignoring of the most obvious facts in relation to food production, consumption and prices therefor are everywhere so common as to lead one to doubt the existence of either statesmen or economists, and ask if they are not simply creatures of the imagination.

As to the manner in which the American farmer markets his grain, I would say that, outside the Dakotas and Minnesota, but a small part of the wheat goes directly to even the elevator located at the country railway station, and practically none from the farmer to the great city elevators. In the Dakotas and in Minnesota there are great firms—in which railway officials are believed to be interested—having small elevators at each station along a particular line of railway, and having a practical monopoly of buying grain along such railway, although the State laws require the railways to furnish cars to farmers and other individuals, into which the grain may be loaded directly from the farmer's wagon; but so many obstacles are thrown in the way of individual shippers, whether farmers or others, that the elevator companies are little disturbed in their monopoly.

In Kansas, and other States growing winter wheat largely, there are but few lines cursed with the elevator companies, and at most stations there are several grain buyers competing. Most of these buyers, however, are but commission agents of firms doing business at the great central markets, yet there are many who buy on their own account. The great city houses each day—at least in the busy season—wire the independent country buyers bids for different varieties and grades of grain loaded that day on the railway track at the country buyer's railway station. If the country buyer has a car of the grain (wheat, maize, oats or barley) bid for and the price is satisfactory, he wires an acceptance before the hour named in the offer, and the city dealer "hedges" against this purchase at once by selling a long "future." Immediately this car of grain reaches the city market it is sold as cash wheat, if it has not already been sold "to arrive." Thus this lot of grain is on the market as actual grain or as cash grain, as the "to arrive" sale is separate and distinct from the long "future" already sold, and the pressure it exerts is double what it ought to be in determining prices, even if the vicious "future" did not destroy the city receiver's interest in cash grain; but the fact is that this great city dealer receiving from twenty to thirty cars of grain daily is interested in the cash price of only the amount of grain represented by that number of car-loads, while he may have outstanding "futures" contracts for as much grain as he receives in three, or even six, months. In other words, his interest in depressing and advancing prices is in the ratio of thirty to 3,000 car-loads.

All transactions between the grain buyer and the farmer are practically for cash, although some dealers keep general stocks of merchandise and what grain they buy from a few farmers may become a part of a running account. Such transactions, however, are the exception, and cash payments the rule.

The grade at which wheat is sold by the farmer is usually determined by the judgment of the country buyer, often aided by the use of a "tester" which shows the weight per measured bushel. When competition at a given country station is unusually brisk, the country buyer will, sometimes, take

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AYER'S

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

AYER'S Hair Vigor

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

Take Ayer's Sarsaparilla for the Complexion.

the farmer's grain as No. 2, when inspection in the central city market shows grade No. 3. There is, however, a wonderful sight of cheating attending the inspection and grading of grain in all the greater markets, and will be until the federal government takes the matter in hand. I have shipped three cars of maize from the same bin and had it grade No. 2, No. 3 and No. 4 at Chicago, St. Louis and Kansas City.

Wheat that will not grade, or that grades as "rejected," is readily bought by the country dealers, and the poor wheat goes to the "cleaning houses" attached to most city elevators, and, after being cleaned, is mixed with just enough good wheat to bring its grade up to No. 2. In other words, all the good wheat that enters most city elevators is mixed with as much poor wheat as it will carry, and, by the skin of its teeth, barely pass as No. 2. This is the way in which the great operators who own the city elevators make so much of the "skin grade," and also make vast sums of money. And this accounts for the fact that "out inspections" of No. 2 wheat at Chicago are from two to three times, in quantity, the volume of the "in inspections." This "skinning" has proved very lucrative, and is conducted on an enormous scale.

All transactions at the country stations is, practically for cash and by sample, as there are no grain inspectors outside the great central markets; yet the price is determined by the country dealer's idea of the grade of each particular lot offered by the growers. Mills buy wholly by sample, unless forced to buy from the city elevators, and even in such case they buy from sample if they can, as they know the character of the "skin grades," and believe them fit only for exportation.

Giving little or no attention to the department's reports relating to farm prices, I am wholly unable to answer your last inquiry.

Yours very truly,
C. WOOD DAVIS.

There is nothing so good for burns and frost bites as Salvation Oil. It effects a speedy and permanent cure. 25 cents.

A Look Through South Missouri for Four Cents.

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

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

The Stock Interest.

THOROUGHbred STOCK SALES.

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

MAY 6—W. A. Harris & Son, Short-horns, Linwood, Kas.
OCTOBER 1—E. E. Axline, Poland-Chinas, Oak Grove, Jackson Co., Mo.

SWINE AILMENTS.

By H. L. Leibfried, Emporia, Kas., read before Kansas Improved Stock Breeders' Association.

As I have been assigned to furnish you my views on swine disease, other than cholera, I will state as follows: It seems, from time to time, I am called on by the Secretary to interest the swine breeders of Kansas on a subject of this kind. I have always tried to meet any wishes of the President and Secretary of the Swine Breeders' Association of Kansas. I get a great many letters from different States, and all letters seem to indicate that I am a practicing V. S. I have not practiced for the last three years. I am simply a breeder of purebred Poland-China and Berkshire swine.

At our meeting in Wichita, in October, there seemed to be a great difference of opinion in regard to swine measles. I will be plain in regard to this matter, as I would want every breeder to understand me, and I will not give any Latin terms, but will give you plain breeder's language, so every one will understand me. I will say, in the first place, that measles are not hereditary, as several breeders claimed at the Wichita meeting. No disease can be called hereditary. Animals which have had the measles will not be apt to have them again. Therefore, I would say that any animal is subject to measles under certain conditions. We will say, for instance, swine which bed in manure or in any damp litter, outside of earth, are greater subjects than those which are kept on a dry floor and have disinfected pens. Also pigs that are allowed to go lousy are inoculated very easy by lice. There is no doubt but what hog lice will distribute measles, the same as the Southern tick on cattle. It is very seldom you hear of a case of measles where pigs are free from lice, where their bed is disinfected and they have a good plank floor to sleep on at night and in comfortable quarters. This germ is taken into the system the same as any other germ, and, of course, as soon as the disease is set it will show the animal in a feverish condition. If this animal is allowed to sleep outdoors at night and lie in anything damp, it is no doubt a greater subject to pneumonia, therefore the animal dies from pneumonia rather than measles. The symptoms are generally specks on the ear, roughness of skin on stomach and hind quarters. An eruption of this kind should be treated at once with linseed oil and carbolic acid. There are a great many febrines that can be used in the measles. I will state that in our herd we use acetanilid. It is very cheap when bought in large quantities. The dose is one teaspoonful to every grown hog. I have known of a great many pigs dying this year from so-called cholera and swine plague, but it is nothing but pneumonia caused by an unhealthy condition of the pens. I have called the attention of breeders so often in regard to disinfecting the pens that it seems almost useless to refer to the matter again. Pigs should be greased at least once every thirty days. We grease our pigs about once every fifteen days. We mix two ounces of carbolic acid to one gallon of raw linseed oil and one-half dram of salicylic acid. The carbolic acid seems to kill all parasites that are caused by an eruption of the skin. It also disinfects the animal. The salicylic acid keeps down all irritation, and the oil holds the acids together and is very invigorating to the hair and skin of the animal. It also destroys all lice and nits which young pigs and old hogs are subject to. This disease of measles has only been discovered in the last ten years, and has no doubt been more damaging to young pigs than cholera. We find that 25 per cent. of pigs are lost at weaning time by the best and most careful breeders, and you will find the cause mostly pneumonia caused by measles.

I find that breeders complain of pigs coughing. It is natural for them to cough in dry and dusty weather, but the symptoms of measles are very plainly shown in a husky cough and drooping of the ears before there is any scale come on the ears. This is a good sign of the measles, and I would advise treatment at once. I have received a great many letters since last October, and every breeder I have prescribed for has written back that their pigs were all right and they did not lose any from the time they commenced using the prescription that was sent them.

Now, I have one word to say for the veterinary surgeon. I think he is the most abused professional by swine breeders. Every man has a remedy of his own. Every swine breeder will prescribe for you, but know nothing about the effect of the medicine. They will advise you to use carbolic acid, both internal and external, concentrated lye, copperas, sulphur, nitrate of potash, black antimony, turpentine. They will make other assertions and condemn the V. S., and would not give their prescription for any prescription that could be prescribed by a veterinary surgeon. I will say, gentlemen, that whenever your hogs get sick employ a V. S. He knows how to diagnose your case and will know what to prescribe, and also the effect it will have. I think a great many veterinary surgeons make mistakes, the same as other people, but no doubt he is a great help to swine breeders. It is impossible to get along without them. I have known breeders who claim reputation that have used one pint of carbolic acid in a bucket of slop. Their pigs lived but a very few minutes. I have known breeders to prescribe and give their pigs one dram of arsenic, and so on.

Why I Breed Chester Whites.

Paper by H. S. Day, Dwight, Kas., read before the Kansas Swine Breeders' Association.

Because I like them. They are a handsome, fine-looking pig, good feeders, of rapid growth, early to mature, always fat, long-continued growth, exceedingly healthy, strong constitution, good mothers and sucklers, quiet, peaceable disposition, easily confined, and with length of body that makes fine bacon and bring the top of the market when sent there. With all these splendid qualifications, why should I not breed Chester Whites?

Man is what his surroundings make him. The more peaceable, pleasant and profitable his condition, the more he is impelled to do and act.

What is prettier than a bunch of fifty, one hundred, or more hogs, all pure white, of even size, good make and finish, healthy, vigorous, with good appetites, eating their mess as regularly as given and as regularly taking on fat and making money for their owner? A rose might be, but not here. The owner of such a bunch of hogs is encouraged to work for and among them, and will surely be on hand to care for and supply their wants. The Chester White pig is born with an appetite, and as soon as he sees the light of day starts for his mess and rustles till he gets it, and so on through life, each mess time is there. The result is, he grows and fattens and keeps fat always. No difference what time the butcher comes, he is ready. If the market demands 100 pounds, you have him. If 200 is wanted, wait a little longer, and if pork is a good price and feed cheap, and four, five or more hundred pounds are wanted, feed on; the Chester White will get there. He is vigorous and strong constitutionally, and capable of resisting and overcoming disease. Note his vigor in breeding. Breed to black sows and the pigs are always white, save when you strike a well-bred "Berk," when sometimes the pigs will show some black, but the superior part is white, showing the superior vigor of the Chester White. They are exceedingly quiet and docile, easily confined. A lot with fence as high as their backs will hold them. They are prolific, having large litters of pigs, which they deliver without assistance, their labor being apparently painless and of short duration, again proving their vigor. Their good feeding qualities keep them in good

condition while suckling their pigs, and after weaning the sow is soon fitted for market if desired. These reasons alone justify me in breeding the Chester Whites.

I am young in the business compared with many of your association; have much to learn, and would have been pleased to meet with you, become acquainted and gathered some good for myself, but I personally attend the breeding and feeding of my herd and cannot be absent at this time.

Smut in Corn Stalks.

EDITOR KANSAS FARMER:—Enclosed you will find \$1 in currency for renewal of subscription to the "Old Reliable," also 10 cents for the five books in paper covers which you offer with renewal of subscription.

I have been considerably interested in the discussions in the FARMER on various subjects of interest to the farmer. One of these is "smut on corn stalks." I, for one, do not believe in diseased corn stalks. Many years ago my father directed me to pull off all smut on corn stalks when husking, as he considered it deleterious to cattle running in the field. I have always aimed to do so, and have never, I believe, had any animals pasturing the fields injured.

Our corn fields have, this season, been unusually free of smut, so much so that to find a smutty stalk at least in one instance occasioned a remark.

There was a good article in one of your late issues, on sorghum, by Mary Best. We need some pure seed here in our part of Kansas.

J. W. COWGILL.

Princeton, Kas.

Alfalfa Pasture for Swine.

From various parts of Kansas, breeders write about the beauties and advantages of alfalfa. From R. S. Cook, a breeder at Wichita, Kas., we have the following:

"The farmers in the State of Kansas that can raise alfalfa and do not, certainly miss it, as it is the very best forage plant we have. It is much earlier and later than any other plant down here in the Arkansas valley. It keeps green until a hard freeze comes to kill it the middle or last of December. My cows have been running on good pasture since the 2d of April. By using caution, I have had but one bloat in seven years that I have been using alfalfa for my hogs, cows and colts. That was my fault. I turned my cattle on in the morning, after a light rain. They should not be turned onto the pasture until after the dew is off nor after a rain. But colts and hogs may run onto it all the time, day and night, without any bad results. I understand that in some parts of our noble State alfalfa does not do well, but I am thankful it does well here in Sedgwick county. I would not know how to raise Poland-Chinas without it. They will root the snow in mid-winter for it."

Artichokes and Hogs.

Anent the discussion of artichokes for hog feed, a writer in the *Breeder's Gazette* relates his experience and observations, as follows:

"It is true they are easily propagated. It is also true that hogs will eat them greedily and will gladly do their own digging. I planted two acres of rich bottom land adjoining the hog-house and lots in early spring and let the brood sows exercise there in the winter and spring following. They got plenty of exercise and artichokes in abundance the first year; the second year more exercise and fewer artichokes. After the first winter the tubers and pieces of tubers were scattered through the ground so that artichokes took possession and made a dense weed-patch. The following fall the tubers were small and the ground hard, and the third year the tubers were smaller and more scattered. The lot was considered a disgrace. Visitors would ask why we allowed such a growth of weeds on that lot when the rest of the farm showed care and neat cultivation.

"I tired of the experiment and set to work to eradicate the pest. I think it took not less than five years to rid the ground and fence rows thoroughly of

Woman's Work.

Is never done, and it is especially wearing and wearisome to those whose blood is impure and unfit properly to tone, sustain and renew the wasting of nerve, muscle and tissue. The only remedy for tired, weak, nervous women is in building up by taking a good nerve tonic, blood purifier and vitalizer like Hood's Sarsaparilla. For troubles Peculiar to Women at change of season, climate or life, great cures are made by

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the curse. If one hates weeds and enjoys a clean, tidy farm he must not grow artichokes for hogs to harvest. Nor do I think it possible to prevent their taking the character of weeds, even if the artichoke patch is worked and the tubers dug and stored like potatoes. Every tuber or eye left in the ground will sprout the following spring and their persistence after once getting a hold is remarkable."

Area for Ten Sows and Progeny.

To determine definitely, it would depend upon the number of pigs in litters. But, supposing each sow to have six pigs, making, with the ten sows, seventy head, we can now approximate the number of acres required for their support from the time pigs are farrowed till ready for market, at about ten months old. Before farrowing, each sow should have a good, comfortable place for bed, and a lot of about one-eighth of an acre. Here she should remain with her young till they are about three weeks old, or strong enough to follow her about. Then she should be allowed the run of a good grass lot in the daytime. For early grazing, a patch of rye of about five acres will be very good, and will give the early pigs something green before pasture affords grass. From the rye patch they should go on to a good pasture of blue grass and clover, say of about ten acres, making fifteen acres of pasture. While this amount of pasture will support the sows in litter, I would much prefer to give them larger range, as the pigs could get more exercise, and naturally build up better bone and constitution. Grass will be fresher and sweeter, and droppings not so thickly scattered. Allowing that fifteen acres is sufficient pasture, then we want about the same number of acres for corn, small grain, and roots, making a total of thirty acres, which will support the ten sows and grow their sixty pigs from the time they are farrowed till they are nice, well-rounded, fat hogs, large enough to fill a barrel at ten months old.—J. E. Summers, Huntsville, Mo.

Important to Breeders.

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

Everybody should know what a good medicine Dr. Bull's Cough Syrup is; it has cured many thousands and will cure you.

Home-Seekers Excursions.

On April 21 and May 5 the Missouri, Kansas & Texas Railway Company will sell tickets at very low rates to points in Missouri, Kansas and Texas. For particulars, address G. A. McNutt, 1044 Union avenue, Kansas City, Mo.

Get up a club for KANSAS FARMER.

Irrigation.

SUB-IRRIGATION.

EDITOR KANSAS FARMER:—Since reading the interesting communication of Prof. A. A. Mills, of the Utah Experiment Station, in the KANSAS FARMER of April 16, on "Sub-Irrigation vs. Surface Irrigation," I have re-read the official reports of the careful experiments made at the Utah Station by Profs. Sanborn and Mills and at the Wisconsin Station by Prof. King, to ascertain by comparison of conditions why it has been so difficult to spread the water laterally from sub-irrigation tiles at both these stations, while the market gardeners and citizens of Osborne, Ness City and Centralia, in Kansas, have found no difficulty in spreading the water evenly through the top foot of soil with lines of tile laid eight and ten feet apart. Unfortunately two important conditions, the character or texture of the soil, and the depth of cultivation, are not mentioned in the Wisconsin report, and the Utah Station is silent as to the depth the soil has ever been stirred.

