

# KANSAS FARMER

ESTABLISHED IN 1863.  
VOL. XXXIV. NO. 43.

TOPEKA, KANSAS, THURSDAY, OCTOBER 22, 1896.

SIXTEEN TO TWENTY  
PAGES--\$1.00 A YEAR.

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## BREEDERS' DIRECTORY.

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This Tunnel site runs under the famous Bull Hill and cuts many valuable veins. Eight hundred feet of work already done. Prospects, map, etc., furnished if desired. Send orders to  
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## Agricultural Matters.

### CORN FODDER.

EDITOR KANSAS FARMER:—Our scientific men tell us that if corn fodder is cut up at the proper time, and properly fed, there is almost 50 per cent. of the entire nutriment of the plant in it. In other words, when we leave the stalk in the field, we only harvest one-half of our crop and throw the other half away. Just think of a man subscribing for two copies of the FARMER, and when he takes them out of the office, deliberately throwing one away. Who is it that digs every other row of his potatoes and leaves every other row?

To be sure, corn stalks can be pastured, but the corn stalk disease annually kills more cattle than the grazing of the stalks is worth. Corn is so cheap that it is mostly grown at a loss, and why not reduce the acreage, and cut it all up, and thus save the cutting of so much hay?

But there is a great big sermon between the lines of what our scientific men tell us. They first say, "if cut at the right time." Here is a whole lot in a few words. When the ear is about made the husk around it loosens a trifle and the air passes in and in a short time the husks begin to turn yellow. This is the first proof of the glazing of the kernel, and not till this occurs should the fodder be cut. If allowed to stand awhile, until the leaves begin to turn yellow, a large per cent. of the nutriment has been lost and the value of the fodder is lessened that much. The corn plant deposits its concentrated food in the leaf, and later on this food is transferred to the ear, and it stands to reason that all the concentrated food left in the leaf after the ear has glazed over must be secured by cutting and curing, similar to hay, or else the food qualities will be lost by bleaching, just the same as if we allow the grass to stand until the frost has killed it and dried it up. Here lies the secret of the popularity of Kaffir corn, as it retains its greenness until frost, and is always cut up while green and thus has all its nutriment saved. I am not yet prepared to give up Indian corn for Kaffir corn, and make the claim that, if properly put up, it is relished better by stock than any other fodder. Did you ever notice how the cattle will bellow after the corn fodder wagon, when they will not after Kaffir corn fodder?

I will not say a word against the machine cutters, but we cannot all own machines and we must reduce the cost of production all we can, and probably the "armstrong cutter" (arm and corn-knife) is the cheapest and best. It will cut tangled corn better than any other machine will, and just as cheap, if not cheaper, and the farmer gets a chance to use his labor in the place of money. Next to this comes the sled cutter, cutting two rows at once, and taking two men to operate. In this climate, fourteen hills square is the best size for a shock, and the sled should be started in between the seventh and eighth rows, and when fourteen hills have been cut the men should start the shock. Now, right here comes an opportunity to excel your neighbor in lessening the cost and ease of production, and if these directions are new to you they will be well worth your subscription to the FARMER for a year. Set the armfuls up carefully, spreading the butts out so the two bundles will make a perfect circle, then twist the tops of the stalks around as hard as you can, then turn this twisted top down