At both stations trenches seem to have been dug to the depth of eighteen inches, in which cobble rock or tile were placed. We are left to infer that the soil had been plowed the usual depth, say eight inches, and that the lower ten inches of the trench was in the undisturbed subsoil. If this is correct, the business men and gardeners of Osborne seem to have better appreciated some of the conditions essential to the spread of water by sub-irrigation than either Professors King, Sanborn or Mills, for I have never heard of any of them, or any one in Kansas, attempting to spread water laterally through an undisturbed subsoil.

Shales and limestone outcrop along the bluffs of the Solomon valley above Osborne. No mechanical analysis has been made, but the soil appears to be very fine textured, almost black in color, with a fair percentage of very fine sand. There is at least ten, and in places probably twenty feet, of compact subsoil, but probably not more so than the uncultivated surface soil, less the organic matter.

The Osborne sub-irrigators first sub-soil about sixteen inches deep, in two directions, and lay three-inch drain tile sixteen inches deep, in lines ten feet apart. The water is first applied in the winter, when the ground is not frozen, or early in the spring while the soil is still cool. The deep stirring keeps the lateral movement on a line with the level of the bottom of the tiles and facilitates its spread to the surface. In other words, instead of having eighteen to twenty-four inches wide of disturbed soil over the line of tiles to bring the water to the surface, they dig their ditches ten feet wide and sixteen inches deep and place their line of tile in the center and let the water come to the surface over the entire ten feet of width.

In May, 1895, I examined the two and one-half acre garden of Andrew Linn, at Osborne, and again in March, 1896, when it was increased to three and one-half acres. The one acre plot had been subsoiled and tiled within thirty days of my last visit, and yet I could not tell where the lines of tile were laid through which water had been flowing. There were no wet spots anywhere to reveal their location, and one inch below the dry top the soil was moist everywhere. The same was true of the two and one-half acre garden adjoining, in use two seasons, except that the first-laid tile were given a slight fall which over-saturates the lower end. This was corrected in the tile subsequently laid. By means of borings made in May, 1895, when the soil all around was very dry, I found the water within three inches of the surface ten feet from the end of the line and within six inches of the surface twenty feet away from it.

Mr. Linn has his water supply so completely under control that he can bring the water almost to the surface for his onions and small vegetables, and to within three inches of the surface for deeper-rooting vegetables or

plants. The surface never shows wet except when it rains.

It seems to me I have never seen such ideal conditions for plant growth as that found in the gardens of Dr. Hudson, the pioneer sub-irrigator of Osborne, and Mr. Linn's. Others are following their example rapidly, and no one seems to think it worth while to test surface irrigation. For this reason we have no means of comparing results between the two systems on this soil, but judging from results so far, I believe these people have chosen as wisely in giving preference to sub-irrigation for their gardens as the people of Utah in giving preference to surface irrigation for all purposes. Each have chosen what is best adapted to their soil and conditions.

While the Utah and Wisconsin experiments made a fair comparison of sub-irrigation under soil conditions such as are provided for the surface application of water, I question whether a better showing could not be made for sub-irrigation, even in Utah, under slightly different conditions, although probably not sufficient to justify its adoption there even for a home acre, as a substitute for surface irrigation.

If we assume that the Utah or Wisconsin or Kansas soil requires 40 per cent. of its bulk of water to fully saturate it, there will be very little movement of water from a portion containing 30 per cent. of water into adjoining dry soil or soil containing less than 10 per cent. of water, but there will be a movement or transfer from soil 30 per cent. moist into similar soil adjoining 20 per cent. moist, till the differences are adjusted. In other words, when a soil is sufficiently moist that there are films of water over-spreading the surfaces of the soil grains continuously through the mass, the greater tension of these films aid in moving or pulling the water from the point of larger supply near the tile where the films are thicker and the tension less, and in this way spreading it laterally and upward along the surfaces of the soil grains.

When the moisture content is reduced so that the continuity of the films is broken, or when the soil is dry, the movement of water is very slow, and for a very short distance, until the soil near the tile becomes fully saturated. So long as the soil around the tiles is kept fully saturated, water will spread upward by capillarity, just the same as from a ground water level, hence spreading water in a dry soil is practically impossible if the soil below the line of tile is leachy and constantly lowering the water content of that around the tile below the point of full saturation. This was the case at the Utah Station. It was impossible to spread the water laterally with the trench sunk into a gravel bed or within six to twelve inches of one.

The influence of the ground water level at the Wisconsin Station, six feet from the surface, with its capillary water extending at least three feet higher, would bring a powerful surface tension ally to the aid of gravity and pull the water away from the tiles faster than the surface soil could pull it upward.

On account of the ground water level so near the surface on the Wisconsin experiment farm, conditions are there presented so entirely different from those prevailing in Kansas that we cannot always make them applicable to our conditions, for we rarely have ground water nearer than twenty feet and oftener over fifty feet from the surface.

Next to a compact substratum to prevent loss of water downward, a dry clayey subsoil is probably the most desirable, if the water is supplied no faster than the surface soil maintained at a proper degree of moistness can take it up. Under these conditions the water will spread downward very slowly in a dry subsoil, the movement upward into the moist humus soil near the surface being much more free. If water is applied faster than the surface soil can absorb it, then full saturation takes place and the surplus goes downward.

To irrigate under these conditions takes careful work and is only feasible

under an almost constant and regulated supply flowing into each tile.

Sub-irrigation requires the soil to be maintained at over one-fourth saturation all the time. This means irrigation the year round, and is best adapted for the man with the windmill. Commencing to sub-irrigate June 15, with the ground dry, would give doubtful results, even in the favorable soil at Osborne.

If the Utah Station intends to continue this experiment, I hope they will select new plots containing as high a percentage of clay as possible, with gravel bed, sand or other loose formation not nearer than thirty inches to the surface. Subsoil sixteen inches deep. Lay three-inch drain tile on a dead level. Apply water in the early spring, when the soil is as near the freezing point as possible. If the soil is dry, it may be necessary to surface irrigate once to get it in the proper condition. It would be interesting if water could be applied slowly and constantly to one plot, and weekly to the other, delivering it as rapidly as the soil will take it.

It is perhaps presumptuous in a KANSAS FARMER correspondent to make suggestions to the officers of an experiment station, but if anything good comes out of the suggestion it will not be the first good thing Utah has received from Kansas.

H. R. HILTON.

A Pest New to Kansas Orchardists.

EDITOR KANSAS FARMER:—The receipt of numerous complaints of the destructive abundance of a pest new to most Kansas orchardists, leads me to address your readers with a brief account of the life-history and methods of control of the *canker worm*, for such is the name of this injurious insect. It is evident, from the sources of my correspondence, that the canker worm is present in widely diverse quarters of our State this year, and to most of these inquirers the insect seems to be absolutely new. I can only explain its phenomenal abundance the present spring by the favorable weather of the winter and spring to date, the many open mild days encouraging the appearance of the moth and allowing her to climb the trees and deposit eggs in great numbers, as attested by the presence of the caterpillars now at their destructive work.

As will appear in the following account of the transformations of the insect, its rapid migration is not to be feared. The species must have been present last year in some numbers, though unnoticed, in every orchard where it now appears.

LIFE HISTORY.

There is but one brood a year. The insect passes the winter in the ground as a pupa. The wingless female climbs trees in open days in late winter and early spring, deposits eggs in loose, irregular groups under sheltering scales of loose bark, in crevices, or among the leaves or the nests of certain other insects remaining all winter on the trees. The eggs hatch about the time the leaves appear, and the larvæ, where as abundant as at present, keep the trees looking as naked as in winter. They are span-worms or loopers, names descriptive of the peculiar gait of the caterpillars, due to the absence of the middle abdominal legs. In color they vary from dark to light gray-brown, with more or less distinct longitudinal lines of lighter. When alarmed, the worms drop and remain suspended at the end of a thread of silk, which they reel out as they fall. Unless interfered with, this thread they reascend, climbing again to their home on the branch. When full grown they are about an inch long, and, now, leaving the tree, they wander about, finally entering the surface soil, where, in an earthen cell, after transforming to pupæ, they remain, mostly, all winter. A few of the moths may appear the same season, but the majority of them do not transform until the spring following their larval existence.

GENERAL CONTROL.

Several opportunities for their destruction are offered by the above life-history. The ascent of the wingless female may be prevented by the use of some impassable barrier or trap on the

tree trunk. Paper belts coated with a sticky material serve to catch the ascending insect and hold her until she dies. The application of such trap-bands should be made very early to intercept the first moths, and the state of the material used should be tested by frequent inspection. Where very abundant the moths will sometimes bridge over the band for their followers by their own dead bodies. Fresh applications are necessary to prevent this. Little can be done after eggs are laid until they hatch, though if not already done the scales of dead bark should now be scraped off, collected and burned, as many eggs will thus be destroyed. After the larvæ are once at work on the leaves the war is on in earnest. If let alone they will seriously check the growth of the trees, keeping the young leaves eaten off as fast as they appear. They also attack the blossoms and the season's hope for fruit is blasted thus early. Spray, then, and again, if necessary, with the sole object of destroying the worms. Stronger applications than usual of Paris green or London purple should be used rather than allow the worms to mature as the parents of another destructive brood next spring. Use at least a quarter pound of the powder to the barrel of water, and repeat within a few days to make sure of killing those later hatched. Where but few trees are attacked or only a moderate number of larvæ are found they may be removed by jarring the tree or branches repeatedly and securing the worms as they fall or hang suspended by their silken clues.

As the insect transforms in the surface soil, it is probable, as is claimed by some Illinois horticulturists, that the pupæ may be largely prevented from reaching maturity by the stirring of the soil once or twice after the dormant stage is reached. The logic of this proceeding seems to be this: Most lepidopterous pupæ survive with difficulty the breaking up of the earthen crust of their pupal cells in the soil. The too close contact with the broken soil seems to assist the growth of the insect-destroying molds always to be apprehended where moisture and temperature conditions are favorable. It is likely, then, that the canker worm will gain foothold less easily in those orchards regularly cultivated, especially when the annual stirring of the soil is not suspended until after the worms have all entered the dormant state.

Finally, I believe it to be a fact that in those orchards where the sprayer has been properly used, year after year, against the codlin moth, the canker worm is not now destructively abundant. This is true in the vicinity where I write, and if such be not the general experience, I should like to have the history of the exceptional cases.

I am greatly desirous to learn the extent of the present attack, and will thank any reader of the FARMER who will let me know by postal card of the appearance of the insect in his locality, with a note of the amount of damage or other fact of interest.

E. A. POPEOE.

State Agricultural College, Manhattan, Kas.

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Answers to Correspondents.

HENRY W. ROBY, M. D.—Dear Sir: Our little baby boy—1 year old—caught a bad cold last winter, resulting in a severe swelling of the glands of the throat and pneumonia. Also both ears—first the right, then the left—broke and ran. One stopped running in a few days, but the other is still running. The discharge is not matter or pus, nor does it contain blood, but seems to be a watery fluid with a very offensive smell. He is troubled with his teeth now, and indigestion, but seems to be pretty healthy.

I am sometimes lame in the back. Don't know whether it is the muscles or kidneys, but I fear the latter. My urine is at times as clear as crystal. Sometimes the last of it is cloudy, as if it held much limestone in solution, like the dregs of a teakettle. At other times it has the natural urinal appearance. I have had severe attacks of inflammatory rheumatism, but not for two years. I also have catarrh. Please prescribe through the KANSAS FARMER.

Uniontown, Kas. J. L. ROBINSON.

To the child give Hepar sulphur, sixth trituration, four times a day.

For yourself take benzoic acid, third trituration, four times a day, as much as will lie on a nickel for a dose. Half that quantity for the child.

The Rhymes of Ironquill—Fourth Edition.

(Reviewed by Dr. H. W. Roby.)

The measure-masters and poetasters all find fault with Eugene Ware for his lack of symmetry and classic form in verse-making. The dreamer in dactyls, the ambler in amphibracs, the trochaic troopers and the pyrrhic pilgrims, all poke their sticks at him and exclaim: "Look at those feet! *Talipes equinus!*" And those whose musical intervals synchronize with the stately martial tread of the lambic pentameter, in which the great epics of the world are written, cry out: "He hath no music in his soul! His lines and columns are as disorderly as was the marching of Sherman's bummers, no two keeping step." Few of his stanzas can be sung in long, short or common meter.

His muse, like wild Mazepa flings,
Each clanging hoof-beat, where it rings
In furious flight, or slackened speed,
As some quick impulse seems to lead,

and he utterly refuses to be bound like a slave to the chariot wheels of Prosody.

But, a wart on a man's nose never indicates the quality or quantity of gray matter scooped in his brain-pan, and the informality of a man's verse does not determine the quality of heart and purpose in the writer. In the coming years, when droughts and grasshoppers are forgotten and new generations camp on the Kansas plains, the "Rhymes of Ironquill" will be recited in cabins and corn fields, in palaces and temples, for they breathe the Kansas atmosphere, its ozone and its sunshine. Eugene Ware is a very loyal Kansan, and his verses indicate a supreme loyalty to State and nation.

The dreams of Eugene Aram
Were the gruesome dreams of death.
He dreamed and plotted murder
Until his fleeting breath.
The dreams of our own dreamer,
The dreams of Eugene Ware,
Are of a greater Kansas,
A State supremely fair.

This Kansas Kalidasa*
Stands tiptoe on the hills.
And with his torch and trumpet
The level landscape fills
With light and timely challenge;
With courage that begins,
With courage that continues
Till faith and labor wins.

Shag-coated and unmeasured though they be, yet these verses contain the fire and glow of Helicon. The prayer and faith of the washerwoman, the sunsets on the Marmaton, the march of Coronado, the sublime heroism of John Brown, the children of the prairie, the pathos of poverty, the triumphs of courageous manhood, the smell of new-mown hay, the odor of roses and corn fields, the twitter and warble of birds, the freshets and fishing of spring-time, autumn and nutting, blizzard and sizzard, morains and the primal ocean, are all garnered into this harvest of rhyme, and each with its own flavor and tints. Diligent indeed must be the gleaner who follows, bringing a big sheaf to the garner.

Mythology is there and classic allusions overabound, where new imagery and free coinage of phrases prove the birth of another Walt Whitman.

The most poetical and enduring number in the book is "The Washerwoman's Song." It is written in trochaic tetrameter with a blunt foot—a hypermeter. It is the most quoted and most criticised of all his poems and is the most likely to carry his name to posterity.

*Kalidasa was the Shakespeare of India.

Gossip About Stock.

Col. J. W. Sparks, live stock auctioneer, Marshall, Mo., writes that he has booked a public sale of Poland-Chinas for W. H. Wren, of Marion, Kas., to be held at St. Joseph, Mo., fair grounds on September 17, 1896.

Every farmer needs to have always at hand some Gombault's Caustic Balsam, the great French veterinary remedy. There is nothing better on the market that has the unqualified endorsement of stockmen, for cuts, bruises and sprains of domestic animals.

Sunny Slope farm, Emporia, Kas., is in the very front ranks with Hereford cattle this year and are prepared to fill almost any want any Hereford breeder may desire. Among the good things now for sale is that young sweepstakes bull, Archibald VI., which should head some grand herd advantageously. During March he was illustrated in the FARMER.

W. S. Hanna, Ottawa, Kas., still reports continued sales of Poland-Chinas from his herd. Among the late purchasers are: J. S. Curtis, Scott City; John Storkoff, Dubuque; P. B. Hammers, Anthony, each buying a boar. Also Frank Hovey, of Osawatomie, and Ryan Lumber Co., McCracken, each took a boar and a sow bred. Mr. Hanna also reports that neighbors living between his farm and postoffice have purchased thirteen pigs.

R. S. Cook, Wichita, Kas., reports recent sales of Poland-Chinas as follows: J. W. Wampler, Girard, Kas., sow bred, \$35; J. W. Spencer, Ft. Worth, Tex., sow bred, \$40; one sow to F. B. Linn, Olathe; two sows to G. G. Baker, Britten, Okla.; pair to E. E. Butler, Glasco, Kas.; a nice boar to R. A. Randall, Madison, Kas.; a Darkness sow to C. S. Snodgrass, Gault, Kas.; also a boar each to A. Miller, Admire, Kas., and A. A. Roach, Vinita, I. T.

Thos. P. Babst, of Dover, Kas., was a caller at the FARMER office this week and reports a very significant sale of ten very fine thoroughbred Short-horn heifers to J. F. True, of Newman, Jefferson county, Kansas. These choice females, just coming yearlings, average about 900 pounds. They were all sired by his famous herd bull, Lord Mayor, and were from Thistle Top and Earl of Gloucester dams. Members of the Kansas Improved Stock Breeders' Association will now be pleased to know that Col. True is no longer "A man without a breed," since he has such a grand foundation of thoroughbred Short-horns.

J. B. McAfee has just returned from a visit to Oklahoma and says: "I spent a day at Newkirk, breathing the pure moral atmosphere of that lovely country. Examined the fine Short-horn herd of our former fellow-townsmen, E. H. Littlefield. While I was there he sold seven fine young Short-horn bulls from his herd to Andrew Pringle, of Harveyville, Kas., for his New Mexico trade. Mr. Littlefield and his near neighbor, O. E. Walker, also a former Topekan, are making fine farms in the new Territory. The latter has over 800 acres of very fine wheat. They are both genuine Kansas rustlers, honored and respected by all who know them, for their sterling qualities of head and heart and for the good work they are doing in building up that portion of the Territory. It is a most beautiful and lovely country and worthy of the extra efforts being put forth by these energetic pioneers to make it one of the most desirable places, not only for themselves and their families, but for others who may desire to locate in a beautiful and productive section of the country."

Among the most successful Franklin county swine breeders are J. R. Killough & Sons, of Richmond, Kas. Mr. Killough, senior, is a native of Ohio and bred the Poland hog for fourteen years in Butler county before he became an adoptive Kansan, eleven years ago. The herd was reduced last fall by the annual public sale and is now being recruited with the semi-annual pig crop, sired mainly by two herd boars—Upright Wilkes 13246 S., bred by Cantrall & Hoffman, of Illinois. He was sired by the great George Wilkes 5950 S. and he by King Tecumseh 3921 S. His dam was Luyster's Lady 81121 S., by Luyster's Choice 13233 S. and out of Pride I. 81120 S. The reader will at once see that he needs no further introduction as to high-class breeding, and the visitor finds on inspecting his get that he is a very successful getter of the useful and profitable kind of pigs. His coadjutor, J. H. Sanders Jr. 13729 S., is by the noted World's Fair winner, J. H. Sanders 11205 S., that won first in class, first boar and three sows over 1 year, first boar and three sows bred by exhibitor, and sweepstakes boar any age bred by exhibitor. This, too, in the greatest exhibit of improved swine that the world ever saw. His dam, Star Lilly 32289 S., was by Corwin U. S. 7116 S. The reader will at once recognize his wealth of blood and historical ancestry. As an individual J. H. S. Jr. is a counterpart of his sire in conformation and character, and the writer feels sure that the

15 Per Cent. More Butter

.. WITH THE ..

Improved United States Separator.



We are highly gratified with the results obtained with the No. 7 Improved U. S. "Midget" Separator. We have made 15 per cent. more butter with the same cows and feed than we did on the milk setting process. Then the improvement in quality fully pays for the cost. Can't get enough butter now for our customers.

The Separator is easy to operate, thorough in separation, and very easily and quickly cleaned. No complicated machinery to take apart and wash—only three pieces. From our experience with the No. 7 United States Separator we would not take double the cost and dispend with it; and for the benefit of our brother farmers and butter producers, we heartily recommend its purchase and use.

M. W. BROWN & SON,
Scioto, Scioto Co., Ohio.

March 13, 1896.

The Improved U. S. Separator Stands on its Own Bottom.
Made in three dairy sizes, and also for factory use.

CATALOGUES FREE.

Agents wanted in every town and county where we have none.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

THE STRAY LIST.

FOR WEEK ENDING APRIL 16, 1896.

Chase county—M. C. Newton, clerk.
STEER—Taken up by L. W. Byram, in Cottonwood tp. (P. O. Cedar Point), March 15, 1896, one steer, 1 year old, right horn off.

Hodgeman county—S. S. Kiehl, clerk.

MARE—Taken up by J. B. Mitchell, of Jetmore, March 19, 1896, one brown mare, fourteen and a half hands high, no brands; valued at \$10.

MARE—By same, one bay mare, fifteen hands high, white in forehead, right hind foot white, left fore foot wire-cut; valued at \$2.

Labette county—J. F. Thompson, clerk.

HORSE—Taken up by E. S. Billington, in Elm Grove tp., March 23, 1896, one sorrel horse, sixteen hands high, white face, weight 900 pounds, 7 or 8 years old, short rope around neck; valued at \$15.

FOR WEEK ENDING APRIL 23, 1896.

Wabaunsee county—J. R. Henderson, clerk.

STEER—Taken up by F. L. Raymond, in Maple Hill tp. (P. O. Vera), February 3, 1896, one red steer, left ear cut and dewlap cut, bunch off end of tail, branded T. I. on left side; valued at \$25.

FOR WEEK ENDING APRIL 30, 1896.

Wallace county—W. E. Ward, clerk.

MARE—Taken up by F. F. Cuttler, one brown mare, age unknown, white spot on face and on nose, left hind foot white; valued at \$10.

HENRY W. ROBY, M. D., SURGEON.

Office 118 Sixth Ave. West. TOPEKA, KAS.

\$12.50 FOR A MACHINE
to weave your fence at 25 Cts. per Rod.
10 No. 10 Gal. wires. Cross wires No. 12. We will sell wire for a 100 rod fence for \$200. Agents Wanted. Catalogue Free.
CARTER Wire Fence Mach. Co. Box 71 Mt. Sterling, O.

VINELESS SWEET POTATO
Our "GOLD COIN" PRO-LIFIC is the Greatest Sweet Potato on earth. No one can offer it this year but ourselves. It's a fortune to any one. PAYS 20 times its cost in increased yield and cheapness of production. Quality the very best. Leading horticulturists say nothing equals it. Every farmer and gardener should grow it. No vines to bother. It's marvelous. Nothing before ever equaled it. Order immediately before stock is exhausted. We offer \$100 for the largest yields. Our book, "40 years experience in growing Sweet Potatoes," Free. Price prepaid 1 lb. \$1.00; 2 lbs. \$1.50; 3 lbs. \$2.00; 50 plants \$1.00; 100, \$1.50; 500, \$5.00; 1000, \$9.00. Send club orders.
HUNTINGTON SEED CO., Indianapolis, Ind.

ASK YOUR DEALER FOR W. L. DOUGLAS \$3. SHOE BEST IN THE WORLD.

If you pay \$4 to \$6 for shoes, examine the W. L. Douglas Shoe, and see what a good shoe you can buy for

\$3.

OVER 100 STYLES AND WIDTHS,

CONGRESS, BUTTON,

and LACE, made in all

kinds of the best selected

leather by skilled work-

men. We

make and

sell more

\$3 Shoes

than any

other

manufacturer in the world.

None genuine unless name and

price is stamped on the bottom.

Ask your dealer for our \$5,

\$4, \$3.50, \$2.50, \$2.25 Shoes;

\$2.50, \$2 and \$1.75 for boys.

TAKE NO SUBSTITUTE. If your dealer

cannot supply you, send to fac-

tory, enclosing price and 36 cents

to pay carriage. State kind, style

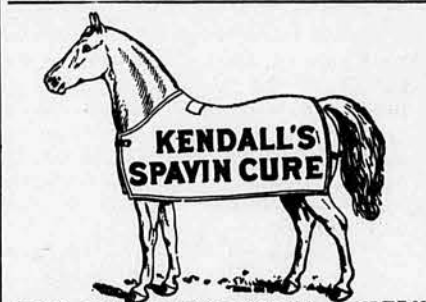
of toe (cap or plain), size and

width. Our Custom Dept. will fill

your order. Send for new illus-

trated Catalogue to Box M.

W. L. DOUGLAS, Brockton, Mass.



KENDALL'S SPAVIN CURE

THE MOST SUCCESSFUL REMEDY

FOR MAN OR BEAST.

Certain in its effects and never blisters.

Read proofs below

KENDALL'S SPAVIN CURE

BLUEPOINT, L. I., N. Y., Jan. 15, 1894.

Dr. B. J. KENDALL CO.—I bought a splendid bay

horse some time ago with a Spavin. I got him for

\$30. I used Kendall's Spavin Cure. The

Spavin is gone now and I have been offered \$150

for the same horse. I only had him nine weeks,

so I got \$120 for using \$2 worth of Kendall's Spavin

Cure. W. S. MARSDEN.

KENDALL'S SPAVIN CURE

SHELBY, Mich., Dec. 16, 1893.

Dr. B. J. KENDALL CO.—I have used your Kendall's

Spavin Cure with good success for Curbs on two

horses and it is the best liniment I have ever used.

AUGUST FREDERICK.

Price \$1 per Bottle.

For sale by all Druggists, or address

DR. B. J. KENDALL COMPANY,

ENOSBURGH FALLS, VT.

\$3.10 FOR THE BEST

BRASS BUCKET SPRAY PUMP

on the market. It is fully described in

our SPRAY PUMP CATALOGUE. Another

valuable work is our handsome ILLU-

STRATED BOOK ON CIDER PRESSES AND FRUIT

MACHINERY. Both will be sent FREE.

DAVIS-JOHNSON CO.

41 W. Randolph St. CHICAGO, ILL.

The Home Circle.

WHEN THE SKIES CLEAR OFF.

The prospects will be brighter,
The burdens will be lighter,
An' the souls of us be whiter
When the skies clear off!
With sweeter roses springin',
An' sweeter birds a-singin',
An' all the bells a-ringin',
When the skies clear off!

The silver—it'll jingle,
Till your fingers tingle, tingle;
Old friends'll meet and mingle
When the skies clear off!
An' trouble, like a feather,
Will go sailin' out the weather;
We'll sing and dance together
When the skies clear off!

There's a sign o' light a-comin':
An' you hear the wagon hummin':
You'll be marchin' to the drummin'
When the skies clear off!
No matter what's the trouble—
It'll break jest like a bubble,
An' you'll drive in harness double
When the skies clear off!

STORY OF THE SEEDS.

"One I love," a pretty face
Bending o'er the grate;
"Two I love," a soft, sweet voice,
Measures out her fate.
"Three I love," I say, "and still
Other seeds galore.
"Four I love with all my heart,"
What need is there of more?

"Five I cast away"—Ah, no!
Fortune thus were wrong,
Should the count thus ended be;
Love's ties are too strong.
"Six he loves," a dimpled smile;
"Seven she loves," a blush;
"Eight both love," a sweet look steals
O'er the fair face flush.

"Nine he comes; he carries ten,"
"Eleven he courts"—but wait!
Anxious search has failed to find
The seed where rests her fate.
Carefully she looks them o'er,
Then, as brow grows light,
"Twelve he marries. Mercy! I
Nearly died from fright!"—Puck.

NEW THINGS IN LAMPS.

How Many Familiar Bits of Bric-a-Brac Are Utilized Nowadays.

In these days, when everything from an ink bottle to a tea caddy is utilized for a lamp foundation, with, too, it must be admitted, varying success, a really graceful novelty is not to be overlooked. Such a one, seen recently, was a lamp evolved from an Italian wine bottle. Into the long, slender neck of a large wicker-bodied Chianti flask was inserted one of the delicate glass lamp bulbs to be found in the leading shops. The shade, a most harmonious accompaniment to this effective conceit, was of fine sprigged muslin gathered very full over a lining of white silk. The gay red and blue silk pompoms which the Italian manu-



CHIANTIE BOTTLE LAMP.

facturer, with his native love of color, never fails to fasten to the wicker casing of his wine bottle, were left, and afforded the only brilliant tones in the dainty novelty.

Another lamp to be desired, seen in a studio noted for its fascinating collection of old brasses and glass, was fashioned of one of the brass milk cans which are among the finds of Holland. The can had been slightly beaten and highly polished, and into its four-inch neck was fitted a lamp fount. A yellow silk shade added the finishing touch.

In the den of a bachelor a foundation for a lamp has been laid with three Turkish daggers. Their handles, resting on the table, the curved blades hold the fount. The original thought which designed this unique ornament has carried out the oriental scheme in the shade, which is made of a brightly striped silk scarf of Turkey.

The fortunate possessor of two tall, single candelabra of the Empire period

has, with the aid of a pale yellow and a turquoise blue lamp bulb and shade to match, added two of the most charming illuminating vehicles imaginable to her artistic menage. The same little housewife has supplied a much-desired blue and white lamp for a white dining-room by purchasing for a mere song a tall candlestick of imitation Delft and supplying it with a white porcelain bulb and a shade made of blue and white Japanese crepe.

An inexpensive and in every way satisfactory toilet lamp is easily evolved from any one of the pretty porcelain candlesticks picked up occasionally, at a very small investment, in the leading crockery houses. The simple old brass and silver candlesticks that are a heritage from our grandmothers will also be found very available for the same purpose.—N. Y. Times.

HOW TO REGAIN YOUTH.

Busy Women Should Rest at Least One Hour Every Day.

Busy women continually resolve to "take things easier," "to rest on their oars for a season," and drift on the river of indolence, if only one hour a day. We embark on the daily voyage fully intending to do this, but before nightfall realize that we have been shipwrecked on the Scylla of duties, real or imaginary, or engulfed in the Charybdis of social hurry.

Why not really make up our minds that one hour daily should be devoted to recreation or resting in some manner? Either we will walk an hour, lie down an hour, read an hour, sew, knit, do fancy work, visit or chat with a congenial friend for an hour. In short, we will overturn our common methods for one brief space daily. The result of a month's fair trial of this plan will encourage to further effort in the same direction, and in faithful observance of some such system we shall renew our "youth like the eagles," while many of the worn and toilsome places will take on new beauties "and blossom as the rose."—Chicago Inter Ocean.

FOR CLEANING BRASS.

The Ashes Which Accumulate in a Stove Are Excellent.

"Throw it out," said one. "Give it away," said another. As it seems a poor kind of giving to bestow that which is worthless to yourself, the last advice was not followed. But the rose shade was so handsome, and the colored glass jewels and hanging drops all intact, it provoked sundry experiments; and the result is a restoration to beauty and usefulness of a lamp that was an eyesore for its verdigris-covered brass-work, says Womankind.

In most stoves a very fine powder accumulates that is not ashes, yet has the essence of the wood in it. Part of this, in one saucer, was moistened well, and another saucer held the dry powder, a pan of good soap suds stood near, and a piece of sheepskin was at hand.

With a tooth brush all the brass was well scoured, then washed in the suds and dried. At this point there was not much encouragement, but now the dry powder and sheepskin were vigorously applied, and, to the surprise of the skeptics, the brass shone with a soft luster very superior to even the hard brilliancy of newness.

This powder will restore the brass rods when tarnished and fly-specked, and an occasional rub with a woolen cloth or piece of sheepskin dipped in the dry powder will keep them in good condition.

Round and Oblong Table Cloths.

Round and oblong cloths with circular borders come in various sizes for dining tables so shaped. Floral designs predominate largely in these, the clover leaf, pansy and chrysanthemum taking the lead as favorites. The handsomest ones, however, of this kind are of plain linen, known as butcher's linen, these decorated by a three-inch insertion of renaissance lace and a hemstitched strip and edging corresponding in design with the lace.

Drive out the impurities from your blood and build up your system by creating an appetite and toning the stomach with Hood's Sarsaparilla if you would keep yourself well.

Hood's Pills are the best after-dinner pill; assist digestion, cure headache. 25 cents.

Scott's Emulsion

of Cod-liver Oil, with Hypophosphites

acts as a brake to declining life. The downward course ceases and the begins. At the new lease Prompt action brings prompt results. climb upwards top awaits a of life.

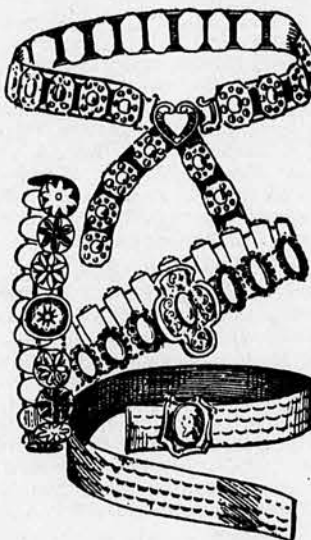
50c. and \$1.00 at all druggists

NOVELTIES IN BELTS.

All the Stylish Bands for Summer Costumes Are Narrow.

Fancy belts have become as much of a necessity to a handsome costume as the material itself, and in many cases the "chicness" of a gown is dependent upon the band which encircles the waist.

Jeweled bands met with large half-pendant buckles are richly studded with colored stones, deeply sunk into flexible bands of gilt, or silver, or in round, square or oblong pieces held together by links. While these are by far the handsomer of imitation belts,



they are the most expensive, costing \$10, \$12 or \$15. Gilt or silver bands are sold as low as 95 cents.

Spangled elastic bands and enameled belts are also among the newer styles, which promise to be much worn this season. Leather belts are most useful and can be had for one dollar. The belt has undergone a great change of fashion since last season, particularly in width. All belts are now narrow, except the broad elastic bands, which are used when "in the field or on the road."—St. Louis Republic.

The Lay of a Bachelor.

A bachelor old and cranky was sitting alone in his room. His toes with the gout were aching, and his face was o'erspread with gloom. No little one's shouts to disturb him—from noises the house was free. In fact, from cellar to attic 'twas as still as still could be. No medical aid was lacking. His servants answered his ring, respectfully heard his orders and supplied him with everything. But still there was something wanting which he could not command—the kindly words of compassion, the touch of a gentle hand. And he said, as his brow grew darker and he rang for a hireling nurse: "Well, marriage may be a failure, but this is a jolly sight worse."—London Standard.

Red Manicure Salve Is Vulgar.

Women never cared more carefully for their nails than now, but the woman of taste avoids extremes in this as in all things. Pink nails are admired because a perfect nail should be thin enough to show the rosy blood beneath, but a nail glowing with the red salve of the toilet table is no better liked than lips and cheeks which owe their brilliancy to the rouge pot. Nor is an artificial polish to be recommended; the natural gloss should be maintained and heightened. The best authorities forbid the use of the nail-brush. Any dust or soil may be removed with a bit of cotton wound around a wooden toothpick or bit of orange wood; the small emery boards which are sold everywhere for the purpose keep the under surface of the nail so smooth that little or nothing can adhere.

TASTE IN MILLINERY.

The Value of a Becoming Bonnet Can Hardly Be Calculated.

One's gown may be simple, may have been made over a number of times, may, indeed, be almost shabby, but if the bonnet is becoming, all else is forgotten.

One's bonnet has much to do with bringing out the virtues or otherwise, not only of one's eyes and hair, but of one's skin and the shape of one's head. The round-faced, plump beauty must give up her ties unless they are of the narrowest and looped with so much care that the idea of framing the full moon is not suggested. She whose face is slender (politeness gives that name to thinness), then there must be a soft, full framing and broad loops that will tone down all angles. She who is fallow must admire rose, pale blue and heliotrope on other women, choosing golden brown, that most charitable of tones, deep crimson, and if a light evening color is required, a delicate shrimp to make the yellow of her skin white. The pale woman chooses rose, dark blue, all reds, dark green, glowing purple and black to gain color, while she of the rosy cheeks selects pale blue, heliotrope, olive, cream white and crimson, if she wishes them not to look like roses. If your eyes are dull do not make them seem more so by putting sparkling jet or brilliant rhinestones near them.—Boston Budget.

Possible Explanation.

"The worst tyrant possible is a liberated slave."

"Er—yes. I guess that's the reason so many devoted lovers make such horrid husbands."—Indianapolis Journal.

FREE TO INVALID LADIES.

A lady who suffered for years with uterine troubles, displacements, leucorrhoea and other irregularities, finally found a safe and simple home treatment that completely cured her without the aid of medical attendance. She will send it free with full instructions how to use it, to any suffering woman sending name and address to Mrs. L. HUDNUT, South Bend, Ind.

One of the health-giving elements of HIRES Rootbeer is sarsaparilla. It contains more sarsaparilla than many of the preparations called by that name. HIRES—the best by any test.

Made only by The Charles F. Hires Co., Philadelphia. A 25c. package makes 5 gallons. Sold everywhere.

RHEUMATISM



Results from a Bad Liver and can be Cured by Using

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

A Certain Remedy for Diseases of the Liver, Kidneys and Urinary Organs

At Druggists. Price, \$1.00 Per Bottle

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

KANSAS FARMER.

ESTABLISHED IN 1863.

Published every Thursday by the

KANSAS FARMER COMPANY.

OFFICE:

No. 116 West Sixth Avenue.

SUBSCRIPTION PRICE: ONE DOLLAR A YEAR.

An extra copy free fifty-two weeks for a club of six, at \$1.00 each.

Address KANSAS FARMER CO.,
Topeka, Kansas.

ADVERTISING RATES.

Display advertising, 15 cents per line, agate, (fourteen lines to the inch).

Special reading notices, 25 cents per line. Business cards or miscellaneous advertisements will be received from reliable advertisers at the rate of \$5.00 per line for one year.

Annual cards in the *Readers' Directory*, consisting of four lines or less, for \$15.00 per year, including a copy of *KANSAS FARMER* free.

Electros must have metal base.

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

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

All advertising intended for the current week should reach this office not later than Monday.

Every advertiser will receive a copy of the paper free during the publication of the advertisement.

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

The latest Treasury estimates indicate that the expenditures of the government for the year ending June 30, 1896, will exceed the income by about \$25,000,000. They are spending the money we borrowed for them.

Henry Clews, the optimist of Wall street, puts the gist of his last Saturday's circular into the following sentence: "Wall street always anticipates the future; and just now it is engaged in the laudable occupation of looking on the brighter side of affairs and administering a timely rebuke to the chronic grumblers, as well as a stimulating tonic to the timid and hesitating."

Acting Secretary Wm. H. Barnes, of the State Horticultural Society, addressed a meeting at Eskridge, last Saturday, which resulted in the organization of the Wabunsee County Horticultural Society, with the following officers: President, Wm. Rinehart, Eskridge; Vice President, P. A. Green, Eskridge; Secretary, A. Schwarting, Eskridge; Treasurer, A. G. Burgett, Eskridge; Prompter, John McMaster, Eskridge.

A terrible tornado cut a swath 400 feet wide and twenty miles long last Saturday night in the corners of Cloud, Clay and Washington counties. Seven persons were killed and fourteen were seriously hurt. Every species of movable property in the path of the tornado was utterly destroyed. The wounded lay out in the storm and darkness all night, some unable to move on account of their injuries and others confined under timbers until reached by rescuers on Sunday.

A co-operative railroad project is on foot in Iowa under the auspices of the "American Railway Co." It is proposed to build from Chicago to Omaha. There is to be \$5,000,000 capital stock, in shares of \$10 each, to be paid in installments. No officer of the road is to receive a salary of more than \$3,000 per year. President Green writes that any of our readers who wish to secure a copy of the articles of incorporation can do so by addressing the company, at Des Moines, Iowa, inclosing stamp.

Those of our friends who are about to renew their subscriptions will do well to note the following clubbing list—KANSAS FARMER one year and any of the following at prices named: The Weekly *Inter Ocean*, \$1.35; New York *Tribune*, \$1.25; Topeka *Capital*, \$1.50; Topeka *State Journal*, \$1.50; Topeka *Advocate*, \$1.50; Kansas City *Journal*, \$1.30; Kansas City *Star*, \$1.25. Our columns have been so crowded for the last few weeks that it has not been possible to run advertisements of our premium offers. But by referring back a few weeks you will find them. Our subscription list is doing remarkably well, but we can always stand a little more of this kind of prosperity.

THE UNIVERSITY GEOLOGICAL SURVEY OF KANSAS.

Volume I. of the reports of this survey is a book of 320 pages, besides a great number of large and well-executed charts illustrating Kansas geological formations. The work has progressed with surprising rapidity under the energetic direction of the State University and in the immediate charge of Prof. Erasmus Haworth. A full and complete survey of the entire State is contemplated, and the first volume of the report shows a well-made plan for a comprehensive work already well begun.

A good deal of good work has been done in the past, and no doubt the University geologists have availed themselves and will continue to avail themselves of the information developed. It should not be forgotten that the late Prof. Mudge, of the State Agricultural college, was an enthusiast on Kansas geology and possessed the admirable faculty of inspiring those around him with similar enthusiasm. The late Prof. Hay was a tireless and efficient worker in the field of Kansas geology, and though most of his investigations were carried on for private account, the aggregate of his contributions to Kansas geological knowledge is very great. Prof. Cragin, formerly of Washburn college, was also a tireless worker during the years of his residence in Kansas and contributed a valuable share to current knowledge of the subject.

But the work of these was more or less fragmentary and it has remained for Prof. Haworth and the University to make a survey which shall comprehend the whole of Kansas geology, and not only connect and make more useful the work of former investigators and connect Kansas geology with that of other regions, but also make the thorough and universal examination of all parts of the State which shall constitute a survey which shall be recognized as authoritatively correct and comprehensive by scientists and for practical information as to configuration, outcroppings, deep stratification, minerals, underground waters, and the various questions answers to which the geologist must furnish the information. It will be remembered that Prof. Haworth was made a member of the State Board of Irrigation. During the last year he has accumulated a vast amount of information which has a direct bearing on the question of availability of water supplies. More or less of this is necessarily presented in the report under review, but it is expected that this particular branch of the work will be more specifically presented under the auspices of the Irrigation Board.

It is well understood by those who have given the least attention to Kansas geology, that the formations at the surface in this State are of later date than those east and south of the State, and that the surface formations are of later date as progress is made to the west. It thus happens that Kansas geology is new; that our surface formations are of later date and of different character from those which have been investigated by the geologists of the older States. Its investigation, therefore, has the freshness and charm of exploration of unknown regions. True, deep borings penetrate the same rocks as are found east of us, and the geologist is thus enabled to connect his work with that already done by former investigators farther east.

In naming the various formations in this State the plan followed has been the admirable one adopted by the older geologists in their investigations—that is, to name the formation for the locality in which its prominent outcroppings occur. When the survey shall have been completed we shall have series of geological designations which will correspond with the geographical and will be found most convenient.

It is surprising to those who realize the amount of careful work involved in geological investigations that in the time devoted to the subject so much has been accomplished as is covered by this report. This work must stand the test of time and of future

information gathered in the same field, and well will it be if it shall be found as careful and as accurate as its prosecution has been energetic.

Kansas pre-eminently, and the world generally, admires and loves the push and zeal which have characterized this work—the pluck which overrides obstacles and attains that which faint hearts desire but fail to reach. Kansas is not lavish in her appropriations and it is remarkable that with the means at command the University geologists have done so much. Doubtless the people's representatives will recognize the value of the beginning made and will provide for its continuance as long as so large returns are made for the expense incurred.

TO TAKE THE TARIFF OUT OF POLITICS.

A national convention has been called to meet in Detroit, Mich., June 2, and continuing from day to day, the primary object of which is to take the tariff question out of partisan politics. The call is addressed to the commercial, manufacturing, labor and agricultural organizations of the United States.

The object is a worthy one. The tariff affects more or less directly every industry and every individual. There is great difference of opinion as to which tariff policy will best promote the general welfare of the people of the United States, but there is scarcely a thoughtful person who fails to realize the bane of frequent tariff changes. Industrial conditions in this country are so favored by nature that people may prosper under almost any stable system of economic and financial policy, but when modifications are made in the artificially created conditions, as when tariff changes are made or changes in the monetary standard occur, industries have to be rearranged and schemers and speculators pocket profits at the expense of producers.

It was one of the many business propositions introduced by the late Senator Plumb to refer the tariff question to a commission. At present it is a football of politicians who use it to hoodwink the people and to get themselves into office.

The following is given as the list of subjects to be acted upon:

First—The discussion of ways and means for taking the tariff question out of partisan politics and making it a business question, instead of a "political football."

Second—The discussion of ways and means for the improvement of the consular service of the United States and the employment of such service for the increasing of our foreign trade, especially with the Central and South American republics.

Third—The advisability of recommending to Congress the creation of a Department of Commerce, Manufacturers and Labor, and of making the chief of such department a member of the President's Cabinet.

Fourth—The advisability of forming a permanent organization for the purpose of holding annual conventions for the consideration of national questions and of recommending to Congress each year such changes in our laws or in their administration as may be deemed for the best interest of our country.

The convention will be non-political and non-sectional, and all questions be discussed from a purely commercial standpoint.

The invitation is without limit as to the number of attendants, and is extended not only to accredited delegates from organizations either commercial, manufacturing, labor, or agricultural, but to every citizen who may be interested in the questions to be discussed, and who believes that more can be accomplished by the united effort of all the different interests involved than by each acting independent of the other.

Any subscriber who wishes to club with other papers can save money by sending his list to the KANSAS FARMER. We have dealers' rates with almost every publication and are willing to give our subscribers the benefit, whether the journals they want are in our published clubbing lists or not.

THE SILVER QUESTION.

With almost unanimity the agricultural papers of the United States favor the free coinage of silver at the old ratio of 16 to 1 with gold and also its use in payment of coin obligations of the government. Whether in this they correctly represent the farmers of the country has been questioned. It has been asserted that silver advocates are confined almost entirely to the silver-producing States. An article bearing on this subject was recently copied from the *Chicago Times-Herald* into the *Cincinnati Price Current*. This was answered in a letter, which was given the most prominent position in the *Price Current*, from A. C. Turner, of Ross, Ohio, in which he says:

"In your issue of the 9th inst. you quote from the *Chicago Times-Herald* an article relative to money. Will you allow me to say that such articles are misleading in their statements regarding the per cent. of people who believe in the single and double standard? Let me cite you to our own neighborhood as an example. The *Cincinnati Tribune* has eighteen regular subscribers at this postoffice; sixteen, if not seventeen, out of this eighteen favor the double standard. All of these have been lifelong Republicans. I am satisfied from my own observation that 75 per cent. of the vote, outside of the cities, of this country would to-day be in favor of the double standard, and the sentiment in its favor is growing.

"This same article that you have quoted speaks of the 50-cent dollar. Now we know as well as they that the silver in a dollar is worth about 50 cents, compared with the gold, as gold is held up by the decree or fiat of the single standard nations, but we feel equally confident that if these nations had not demonetized silver the two metals would have passed as money on as equal terms as they had done for the past centuries; and we feel equally confident that other nations in Europe have been brought to demonetize silver by the same money power that has caused its demonetizing in this country, i. e., parties who hold vast amounts of the bonds and securities, public and private, that are redeemable in coin of these countries; and by having one-half of the redemption material destroyed or taken away by demonetizing, it will make the remaining half, out of which they are to be paid, worth a great deal more to them when their bonds or securities become due and have to be redeemed. We know also that by this same stroke of demonetizing, or destroying its redemptive power, of one-half of the redemptive material, makes the remaining half twice as hard to get hold of, or that it requires twice as much of our products to buy it as it otherwise would, and, in consequence of this, our lands and other property have to fall in value to meet this reduction in our power to redeem, or he who would buy what we have to sell is compelled to give double value for this single standard money that he is to buy with, consequently we are forced to take one-half the price we would get under the double standard when we had double the amount of money by which our obligations could be lawfully redeemed.

"We are also aware that this legislation that took away one-half our power to meet our redeemable paper, was brought about without even so much as letting the masses of the people—those who were affected most by it—even know that such a thing was intended, much less giving them a chance to express themselves on the subject. Please do not make the mistake that they will not be heard from, even if it is late. It will not do to try the blind of saying all European countries have adopted the single standard, therefore we should keep up with European civilization, because we believe that, outside of England, those countries have been hoodwinked by the same subtle and powerful influences that prevailed here, and the common people there have not the direct power in their hands to so speedily make themselves felt as in this country. We know England is an immensely creditor country, and for that reason would do all she possibly could to make money scarce, so as to give to the money

other nations pay her as great power as possible.

"Let us not forget that we should legislate for the benefit of the masses, and that 'this is a government of the people, for the people and by the people,' and that 'you cannot fool all the people all the time.'"

BACK TO THE FARM.

An interesting contribution to the literature on the agricultural question is made in the *A. I. C. P. Notes* for April, entitled, "Agricultural Conditions and Needs." The *Notes* are published under the supervision of Dr. W. H. Tolman, the General Agent of the Association for Improving the Condition of the Poor, at the United Charities Building, New York.

The association, on April 16, 1894, resolved that "the sufferings among the wage-earners of this city during the past winter have been but an accentuated form of a chronic evil resulting from the tendency of population to concentrate in cities, thereby over-supplying the municipal labor markets." They therefore endeavored to assist the laborer back to the soil and for this purpose an exhaustive inquiry was made into the causes of agricultural depression throughout New York State. The reasons assigned by farmers were numerous, but a cause including many others is the lack of facilities for social life. This comprises several causes assigned, *e. g.*, bad roads, greater school advantages and easier living in towns, and difficulty in getting help.

The effect of the government experiment stations was most marked. This was first noticed in the vicinity of Ithaca, where there was an air of prosperity about the farms not found in other sections, and investigation proved it to be true of other agricultural colleges and government stations.

The Committee of Inquiry came to the conclusion that "depression of agriculture is depression of brains."

This is a striking reminder of the conceit of the city man who thinks he can tell the farmer just how to prosper, but who, when he undertakes it himself, generally flies back to the city a poorer but wiser man. But the committee was not daunted. They set about trying to give New York farmers the benefits of city cogitations. No doubt they amused the farmers, and it is not impossible that they started some new lines of thought which may prove useful. But the investigation of agricultural depression was only incidental; the primary object of the movement is to relieve the congested condition of the cities. For this purpose vacant lots have been secured on which people who are more or less public charges are assisted and encouraged to produce some of the things needful for their comfort. It is hoped thus to familiarize them with the cultivation of the soil and to start a movement counter to the current which is sweeping hundreds of thousands from the country to the city, where there are already many in waiting for every job of work. It is somewhat like trying to keep back the ocean's tide with a broom brigade, but it emphasizes the advantage possessed by those who are in position to make a living in the country.

"BROWN'S BRONCHIAL TROCHES" relieve Throat Irritations caused by cold or use of the voice. The genuine sold only in boxes.

Half Fare to Cleveland and Return.

On occasion of the general conference of the M. E. church, May 1 to 31, inclusive, the Nickel Plate road will sell tickets at one fare for the round trip, on sale April 29 and 30 and May 1 and 12. For further information address J. Y. Calahan, General Agent, 111 Adams street, Chicago, Ill. 78

Read What Bishop Fowler Says.

"Going to the General Conference is not such a task as it was in the days of Bishop Asbury. He went on horseback, riding by the week or month. If he had gone from Chicago, it would have been a very serious journey. But we, the heirs of his victories, get into a palace car at Chicago and roll over the Nickel Plate direct line, and soon we are in Cleveland, more rested than when we started. Always sincerely,

83 C. H. FOWLER, (Bishop in M. E. C.)

Weekly Weather-Crop Bulletin.

Weekly Weather-Crop Bulletin of the Kansas Weather Service, for week ending April 27, 1896, prepared by T. B. Jennings, Section Director:

GENERAL CONDITIONS.

A warm, moist week. Light rains have occurred in the western counties, gradually increasing in amount towards the east, except in the northern tier, where little or no rain fell. The rainfall was heavy in the valleys of the Kaw, Marais des Cygnes and Neosho rivers. It was two inches and over in Russell, Shawnee, Osage, Coffey, Labette, Cherokee and Crawford, while a belt with little or no rain appears in Butler, Sedgwick, Harvey, McPherson and Saline.

RESULTS.

EASTERN DIVISION.

This has been a fine growing week. Wheat has made rapid strides and is jointing well. Corn-planting continues alongside of fields where it is being cultivated. Pastures are good and supporting stock. Fruit promises abundantly, but the canker worm has appeared in several counties.

Allen county.—A great week for vegetation; potatoes being cultivated; corn cultivation will now begin; soil in first-class condition.

Brown.—One-half the corn is planted; wheat and oats making rapid growth; fruit trees of all kinds in bloom; pastures good.

Chautauqua.—A good week for all crops; corn is being cultivated; wheat looking well; pastures are good; the canker worm is here.

Cherokee.—A fine growing week, but

fruits setting nicely; canker worm abundant; chinch bugs numerous.

Shawnee.—A fine growing week; corn-planting in progress and some coming up; wheat, oats, timothy, alfalfa and grass growing finely.

Wilson.—Wheat looks well; early-planted corn coming up; cattle on pasture; canker worms numerous.

Woodson.—Splendid growing week; corn nearly all planted, some being cultivated; oats extra good.

MIDDLE DIVISION.

A fine growing week, the warm, moist atmosphere bringing vegetation forward rapidly. Wheat has made the greatest progress, with corn next. Planting is about finished in the extreme south. Pastures are generally supporting the cattle. Fruit promises abundantly, the canker worm having appeared only in three counties.

Barber.—All crops in good condition; wheat doing well.

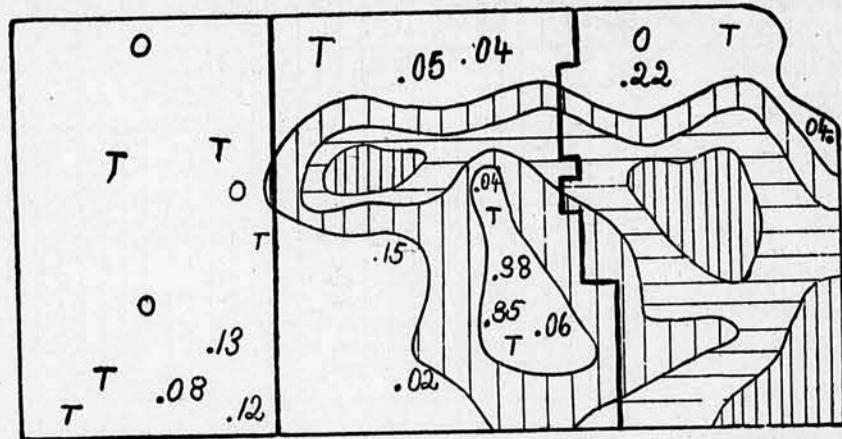
Barton.—Wheat well improved but more rain is needed; corn coming up nicely; alfalfa growing finely; pastures sufficient for cattle.

Butler.—Corn coming up nicely; oats and wheat fine; pasture good; prospect for large fruit crop, except that the canker worm is here.

Cloud.—Very favorable week; everything looking fine and making rapid growth.

Cowley.—A growing week; some wheat in the "boot," planting mostly done; fine prospect for fruit.

Dickinson.—Another good growing week has almost assured a big wheat crop; much corn being planted, some coming up; oats, grass and gardens on the jump; canker worm in orchards.



ACTUAL RAINFALL FOR WEEK ENDING APRIL 25, 1896.

too wet at the close; corn mostly planted and cultivation has commenced.

Coffey.—A fine growing week, but too wet for farm work; canker worm eating apple leaves; trees full of fruit.

Greenwood.—Much cloudiness all week; Friday's rain of great benefit to all crops; canker worms damaging orchards.

Johnson.—All vegetation has grown finely.

Labette.—Fine growing weather; wheat growing very fast; oats doing well; corn coming up very nicely—planting not finished; pastures fine; grape vines shaping fine crop; peaches good, strawberries fair; canker worms damaging orchards.

Marshall.—Good growing week; all fruits give promise of fine crop; corn-planting well advanced.

Miami.—Corn coming up well; oats and flax doing well; fruit prospect never more promising; too wet for farm work last of week.

Montgomery.—A warm, moist week; grass and crops, ten days late at first of month, are now up to normal condition; nearly all corn planted, stand good, cultivation progressing; fruit has set fairly well except peaches on low ground.

Neosho.—Best growing week this year.

Osage.—Too wet for much farm work; early-planted corn is ready to cultivate; fruit prospects very good; gardens and pastures in first-class condition.

Pottawatomie.—Potatoes, corn and gardens coming up well; grass growing nicely; canker worm damaging orchards.

Riley.—Wheat knee-high and jointing; much corn planted this week; all

Harvey.—Corn-planting well over, some cultivating done; wheat and oats growing rapidly; fruit of all kinds developing nicely; pastures fully supporting stock.

Kingman.—All crops doing well and ground in good condition; corn-planting well along, and more than usual going in; apples, peaches and apricots promise abundance.

McPherson.—Fine growing weather; wheat looking fine; corn and potatoes coming up; grass good start; fruit promises large.

Marion.—Wheat improved; oats do not promise as well as last week; corn about half planted; fruit good except insects in orchards.

Mitchell.—All crops in good condition.

Osborne.—Weather complete; wheat and oats doing fine; much corn being planted, some early-planted coming up.

Ottawa.—A favorable week for all growing crops.

Phillips.—Planting progressing rapidly, with ground in excellent condition; fruit doing finely; wheat, oats and rye doing splendidly.

Reno.—Fine growing week, everything coming on rapidly; maple seed ripe.

Republic.—Oats and wheat never looked better, everything is promising.

Rice.—Crops looking fine.

Russell.—Heavy rain and hail, damaging fruit and window glass.

Saline.—A good growing week; wheat, oats and alfalfa making a wonderful growth.

Sedgwick.—A very growing week, favorable for all crops; some planting, others cultivating corn; wheat looks fine; chinch bugs in places.

Sumner.—Good growing weather; wheat, oats and corn looking fine;

planting of all kinds about done; ground wet down about two feet.

WESTERN DIVISION.

A good week for farm work and crop growth. Wheat is growing rapidly and presents a promising appearance except where inferior seed was used. Oats, barley and prairie grass growing rapidly. Much corn is being planted. Fruit prospects very good. Some local injury by frost of the 18th.

Clark.—All crops doing well.

Finney.—Wheat, alfalfa, oats and barley looking fine since the rains; farmers in good spirits.

Ford.—Wheat looks first-class, some jointing; fruit prospects bright; prairie green and good pasture for cattle.

Grant.—Peaches nearly all killed by frost of 18th; wheat, barley and oats doing finely; planting going on rapidly.

Meade.—The best prospect for crops of all kinds in the history of the county; cane and corn-planting in full progress.

Morton.—A good week for spring work; garden planting lively; soil in fine condition for plowing; burned prairie looking green.

Ness.—Everything in prime condition; excellent growing weather.

Rawlins.—Small grain doing finely; considerable corn planted; sod ground in fine condition to break.

Sheridan.—Crops growing nicely; corn-planting general; grass good for the time of year.

Thomas.—Fine growing week and crops of all kinds have taken advantage of it; grass doing well; apples and cherries in bloom.

Trego.—Warm, moist, cloudy week; grass has grown rapidly; a large acreage being planted to corn; ground in excellent condition for early cropping; frost of 18th inst. injured early corn and gardens.

Heating of Corn Shipped via Gulf Ports.

The diversion of shipments of corn to the gulf ports, which has been such a feature in the winter grain trade and which has been made possible by the action of the railways, may be less satisfactory to the people interested in it than would appear at first sight. The shipments by way of New Orleans and Galveston have been unusually heavy, and have been largely of the new crop corn, as supplies of old corn have been scanty. Receivers at Chicago have been unable to compete successfully for business, and they may take some satisfaction in knowing that a great deal of corn taken out South has reached Liverpool in bad condition. A great deal of business has been done at St. Louis on "guaranteed to arrive" terms, which has resulted in material losses to the shippers. The shipment of much of the new corn even for northern ports has been looked upon by conservative shippers as rather a doubtful undertaking, to say nothing of the greater possibilities of damage in heating on the southern trip.—*Chicago Tribune*.

As the foregoing is the only report of corn shipped via gulf ports arriving in bad condition, we are not disposed to credit it. The corn of the crop of 1895 was drier at harvest time than any crop harvested in years, and it is not at all likely that any of it arrived in Europe in bad condition unless it was wet in transit.—*American Elevator and Grain Trade*.

Publishers' Paragraphs.

J. C. Ayer & Co., the Lowell, Mass., medicine manufacturers, have published a little book in which those who have been benefited by taking Ayer's medicines are allowed to tell their own story.

Poultry fanciers intending to buy Barred Plymouth Rock or Light Brahma eggs will do well to look up Henry E. Peers' "ad." in this issue. He offers his best eggs at half price. He took first, second, third and fourth on Barred Plymouth Rock cockerels at State show, 1896.

FAIR SECRETARIES PLEASE COMPLY.—Secretaries of all State and county fairs are requested to apply to us for copy for insertions in premium lists of a special premium we intend to present to every winner of a sheep premium at all the 1896 fairs. The special premiums will only be given where officially referred to in the premium list of the fair. Willm. Cooper & Nephews, Galveston, Tex.

Send for new program, including list of trotting purses offered, for inaugural meeting of the El Paso County Horse and Bicycle Association, May 30, June 1, 2 and 3, 1896, to J. W. Miller, Secretary, Room 2, Bank Building, Colorado Springs, Colo.

Horticulture.

STRAWBERRY CULTURE.

From Bulletin No. 53, Kansas Experiment Station,
by Profs. S. C. Mason and F. C. Sears.
(Continued from last week.)

MULCHING.

Not all strawberry-growers agree as to whether mulching for winter protection is profitable, but aside from a few counties along the eastern border, there is little question as to the advantages of it, and in the more central portions of the State one should never do without it.

Our practice has been to wait till the ground is frozen somewhat firmly, provided this occurs in December, then put two or three inches of straw evenly over the whole bed. Usually after a little settling it mats together enough so that it does not blow around badly. If only put on over the rows where it is needed, the wind catches under it too readily.

If the straw is foul or full of unthreshed grain or chaff, it is apt to cause trouble from sprouting next season.

Clean, bright wheat straw we have found to be the best, as it is stiff enough not to mat down too closely. Some recommend coarse damaged hay, as free from seeds and grain.

In Bulletin No. 10 of the Missouri Experiment Station Prof. Keffer describes an experiment in the use of forest leaves for mulching, which were found to mat down so closely as to hold moisture and rot the plants. A covering of some kind, in this country of so little snow, is a great help in protecting the surface of our lightest soils from drying out and blowing, and also doubtless protects the plants from the sudden extremes of heat and cold so common to our winters.

This covering is found to retard the crop several days in the spring, so if early berries are wanted the straw should be opened up over the rows quite early. On the contrary, it may be made the means of prolonging the season a little by leaving it in place as late as possible and not have the plants drawn and bleached beneath it.

We usually remove about half of the straw from the bed, leaving the rest between the plants and in the walks to keep the dirt and grit from the berries.

BOXES AND CRATES.

The grower who has a good prospect of berries to sell should not delay getting a supply of boxes and crates ready until the picking season is upon him, for they cannot always be had at a day's notice.

Prices vary somewhat, but our last purchase of oblong poplar boxes cost \$1.85 per thousand, and crates holding twenty-four 24 quarts each cost \$6.25 per hundred. These come in bales, and the work of putting up may come in at odd times, but should be out of the way before the rush of berry picking begins. There are few markets where anything but a quart box is demanded, and it would seem to be only good business morals that this should be a real quart. As the trade runs, many short quart boxes are sold, and the honest grower sometimes has trouble in getting honest boxes in which to market his fruit.

The full quart box has the "high bottom" which the average customer imagines is intended to defraud him, just as the short box has, and is so built that two rounded boxes of fruit may be placed in the crate, one above the other, without bruising the lower layer. Even if filled rounding full as picked, they will be sure to settle to level or less in shipping. A crate occasionally appears in our market holding sixteen boxes instead of twenty-four and this will no doubt be a very popular size in which to handle a portion of the crop, where one has a home market.

PICKING AND HANDLING.

The question of pickers is sometimes a vexatious one. Women and girls do the most careful work, as a rule. There are boys who will do as good work as can be done, but a careless, heedless picker should hardly be retained at any price. The rules to be rigidly enforced are these: Pick the berry with the least possible handling,

leaving the hull on and cutting off the stem with the nail. Pick no unripe, decayed, bird-picked or otherwise imperfect berries. Pick clean. Pick without damage to what is left. Fill up the boxes fairly and honestly.

If the field is at all a large one, some system of tickets by which to pay the pickers will have to be adopted. By all means have some system by which every crate of berries can be traced to the picker. Every box should be inspected by a responsible person before it goes to the market. Do not allow the pickers in the field while the berries are wet, unless they are gathering for immediate use. The grower once having gained a reputation for furnishing a high grade of berries to his home market should guard this jealously by sending nothing below this standard to his customers. When this is done he will find that the imported fruit will spoil in the crates as long as he has fruit to supply the demand.

RENEWAL.

Some growers plant in the spring, secure the matted row, gather the next season's crop of berries and then plow up the ground, having a new planting to take its place.

Others take off a second crop before plowing up. We have practiced the following plan: As soon as picking is over, the matted row is cut down to

has not since given good results. In the following table are twenty sorts which have given the best returns during the past two years, arranged in order of ripening.

These are regarded as the best on our list, considering the season, the two earlier, Ella and Covell, being included on account of earliness and fair quality rather than productiveness, and Gandy, the latest, because, though often disappointing in yield, it gives fine, firm berries later than anything else we have.

Captain Jack, Beder Wood, Martha and Parker Earle we regard as excellent varieties to plant as fertilizers. Warfield has not only been the most generally productive, but the fine appearance of the fruit finds it a ready sale, and it is firm enough for any but long-distance shipments. Its yield during the past two seasons has been at the rate of 8,000 quarts to the acre, and these results are fully sustained by its record since 1891. That the varieties given in this table will prove best for all soils and situations we do not claim, and only offer this list as a suggestive one. There are a number of other varieties of good repute which we have not tested sufficiently to report upon.

Irrigated Fruit.

The advantages of irrigation in or-

	5	10	15	20	25
ELLA.....	P				
COVELL.....	P				
CAPT. JACK.....	P				
BOYNTON.....	I				
SHUSTER'S.....	I				
BUBACH.....	I				
BARTON'S ECLIPSE.....	I				
WARFIELD.....	I				
CRESCENT.....	P				
LADY RUSK.....	I				
HAVERLAND.....	P				
BEDER WOOD.....	I				
GREENVILLE.....	P				
NEW DOMINION.....	P				
MARTHA.....	P				
PARKER EARLE.....	P				
LIDA.....	P				
SAUNDERS.....	P				
MANCHESTER.....	I				
GANDY.....	P				

BEST TWENTY STRAWBERRIES.

Table showing best twenty varieties during seasons of 1894 and 1895, arranged in order of ripening. Productiveness indicated by length of black lines; one space equals one quart per fifty feet of row.

P—Perfect flowers. I—Imperfect flowers.

six inches wide, leaving this just to one side of the center, so that only last year's plants are included.

We have done the work by cutting down with spades along lines set at proper distances and then cutting away the vines with sharp hoes, afterward raking the straw mulching, vines and all, into piles and hauling it off. The space between rows is then irrigated, if in need of water, and put in fine, mellow condition with cultivators with small teeth. The young runners will soon occupy this space with a fresh matted row. By this means we have taken off three and even four crops.

The most serious objection to allowing a bed to remain several seasons is the prevalence of the rust or blight on the leaves. This is a fungous disease (*Sphaerella fragariae*) which spreads much more rapidly in warm, wet weather, and is worse on old beds than on young ones.

Some varieties are much more subject to this disease than others, as is shown in bulletin No. 26, from this station. Spraying with Bordeaux mixture has been only partially successful in keeping this pest in check.

VARIETIES.

In Bulletin No. 26, the varieties then fruited one season were reported upon. Of those given a high rank, the majority still hold that place, though Bomba

chards are well described by John Tan-nahill, of Columbia, Neb., as follows:

"One hundred and ninety apple trees in my orchard yielded the fall of 1894 but twenty bushels, and last year, or the fall of 1895, I got from the same trees, after irrigation, over 300 bushels of apples. The trees are twenty feet apart. I run water between the rows and find it does not take nearly so much water this winter as last, because of the subsoil retaining the moisture from last winter. As an experiment I left some apple and cherry trees unwatered, and they were in bloom just six days before those that were watered, and unwatered apricots bloomed three days before those that were watered, except one apricot tree that I mulched after watering, which bloomed six days later and this tree was overloaded with fruit. The others that were watered, being hurt some by the spring frost, were not so full and the consequence was the fruit was much superior. Two of the trees that were unwatered died and seven had some fruit set, but it kept dropping off, and what remained on the trees when ripe was very poor, almost worthless. Ninety-three of my cherry trees were irrigated and eighteen were not irrigated. Where irrigated they blossomed two days later than those not irrigated and they were all heavily laden with fruit, large, juicy and of

excellent quality, none dropping off or drying up, and out of the eighteen unwatered ten died and the remaining eight bore very inferior fruit, hardly worth picking, and making about six inches growth of wood, while those watered made twelve inches growth. These cherry trees were watered the last week in December, 1894, and received no water before or after. Apple trees that were watered held the fruit last fall during the high winds much better than those unwatered."

HOW TO CHOOSE A MOWER.

Simple Points to be Considered in Buying Mowing Machines.

The following five points will be found valuable in selecting a mower:

First, the pitman should be placed so that it does not wobble. To determine this look at the crank wheel which moves the pitman. If it leans over the pitman will wobble, wear and heat. If it is vertical the pitman will move straight back and forth like the piston of a locomotive. The pitman should be long and with very little slant. It should be made of steel, with a brass head, and should not have more than two parts.

Second, there should be some good means of lining up the cutter-bar. When years of wear cause it to sag backward the knives are thrown out of register and the machine made practically worthless. This is avoided on at least one make of mower by means of making the "drag-bar" adjustable. Two or three turns to this bar will bring the knife forward into line and add years of usefulness to the machine.

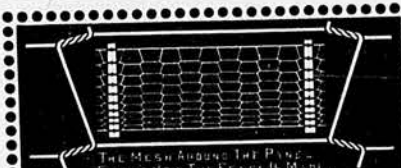
Third, the knife should act on the principle of a pair of shears, the knife being one blade and the ledger-plate the other. To prevent certain stubborn grasses from slipping away uncut the ledger-plate should by all means be serrated. These serrations will permit the machine to be run as slowly as desired and to be started anywhere without backing.

Fourth, the gears should be as simple as possible. A mower with only two gears and pinions, if made properly, is much to be preferred to one with the triple gear.

Fifth, light draft and freedom from wear are beautifully accomplished by the use of roller bearings or ball bearings in the shafts and gears; therefore it seems folly to pay good money for a machine with friction bearings when there is an excellent roller-bearing machine on the market.

If a farmer follows carefully these few simple points he will make a wise purchase, no matter whose name is on the machine. He certainly will make no mistake if he buys a Deering.

The Botanist of the Indiana Experiment Station gives the following concise directions for preventing potato scab: "Put two ounces of corrosive sublimate (a poisonous substance, that needs to be handled with caution) into hot water in a stoneware or glass vessel. When dissolved put it into a wooden tub or barrel and add water enough to make fifteen gallons. Into this put the potatoes intended for seed and let them remain for an hour and a half or two hours. After taking out of the bath, cut and plant as usual. The same bath may be used several times, but as it is constantly growing weaker, the potatoes should be left in longer, or some fresh solution should be added. Do not use metal vessels, and do not leave the material where persons or animals may drink it."



Keystone Woven Wire Fence

Will turn your stock. Perfectly safe. 25 to 58 inches high.
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In the Dairy.

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

PROFITS IN DAIRYING.

Paper read before the Improved Stock Breeders' meeting, at Topeka, on January 7, 1896, by A. E. Jones.

Agreeable to the request of your Secretary, I have been led to present a few stray thoughts on the above subject. Although not a new one, from a financial standpoint it is interesting to know more about the benefits to be derived from this great industry in Kansas. To begin with, before engaging in any new venture, we ask what is there in it? or, in other words, can it be made to pay?

Before getting well into our subject, I will ask a few questions in regard to different occupations of interest to the average farmer. What is the matter with the horse business? Is there any profit to be made at this time? How about hog-raising? What can the farmer make in raising hogs for the market at present prices? Is the sheep industry all right, and paying any dividends? If not, who can give us the remedy? Are there any farmers here who are raising beef cattle for the market? How about the price? Are you getting pay for the raw material at market rates and fair pay for your labor? How about the price of corn, wheat, oats and potatoes? Where have the margins gone to in raising these products? If the farmer is making money at these prices, what must he have been doing ten or fifteen years ago? Perhaps it is all right. It is simply getting used to a new condition of affairs. It means that we must economize a little more in our expenses; cut a little off here and some more there, and look out for the pennies. You know about the dollars.

When prices on all our productions were selling at high rates, we were spending money lavishly and never counted the cost. It takes more effort to get money now than it did formerly. Any of your merchants will tell you this. Competition has worked a great revolution. The trader must advertise and try to prove that he is selling lower than any one else. It takes him longer to get rich than it did twenty years ago. He must sell at a less per cent. profit and work harder. The groceryman will tell you that it costs more to run his business than it did in years past. He must go out and solicit orders and then deliver the goods. He must buy flour, salt and other heavy goods in car lots to get the lowest figures. His customers must be treated like "nabobs," always meeting them with a smile. If he don't, the other man that is a smooth talker is liable to pull trade away from him. Competition is a good thing for the buyer, but it makes extra work for the seller.

There is competition in nearly all trades except dairying, from the professional man down to the popcorn vender. In these days of depression in prices on so many things, and amid the continual cry of "hard times" and the general dissatisfaction among manufacturers and farmers, it is refreshing to know that there is one occupation that has kept steadily on its way despite all obstacles and shows a comfortable balance on the "cow" side of the ledger.

It is my purpose to discuss this subject fairly, and not overdraw or paint in colors that might be deceptive. You will be interested to know what sort of cows make a profit and what kind brings loss to her owner; what feeding and care will give satisfactory results, and what system is responsible for the greatest losses. Last year a gentleman told us at one of these meetings about the enormous profits in the chicken business, and I have wondered if a great many had not engaged in that calling after hearing so flattering a report. If a guarantee had been offered that we could get \$25 or \$50 for every bird, I believe the chicken business would catch most of us, for that is certainly better than could be done in any other occupation that I know of. We must all be our own judges and take into consideration what kind of business we have a liking for, and that

best adapted to our circumstances; still, what we hear at these meetings is for our general good, and we must take it for what it is worth.

I can think of no calling but what requires work, and if any one believes the dairy business is boy's play, they probably know more about it than I do. If I tell you that butter will bring 50 cents a pound in your nearest city, why, set me down as the fellow that needs watching. It is enough for me to say that there is a fair profit in the dairy business if well managed, and that is more than can be said of many other trades. The meek, gentle-eyed cow is proverbially a money-maker under favorable conditions, but she may be kept at a loss and you not know it. If you think that a \$15 cow with \$15 worth of feed in a year is going to make any one rich, why, just keep pegging away and let your own costly experience be a guide in the future. The cow just mentioned will give in return for her heredity and parsimonious treatment just about what has been expended on her, viz., \$15 a year, and possibly in addition to this a \$7 calf. I hope the day will soon come when such animals will be known only by hearsay.

The farmer that is isolated from markets and is obliged to barter his butter at the store for 8 and 10 cents a pound will never get wealthy, and the best thing he can do is to join with his neighbors and try to induce some one to put in a creamery. The cow worth from \$50 to \$75 and given \$30 worth of feed in a year, if judiciously handled, near a good market, will make a profit for her owner. She should produce 6,000 pounds of 4 to 4½ per cent. milk, which, sold to a creamery at the average price of 80 cents a hundred, would return \$48 to \$54 a year. Besides there would be the skim-milk, the calf and the manure. Twenty dollars to \$25 is considered a good profit on a cow after paying for feed and labor, saying nothing about the by-products. The cow that produces 300 pounds of butter a year will do so at a cost of 10 cents a pound, if she is well managed. The average cost, however, is about 12 cents a pound, based on the price of feeds from year to year. The cow that produces only 200 pounds a year would do so at a cost of 15 cents a pound, and the 150 pounds a year cow at a cost of 20 cents, taking it for granted that the feed is the same in either case.

The solution of this question is, maximum quantity at minimum cost, or, in other words, make the cow produce the greatest amount possible at the least possible expense. And in order to do this we must dairy 365 days in the year. A good cow may be ill-treated and refuse to give any returns for the little feed and care she gets. If you let her stand out over night in the mud, cold and sleet, don't expect her to give a bucket of milk in the morning—or in the evening, either. The man (or rather the object that goes around calling himself such) that will do this ought to be kicked by a cow and a mule in turn until a little sense is driven into his anatomy. A cow should have as warm a place almost as yourself, and when you meet one in the road take off your hat to her. The cow is hard to beat as a taxpayer, yet some men (or that object referred to awhile back) will beat her without any provocation, and in the end get beat themselves, for no cow will do her best under such circumstances. I wonder how many that are here saw the three breeds of dairy cows at the World's Fair. They were the finest specimens of their race—brushed, curried, tended with the utmost care, fed and watched for any unfavorable symptom. It is no wonder they were in the pink of condition and made the records they did. We are not supposed to give as much time to our cows as was done at the World's Fair, but then just for our own financial benefit we can be decent to them.

The profits in dairying depend, first, on the kind of cow that we start with, and the next thing is the matter of feed and attention. If there is any profit at all, it is from those cows that are well bred and well fed. If the demand for good butter and cheese continues and other farm products rule at a low figure, we must devote more time to

dairy matters. Remember, it is no easy job to pick up a herd of good cows at random. The safest plan is to get a few good ones and then buy a registered bull and breed up.

According to statistics population in the United States increases faster than dairy cows. There are in the State of Iowa nearly 800 creameries and her farmers are better off than the same number in any other Western State. Kansas should have 1,000 creameries, located wherever feed can be raised; and, if managed as well as some we now have, there would be no trouble about their getting the milk, and the condition of the farmers in the vicinity of these creameries would be much improved.

When we talk about profits in dairying, there must be a close scrutiny of every part of the work, from milking the cow to the finished product. One great leak in making butter was the method of setting milk. Of course, a dozen years ago it was the best that could be done, but now we have the cream separator, which is in use by nearly all dairymen having twelve cows and making butter. The only thing that can be said against them is the price. But the work done by them is all right. A man told me, a short time ago, who had a separator on trial, that he took the milk from his eighteen cows, set it in the old way for three milkings, and then warmed it up and ran it through the separator. The cream that he recovered made five pounds of butter. This, by the old method, would have been an entire loss. This is one of the many ways that losses may take place in butter-making. Another loss may occur by having the cream improperly ripened or by mixing sweet and sour cream together.

I was standing on the sidewalk, early one morning last summer in this city, when a man from the country drove up, who was running a small dairy and was churning every morning. He had in his wagon a five-gallon can part full of buttermilk. I observed it as he was pouring out some for a customer. I should say there was at least two pounds of butter in the can that had gathered on his trip in. I made the remark to him that there must be something wrong about his churning, and he said: "My customers don't object to having a little butter in their buttermilk." He was selling it at 10 cents a gallon, and on every five-gallon can there was a loss of from 30 to 40 cents, and yet this man said he was too poor to take a dairy paper.

The pleasant feature about dairying is the profit. If the profit is not found, there is no pleasure in the work. This is a general law, but it applies with a special force to dairying, because profitable dairying is a fine art, and success is won by strict attention to business. The man who looks upon a cow as a necessary evil, can never be a decided success as a dairyman, any more than a slovenly farmer can make a success at farming. The price received for butter depends chiefly upon the taste of the consumer. The intelligent butter-maker studies the tastes of those people who are willing to pay well for what suits them, and then he learns how to make that kind of butter. It is the only way he can get their money. It is not the expense of manufacture that fixes the price. The consumer cares not that the butter perhaps cost untold labor on the part of some one who churned and prepared it for market. If inferior, it sells for an inferior price, regardless of the cost of production, and if it is superior, it sells at top prices, though made with ease and little expense. And the beauty remains that the cost of producing the best butter need not be greater than that of producing goods of a poorer quality, in fact the bad article is generally made at the greater cost. Ignorance is expensive. I think it will make every one who owns cows a better dairyman to sit down and compare the prices of dairy goods with those of other farm products. If your cheap grains can be converted into 20 and 25-cent butter and 10-cent cheese or \$1 to \$1.15 per hundred for milk, it will pay better than selling the raw material and robbing the farm of all the fertilizing material that much of the land is already in need of.

There is no State that can raise feed



More Brains

Are often required to determine what shall be "kept out" of a harvester than to say what shall "go into" it. It is so easy to do the "wrong thing"—and the wrong thing has such an inviting appearance—that less experienced manufacturers than the McCormick Co. frequently find themselves "putting their foot in it" and building a machine one season which they are obliged to abandon a season or two later.

Because a good thing is a good thing in its place, it doesn't necessarily follow that it is a good thing in a harvester or mower.

Fight shy of the machine whose best recommendation is that "it seems to have a bright idea" in its make-up. Remember this every day in the year:—McCormick Machines will work where others fail.

The makers of McCormick Machines have been at it for sixty-five years. By long experience they have found out how to build the best binders and mowers.

The new McCormick Light-Running Open Elevator Harvester and Binder, the McCormick No. 4 Steel Mower and the McCormick Corn Harvester are unequalled for capacity, light draft, efficiency of service and long life. Built, sold and guaranteed by the McCormick Harvesting Machine Co., Chicago.

Agents Everywhere.

cheaper than Kansas. Creamery butter made in this State stands well in the markets and sells as high as the average from the best creameries in other States. This is a matter that concerns a great many of us. Shall we leave other farm operations and engage in dairying exclusively? My advice is, where you have a market there is nothing more certain of quick returns than dairying. Mixed farming, with some portion of it devoted to dairying, is very safe. Where we see the best farms we find that the stock is of some improved breed, and nothing is more certain of adding fertility to our soil than dairy cattle. The man that sells to a creamery has ready cash and can save on his purchases, and is more independent than the farmer who waits a whole year for a crop to mature.

I AM TIRED.

Everybody Is Tired--Sudden Hot Weather Does It--Every One Should Be Cautious.

Depression of the nervous system at the approach of spring is the cause. General lassitude, dull, heavy sensations, continual tired feeling, with irregular appetite, and sometimes loss of sleep. Pe-ru-na meets every indication and proves itself to be perfectly adapted to all their varied peculiarities. Pe-ru-na invigorates the system, rejuvenates the feelings, restores the normal appetite, and produces regular sleep.

That tired feeling, which is the natural result of the depressing effect of warm weather immediately after the invigorating cold of winter, quickly disappears when Pe-ru-na is taken. Thousands are daily testifying to its priceless benefit.

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There are thousands of them everywhere. A few bottles of Pe-ru-na would do them untold benefit. As a tonic and nerve invigorator it has no equal. It builds up the nerves, it gives strength to the circulation, and at once restores the appetite and digestion. No feeble woman should be without Pe-ru-na.

Send for free spring book. Address The Pe-ru-na Drug Manufacturing Co., Columbus, O.

Beans as a Field Crop.

It is a common remark that land which is badly run down, is too poor to grow even white beans. From this you might get the idea that the best of land was not needed for beans. This is not correct. You want first-class wheat soil, in condition fertile enough to grow a large crop of this grain, and then you need a dressing of good stable manure on it for best results. The land, of course, should be underdrained, either naturally or with tiles, the same as for wheat. Plow about three weeks before planting time, and at once work down finely, so as to save moisture, and start any weed seed that there may be in the soil to sprouting. Then keep on working from time to time, so as to destroy the weeds and prevent their troubling you later on. This is an important point, as weeds can be destroyed very cheaply at this time, and will be much in the way afterwards, if allowed to get started. The crop should be clean at harvest time. The soil should be worked down very fine and firm, by alternate harrowing and rolling. It should be in about the same condition that a good wheat-grower wants his land before drilling in his wheat. This fine, firm seed-bed makes the beans start quickly; and if they come up quickly, you can get to cultivating quicker, and check the evaporation of water quicker, and keep weeds down better. Cultivate first with a cultivator having quite a number of small teeth that won't throw earth. As soon as the plants are strong enough to stand it, run over them twice with a weeder, to break the crust in the rows, or prevent its forming, and to destroy every little late weed. I use Breed's Universal weeder. My bean rows are thirty inches apart, so the weeder is too wide for use in beans lengthwise of rows, as commonly made. Take out a few teeth from each end, so it will only harrow two rows at once. The last time I use the weeder I go crosswise. But I will go back a little, and say that I use a plump half bushel of seed per acre, put it in with a regular bean drill, about two inches deep, for my soil. I try to sow after a rain, as soon as the soil is dry enough, so the beans may come up without any crust to interfere. If it should rain right after planting, I would harrow the surface, or run over with weeder, if I could do it and not disturb the beans, so as to prevent a crust forming. I grow the medium or early pea varieties, and prefer to plant from the 5th to 10th of June. However, I have had good success planting as late as June 20. Would not like to risk planting any earlier than June 5. Never work in beans with cultivators or weeders when vines are wet with dew or rain, but always get to work as soon as it is dry enough after a shower. The tillage, of course, should be shallow, so as not to disturb the roots, but let it be frequent until the pods begin to set, then quit. In a dry season, if the tillage is not more than one and one-half inches deep, and a board on to rub out tooth marks, such as we use in potato field, I cannot see what reason there is for stopping the cultivation. I am able to harvest my crop in about ninety days from planting. I use a bean harvester. It does better work than is ordinarily done by hand, if the crop is in the right condition. There is less shelling and not so much dirt as when the crop is hand-pulled by boys and girls and cheap help. Much depends on how the beans are forked into winrows, however, after the machine. We fork four rows into one. If it is dry weather we can house the second day after pulling, sometimes. If the weather is bad, we turn every day to prevent the beans on the bottom of winrows from being injured, whether they are pulled by hand or machine. In good weather one can let the top of winrows dry off before turning, but in lowery weather they must be turned often, wet or dry, or the beans next to the ground will get discolored. In wet weather little damage will be done if one is prompt about doing the turning. Before drawing in we double the winrows, putting eight rows into one. Then a team is driven between the winrows and the beans are pitched onto the rack with steel barley forks, a man pitching on

from each side, and one loading. We throw them back lightly in the mow, and avoid tramping on them all we can. The man who stands on the mow and pitches them back to a second man always has a board placed under his feet to prevent packing the beans unduly where he stands. The beans may be threshed out at once if very dry, same as you would wheat, after drawing in; but I think it better to let them lie and heat up and get entirely cool. Then they may be safely barreled and marketed. We always thresh with a regular bean thresher. Our beans are actually turned into cash, some years, in one hundred days from planting. The yield per acre varies between fifteen and thirty-two bushels. It is not quite equal to the yield of wheat from the same ground. For example, I had twenty-four bushels of beans per acre and the wheat following made thirty bushels. As there are many beans grown about here, we have large buyers who take them as they come from the thresher, and have every appliance for cleaning and sorting them cheaply. They pay for the marketable beans you take them, so the better one does his part the more pay he gets. I grow twenty or twenty-five acres a year in regular rotation. Beans can be grown to excellent advantage in a three-year rotation of clover, beans and wheat. Wheat does very well after beans, where the culture has been thorough and clean. I do not plow the bean stubble, but simply harrow it, thus reducing the cost of growing the wheat. I can thoroughly subdue quack grass and grow beans at the same time. If very bad I would plow in the fall and then cultivate and work all the next May, thoroughly, then re-plow and work down and plant beans, and I will make an end of quack. Again, the bean fodder is valuable as a food for sheep and cows. We get from one-half to one ton per acre, and it is every bit as good as clover hay to feed the cows. Our cows like it. Our milk shows a higher percentage of butter fat when we feed it. Bean fodder, however, should be fed lightly. It is no small part of the profit of the business that we are able to get so much feeding value out of the fodder. In addition to the other advantages given above, beans are always a cash article, and usually bring a good price, and the work is soon done and the money received.—H. A. Wilder, Akron, N. Y.

Hall's Vegetable Sicilian Hair Renewer is, unquestionably, the best preservative of the hair. It is also curative of dandruff, tetter and all scalp affections.

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For the General Conference

of the M. E. church, at Cleveland, O., May 1 to 31, inclusive, the Nickel Plate road will sell tickets at one fare for the round trip, on sale April 29 and 30 and May 1 and 12. Three excellent through trains leave Chicago—at 8:05 a. m., 1:30 and 9:20 p. m. Further particulars cheerfully given on application to J. Y. Calahan, 111 Adams street, Chicago, Ill. 79

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Santa Fe Route—One Fare (Plus \$2) for the Round Trip.

These tickets will be sold to various points in Oklahoma, Texas, Arkansas, Missouri, Arizona and Indian Territory. Dates of sale will be April 7 and 21, and May 5, with final limit of twenty-one days from date of sale. For tickets and all particulars, call on J. P. Rowley, City Ticket Agent Santa Fe Route, Topeka, Kas.

Ho! for Cripple Creek.

Remember that the Chicago, Rock Island & Pacific is the only line running directly from the East to Colorado Springs, the natural gateway for the Cripple Creek district. Colorado Springs lies at the foot of Pike's Peak at its eastern base, and Cripple Creek is part way down the southwest slope of Pike's Peak and near its western base. Two all rail routes from Colorado Springs are offered you. One by the Midland railway up Ute Pass, via Summit, to Cripple Creek. Another over the Denver & Rio Grande, via Pueblo and Florence, to Cripple Creek. Take the Great Rock Island Route to this wonderful gold mining camp. Maps, folders and rates on application. Address JNO. SEBASTIAN, Gen'l. Pass. Ag't, Chicago.

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Carnahan's Tree Wash and Insect Destroyer

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

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The Veterinarian.

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

SHOTES NOT DOING WELL.—I have a bunch of shotes that are not doing well. What is advisable? J. E. B. Belleville, Kas.

Answer.—Turn them out of the close pen into a large lot or field where they can get some green food, and feed more swill and less corn.

SORE ON HORSE.—I have a horse that has a sore on his ham that looks as if scratched by a cat. It has been there for a week and is spreading.

Inman, Kas. G. M.

Answer.—Bathe the wound all over and around the edge with tincture of iodine once a day until it stops spreading and takes on a healthy appearance, then apply equal parts of tincture of iodine and water once a day till healed.

HORSE SWEATING.—I have a driving horse that sweats so badly that I think there must be something wrong.

Enterprise, Kas. J. C. T.

Answer.—Give the horse one of the following powders twice a day in his feed: Powdered nuxvomica, 2 ounces; nitrate of potash, 4 ounces; mix and divide into 16 powders. Give moderate exercise every day, or when not driving turn him out in a large yard.

HARD MILKER.—I have a young cow that is so hard to milk that it is almost impossible to squeeze the milk out of the teats. They seem all right except that the opening is very small. If there is no remedy the butcher may have her.

Neosho Falls, Kas. J. A. L.

Answer.—The most satisfactory remedy is to send her to the butcher. Enlargement of the opening is sometimes attempted by keeping a small plug of wood in it between milkings, but the teats generally get sore and cause plenty of trouble but little gain.

Deafness Cannot be Cured

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

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

F. J. CHENEY & CO., Toledo, O.
Sold by druggists, 75c.

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If You Intend to Attend

the general conference of the M. E. church, at Cleveland, May 1 to 31, inclusive, why not use the Nickel Plate road? One fare for the round trip for that occasion has been authorized, and tickets will be on sale April 29 and 30 and May 1 and 12. For routes, rates, time-tables, etc., address J. Y. Calahan, General Agent, 111 Adams street, Chicago, Ill. 80

Millions of Gold

In sight at Cripple Creek, Colo. Only twenty-three hours from Topeka by the Santa Fe Route, the only broad-gauge route passing right by the "Anaconda" and all the famous mines. See the nearest Santa Fe agent for all particulars, or write to Geo. T. Nicholson, W. J. Black, G. P. A., Chicago, Ill. A. G. P. A., Topeka, Kas.

Homes for the Homeless.

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

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

Horse Owners! Use



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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blomishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

MARKET REPORT.

Kansas City Live Stock.
KANSAS CITY, April 27.—Cattle—Receipts since Saturday, 2,288; calves, 191; shipped Saturday, 172 cattle, no calves. The market was generally 10c higher. The following are representative sales:

SHIPPING AND DRESSED BEEF STEERS.			
No.	Ave. Price.	No.	Ave. Price.
51.....	1,564 \$3.85	22.....	1,540 \$3.85
23.....	1,511 3.75	33.....	1,413 3.70
29.....	1,498 3.65	10.....	1,346 3.65
20.....	1,170 3.60	6.....	1,338 3.60
19.....	1,200 3.55	17.....	1,326 3.55
21.....	1,348 3.50	6.....	1,271 3.50
4.....	1,255 3.45	11.....	1,182 3.45
4.....	1,080 3.40	1.....	1,410 3.25

TEXAS AND INDIAN STEERS.			
No.	Ave. Price.	No.	Ave. Price.
26.....	1,093 \$3.45	25.....	1,035 \$3.45
43.....	1,100 3.40	38.....	1,077 3.40
29.....	1,042 3.40	47.....	957 3.10
28.....	914 3.25		

WESTERN HEIFERS.

UTAH STEERS.			
No.	Ave. Price.	No.	Ave. Price.
65.....	1,650 \$3.90		

COLORADO STEERS.

TEXAS AND INDIAN COWS.			
No.	Ave. Price.	No.	Ave. Price.
3.....	813 \$2.50		

NEW MEXICO STEERS.

COWS AND HEIFERS.			
No.	Ave. Price.	No.	Ave. Price.
10.....	414 \$3.55	12.....	700 \$3.45

STOCKERS AND FEEDERS.			
No.	Ave. Price.	No.	Ave. Price.
4.....	631 \$3.80	8.....	727 \$3.85

HOGS—Receipts since Saturday, 6,000; shipped Saturday, 1,804. The market was 10c lower. The following are representative sales:			
No.	Ave. Price.	No.	Ave. Price.
69.....	122 \$3.40	87.....	144 \$3.37 1/2

SHEEP—Receipts since Saturday, 5,171; shipped Saturday, 30. The market was steady and active. Following are representative sales:			
No.	Ave. Price.	No.	Ave. Price.
255 td. N. M.	73 \$3.65	158 M. lbs.	63 \$3.60

HORSES—Receipts since Saturday, 45; shipped Saturday, 39. There were light receipts at the horse and mule barn to-day, and consequently there was no market. The receipts thus far have been greater than the same time a year ago.			
No.	Ave. Price.	No.	Ave. Price.
22.....	100 3.00	268 clp. Tex.	79 2.85

Chicago Live Stock.

CHICAGO, April 27.—Cattle—Receipts, 8,000; market 10 to 20c higher; fair to best beefs, \$3.40@4.20; stockers and feeders, \$3.25@3.80; mixed cows and bulls, \$1.50@3.85; Texas, \$2.85@3.80.

Hogs—Receipts, 43,000; market active at 5 to 10c decline; light, \$3.45@3.85; rough packing, \$3.25@3.30; heavy packing and shipping, \$3.30@3.35.

Sheep—Receipts, 17,000; market steady; native, \$2.00@3.60; western, \$3.00@3.60; Texas, \$2.50@3.50; lambs, \$3.50@4.55.

St. Louis Live Stock.

ST. LOUIS, April 27.—Cattle—Receipts, 800; market 10 to 15c higher; native steers, \$3.70@4.30; Texas steers, \$2.75@3.75.

Hogs—Receipts, 5,000; market 5 to 10c lower; heavy, \$3.30@3.50; mixed, \$3.20@3.45; light, \$3.35@3.55.

Sheep—Receipts, 6,000; market lower.

Chicago Grain and Provisions.

April 27.	Opened	High'st	Lowest	Closing
-----------	--------	---------	--------	---------

Wht-April.....	63	63 1/2	62 1/2	62 1/2
May.....	64	64 1/2	63 1/2	64 1/2
July.....	64 1/2	64 1/2	64 1/2	64 1/2

Corn-April.....	29 1/2	29 1/2	29 1/2	29 1/2
May.....	29 1/2	29 1/2	29 1/2	29 1/2
Sept.....	31 1/2	31 1/2	31 1/2	31 1/2

Oats-April.....	19 1/2	19 1/2	18 1/2	18 1/2
May.....	19 1/2	19 1/2	18 1/2	18 1/2
July.....	19 1/2	19 1/2	18 1/2	18 1/2

Pork-April.....	8 3/4	8 3/4	8 1/2	8 1/2
May.....	8 3/4	8 3/4	8 1/2	8 1/2
July.....	8 3/4	8 3/4	8 1/2	8 1/2

Lard-April.....	4 7/8	4 7/8	4 7/8	4 7/8
May.....	4 9/16	4 9/16	4 8/16	4 8/16
July.....	4 8/16	4 8/16	4 8/16	4 8/16

Ribs-April.....	4 1/2	4 1/2	4 1/2	4 1/2
May.....	4 1/2	4 1/2	4 1/2	4 1/2
July.....	4 1/2	4 1/2	4 1/2	4 1/2

Kansas City Grain.

KANSAS CITY, April 27.—Low grades of

WOOL

We are now the largest receivers of wool direct from the CROWERS of any house in this market. A few years ago we commenced at the bottom of the list but the year 1896 finds us on top and we are going to stay there. We Make QUICKER SALES and QUICKER RETURNS for wool than any house in this market. THAT'S OUR RECORD and we are going to keep it. Don't Dispose of your Wool until you write us for our report and other valuable information which will be sent you at once free of charge. SACKS FURNISHED FREE.

SUMMERS, MORRISON & CO., COMMISSION MERCHANTS,
References: Metropolitan Nat'l Bank, Chicago, and this paper. 174 S. Water St., CHICAGO.

WHAT WE KNOW

About the Wool Commission Business may be of service to you. If so it is at your disposal. We have had 30 years continuous experience and have gained a few essential facts. One of these enables us to deal direct with the manufacturer. Your wool goes direct from our hands to the man who weaves it into cloth. We charge smallest commission consistent with good business. We make liberal advances on consignments. We keep you posted on the conditions of the market through our circular letter. We furnish free use of sacks to our patrons. We refer you to any bank or reputable business house in Chicago.

SILBERMAN BROTHERS,

122-128 Michigan St., CHICAGO, ILL.

wheat were somewhat lower to-day. Choice samples were held on Saturday prices, but there was no demand except at some decline.

Receipts of wheat to-day, 23 cars; a year ago, 36 cars.

Sales were as follows on track: Hard, No. 2, nominally 61c; No. 3, 1 car 51c, 3 cars 50c, 1 car 47c; No. 4, 6 cars 40c, 3 cars 37c, 1 car 36c; rejected, nominally 33@36c. Soft, No. 2 red, nominally 73c; No. 3 red, nominally 67@70c; No. 4 red, nominally 55@60c; rejected, nominally 47@50c, 2 cars very poor 40c. Spring, No. 2, 1 car 60c; No. 3, nominally 55@58c; rejected, nominally 48@53c; white, nominally 45@60c.

Corn sold at about Saturday's prices and met with a fair demand. The receipts were very small. There was considerable bidding on futures and 45,000 bushels of May mixed sold at 23 1/2c. May white was quoted nominally at 23 1/2c.

Receipts of corn to-day, 16 cars; a year ago, 15 cars.

Sales on track by sample: No. 2 mixed, 1 car yellow, 23 1/2c, 5 cars 23 1/2c, 4 cars 23c; No. 3 mixed, nominally 22 1/2c; No. 4 mixed, nominally 22c; white, No. 2 cars 23 1/2c, No. 3, nominally 23@23 1/2c.

White oats sold a little more readily and a little higher. Mixed were rather hard to sell.

Receipts of oats to-day, 4 cars; a year ago, 7 cars.

Sales by sample on track: No. 2 mixed, nominally 16 1/2c; No. 3, 3 cars 15c; no grade, nominally 12@14c. No. 2 white, 1 car 19 1/2c, 1 car 19 1/2c, 1 car 19c; No. 3 white, 1 car 18 1/2c.

Hay—Receipts, 58 cars; the market is firm. Timothy, choice, \$11.00@11.50; No. 1, \$10.00@11.00; No. 2, \$8.00@9.50; No. 3, \$5.50@7.50; choice prairie, \$7.00@8.00; No. 1, \$6.00@6.50; No. 2, \$5.00@5.50; No. 3, \$4.00@4.50; No. 4, \$3.00@3.50; straw, \$3.50@4.50.

St. Louis Grain.

ST. LOUIS, April 27.—Receipts, wheat, 10,151 bu.; last year, 11,738 bu.; corn, 52,000 bu.; last year, 19,910 bu.; oats, 33,000 bu.; last year, 49,446 bu.; shipments, wheat, 16,900 bu.; corn, 35,378 bu.; oats, 38,000 bu. Closing prices: Wheat—Cash; No. 2 red in store, 64c bid; May, 57 1/2c; July, 59 1/2c; August, 61c. Corn—Cash, 26 1/2c@26 3/4c; May, 26 1/2c; July, 27 1/2c. Oats—Cash, 17 1/2c bid; May, 17 1/2c; July, 18 1/2c asked.

Kansas City Produce.

KANSAS CITY, April 27.—Butter—Creamery, extra fancy separator, 14c; firsts, 13c; dairy, fancy, 12c; fair, 10c; store packed, fresh, 6@10c; packing stock, 6 1/2c; country roll comes in very poor condition and is sold at packing stock prices.

Eggs—Strictly fresh, 7 1/2c per doz., 8c in new No. 2 cases.

Poultry—Springs, 1 1/2 to 2 1/2 lbs., 15c. roosters, 15c; young, 17 1/2c; turkeys, hens, 10c. gobblers, 9c; old, 7c; ducks, 8 1/2c; geese, not wanted; pigeons, 90c@1.00.

DROVERS COMMISSION COMPANY,

Kansas City, Mo., Stock Yards.

G. W. CLAWSON, LOANS. MONEY LOANER

A. T. MUSTON, CATTLE. Feeders Furnished

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John Moffett, Manager. L. B. Andrews, Office.

T. S. Moffett, W. C. Lorimer, Cattle Salesmen.

H. M. Baker, Hog and Sheep Salesman.

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Live Stock Commission Merchants.

Feeders and stockers purchased on orders. Personal attention given to all consignments. Correspondence invited. Market reports furnished.

References: National Bank of Commerce, Kansas City, Mo.; Citizens' State Bank, Harper, Kas.; Bank of Kiowa, Kiowa, Kas.

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CORRUGATED STEEL IRON ROOFING

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The Apiary.

HAS DIETETIC VALUE.

Honey is the Most Easily Digested Article of Food Known.

Probably most people consider honey as the equal in value for food of any sweet sauce—no better, no worse. All should know that it possesses one great superiority—ease of digestion. The nectar of flowers is almost wholly cane sugar. The secretions added by the bees change this to grape sugar, and so prepare it that it is almost ready for assimilation without any effort on the part of the stomach; in fact, Prof. A. J. Cook once styled honey "digested nectar." It will be readily seen that honey is a very desirable food for those with weakened digestive powers. If a person is very tired, "too exhausted to eat," it is astonishing how a few tastes of honey will act almost like magic. Almost no effort is required to make it ready for assimilation. Persons suffering from some forms of kidney trouble will find that honey is a much more beneficial food for them than is cane sugar.

In eating comb honey many strive to reject every particle of wax, fearing that, as wax is indigestible, nightmare and other troublesome consequences will follow an indulgence in warm biscuit and honey. It is true that bread is more easily digested than warm biscuit, as the latter is inclined to "pack" in chewing, but it may surprise some to know that comb honey is really an aid to the digestion of hot bread or biscuit. The philosophy of the matter is that the flakes of wax prevent the "packing," while the honey readily dissolves out, leaving passages for the gastric juice to enter the mass of food. The flakes of wax are indigestible, that is true, but when warmed are perfectly smooth and soft and will not injure the most delicate membrane; in fact, they act as a gentle stimulant, and are beneficial in some forms of alimentary difficulties.

The unpleasant symptoms which some suffer after eating honey may often be removed by drinking a little milk.—W. Z. Hutchinson, in Country Gentleman.

ABOUT AFTER-SWARMS.

A Beekeeper Tells of a Simple Way to Prevent Them.

The best way I know to prevent after-swarms is to have all the bees that can fly go with the first swarm, and this is the way I manage it: Have all the colonies strong, even if it should be necessary to double them up in the spring so that they will swarm at the beginning of the honey flow. Then have the prime swarm on the old stand, removing the super, if any, from the present hive to the swarm; then set the parent hive on top of the swarm's hive and allow it to remain there two or three days. All the young bees that have been out of the hive, when they come out, will go in below with the swarm. About the afternoon of the second day, if the weather has been favorable, the parent colony will have become so depleted of bees that they will give up swarming a second time and will begin to carry out drone-brood. It is then safe to carry them to a new location; they will not swarm again, but will build up a strong colony, and will store some fall honey and be a good colony to winter. In this way we get extra strong colonies that will store more honey than the two together would if the queen-cells had been cut out. Crowd the brood chamber with bees instead of contracting it.—George W. Stephens, in Nebraska Queen.

A Damage to Beekeepers.

Spraying fruit trees when in bloom is considered of paramount importance nearly everywhere, and in some states laws make it obligatory. It is so general in many western sections that apiarists complain bitterly. Where there is an abundance of clover and other blossoms furnishing sweets, bees get along all right; but where they depend in large part upon flowering orchards, the question of partial or complete destruction of the bloom through spraying is a serious one.

W. R. ROBERTS who is widely and favorably known in banking and business circles of Omaha Neb. writes on March 7th 1896: "I have been troubled with **NERVOUS DYSPEPSIA**, cold feet and hands and lack of circulation loss of flesh, etc. I commenced taking Dr. Kay's Renovator Jan'y 15th 1896 and I continued to improve from the third day, and have found this medicine most pleasant, no griping, no sickness at the stomach; but a complete Renovator, and I voluntarily, without the Doctors request, recommend this to any one afflicted with indigestion and nervousness which follows. I now eat well, sleep well, and have gained about twenty five pounds in weight, am free from cold feet or hands, circulation good and I feel better than for

150 DOSES \$1.00

Dr. Kay's Renovator

FOR DYSPEPSIA
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LIVER & KIDNEYS

SOLD BY DRUGGISTS.

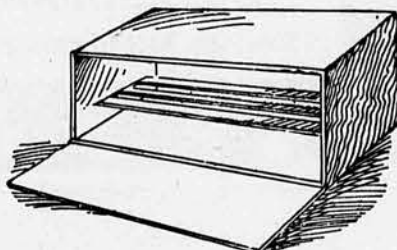
many years and I attribute this to Dr. Kay's Renovator. One 25ct box will convince any one that it surpasses the whole train of pills and cathartics usually taken. I now only take one little tablet when I over load my stomach and it will relieve me at once." AT THIS TIME OF YEAR it is invaluable as it renovates and invigorates the whole system and purifies and enriches the blood giving new life and vigor to the whole body, curing spring fever, dyspepsia, constipation, liver and kidney diseases and all nervous and blood diseases headache, biliousness etc. It is the best nerve tonic known for worn out business men. It has 2 to 4 times as many doses as liquid medicines selling for the same price. Sold by druggists or sent by mail, for 25cts and \$1. Send for free sample and booklet; it has many valuable receipts, gives symptoms and treatment for nearly all diseases and many say it is worth \$5. if they could not get another. Address Dr. B. J. Kay Medical Co., (Western Office) 620 So. 16th Street, Omaha, Neb.

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PROFITLESS POULTRY.

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Don't keep a lot of useless poultry through the winter. If in good flesh have all the old fowls and the cockerels dressed. Have such a box as is illustrated—a dry goods box with hinged



POULTRY REFRIGERATOR.

side—and lay the dressed fowls in it, no one touching another. Put the box in a cold building or on a back piazza and let the fowls freeze solid. Chicken meat can then be had at any time during the winter. Dress all fowls that are "eating their heads off."—Farm and Home.

NOTES FOR BEEKEEPERS.

Thick, well refined honey will not granulate so rapidly as that which is thin.

A large number of extra combs are necessary when extracted honey is the plan to be followed.

Bees are profitable because they gather up and store away that which would otherwise be lost.

The best food for bees in winter is thick clover honey, to which white sugar sirup may be added.

Bees serve as active agents in the fertilization of plants and are not destructive in the smallest degree.

No trash of any kind should be left on the bottom boards, as this will furnish a good nest for the moth miller.

Hives may be placed anywhere, high or low, wherever it is most convenient to the beekeeper, as it makes no difference to the bees.

Beekeeping, when combined with fruit growing, enables one to procure a double crop from the same land without additional fertilizing.

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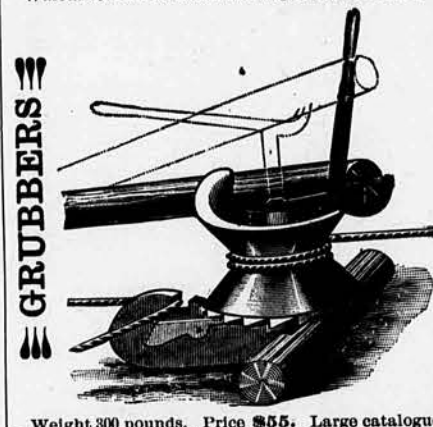
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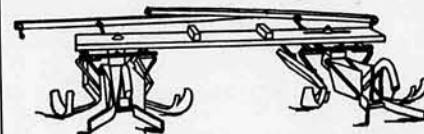
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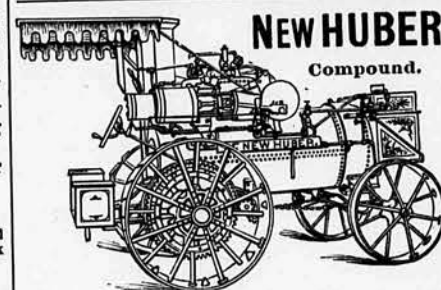


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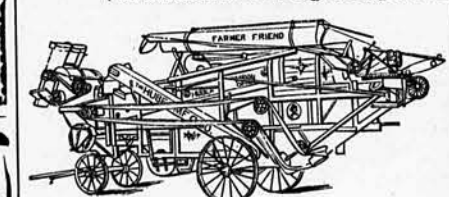
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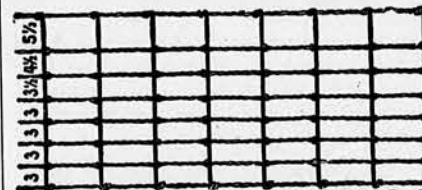


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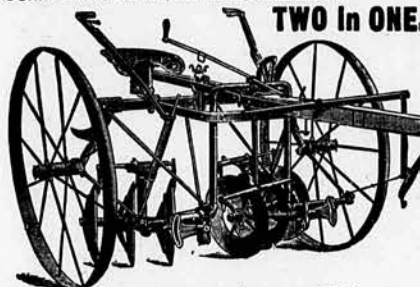
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the top of one of our four cornered, double braced, steel towers and it will stay there. They have done that through worst storms of recent years. Many sizes and all from best material. Full line of Tanks, Shelters, Cutters, Pumps, Horse Powers, &c. Write us. Challenge Wind Mill & Feed Mill Co., No. 47 River Street, Batavia Illinois.

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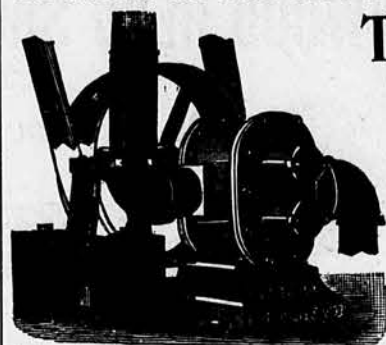
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Back Geared and Direct Stroke, Galvanized Steel and Wood; 5-ft to 18-ft. New principle in governing; no weights or springs; leads in simplicity, durability, strength and effective work. Most successful power mills for grinders, feed cutters, shellers, etc. \$9000.00 worth of our power mills in daily use in one township. 3 and 4 corner galvanized steel towers. Strongest in use. Never one blown down. Our line of "Hero" and "American" Grinding Mills, Fodder Cutters, Shellers, Wood Saws, etc., the best and most complete, 2 to 8 horse Sweep Powers; 2 and 3 horse Tread Powers; "Success" One Horse Tread Power for Cream Separators, pumping, etc. Our new 150-page catalogue tells all about machines for preparing feed, pumping water, irrigation, etc. Send for it.
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The WONDER Pump

THE MOST COMPLETE AND SUCCESSFUL
ROTARY PUMP MANUFACTURED.

SUITABLE FOR IRRIGATION AND MINING PURPOSES. This pump has stood the most severe tests and the comments in its praise are most gratifying. Manufactured by
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THE IDEAL IRRIGATOR
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makes it possible to stay where you are and live in peace and plenty—the Ideal Irrigator is the only mill on the market made especially for irrigation work, all others offer you their regular farm style, entirely too light and cannot stand continuous heavy duty—the best is the cheapest for this kind of pumping. Ask your dealer for the IDEAL IRRIGATOR and take no other. If he does not have it, send for our catalogue and prices.
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We make Steel Windmills, Steel Towers and Feed Grinders and are selling them cheaper than the cheapest. Our productions are first-class in every respect and are sold on trial. Send us a postal and we will tell you all about them. **CURRIE WINDMILL CO.,**
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The Kansas City Stock Yards

are the most complete and commodious in the West,

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

	Cattle and calves.	Hogs.	Sheep.	Horses and mules.	Cars.
Official Receipts for 1895.....	1,689,652	2,457,697	864,713	52,607	103,368
Slaughtered in Kansas City.....	922,107	2,170,827	557,016		
Sold to feeders.....	329,262	1,376	11,445		
Sold to shippers.....	218,805	273,909	69,784		
Total Sold in Kansas City, 1895.....	1,533,234	2,446,202	748,244	41,588	

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

NO YARDAGE CHARGED UNLESS THE STOCK IS SOLD OR WEIGHED.

C. F. MORSE, E. E. RICHARDSON, H. P. CHILD, EUGENE RUST,
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OUR GRAND OFFER.
FREE One of these \$7.50 watches and a chain, if you buy or sell SIX WORTHY TO-DAY, as this price holds good for 60 days only. **ROYAL WPC CO., 301 Valley Bldg., Chicago, Ill.**

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FROM All Stations in Kansas
TO All Stations in Arkansas, Indian Territory, Texas and Southern Missouri.
RATE One fare plus \$3 for the round trip. Minimum rate \$7.
DATE OF SALE April 7, April 21, May 5.

For further information call on nearest Missouri Pacific ticket agent or write

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

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

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LOW RATES TO ALL POINTS.

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KANSAS CITY, MO.

Special Want Column.

"Wanted," "For Sale," "For Exchange," and small or special advertisements for short time, will be inserted in this column, without display, for 10 cents per line, of seven words or less, per week. Initials or a number counted as one word. Cash with the order. It will pay. Try it!

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

YELLOW MILO MAIZE, RED AND WHITE KAFFIR, Amber sorghum, Golden millet, each 35 cents per bushel, sacked. Black rice corn, 75 cents per bushel, sacked. Willis K. Folks, Wellington, Kas.

WANTED.—Situation as housekeeper for widower in Shawnee or adjoining counties. "C." Seabrook, Kas.

WANTED, SALESMEN.—To sell a fine line of lubricating and special oils and greases on commission. Good chance to the right party. Buckeye Refining Co., Cleveland, Ohio.

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WANTED.—To exchange, a Percheron stallion, sired by Brilliant, for driving horses or something I can use, as I have two stallions and use for but one. O. P. Updegraff, North Topeka, Kas.

PURE FOLGERS, COLMAN, COLLIER SORGHUM seed for sale, raised from pedigreed seed. Mary Best, Medicine Lodge, Kas.

FOUND.—A sorrel horse, about 7 years old. Apply at 708 Kansas Ave., Topeka.

300,000 TEN BEST KINDS SWEET POTATO plants for sale during May and June at low prices. Inquire of N. H. Pixley, Wamego, Kas.

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DISEASES OF YOUNG AND OLD MEN.—Private and skin diseases a specialty. Wm. H. Richter, Ph. G. M. D., 508 Kansas Ave., Topeka, Kas. Correspondence solicited.

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AUBURN POULTRY YARD.—Eggs for sale from a prize-winning B. Langshans and S. S. Hamburgs. B. Langshan pen headed by first premium cock at the State poultry show at Topeka, 1896; first on Hamburg breeding pen. A few cockerels left for sale. Write for prices. Address W. E. McCarter & Son, Auburn, Kas.

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Does not grow so much to stalk, shoots better, and matures its ear before hot winds or early drought kill it. Twenty-six best kinds. Catalogue and one sample free. J. C. SUFFERN, Seed Grower, Voorhies, Ill.

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NORTHERN EARLY OHIO

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25 cents per bushel sacked.

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30 Pedigreed Poland-China

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The brood sows in my herd belong to the leading families, such as Chief Tecumseh 2d 9115, Orient 8131, Good Quality 4700, Iowa's Champion 2d 6278, Longfellow 29785 O. J. H. Sanders Jr. 13514 S. Herd boars used during 1895, Wren's Medium 12887 S. and Corwin White Face 9224 S. Sows and gilts for sale bred to Hadley Yet, a son of Hadley Jr. 13314 S., the great prize-winner, whose picture appears in the Breeder's Gazette's last Christmas number. Write and describe what you want, or better, come and select what you wish out of the best bred and finished lot ever raised on the farm. For sale, a No. 1 jack, fifteen and one-half hands high. Warranted a breeder. W. H. WREN, Marion, Marion Co., Kas.

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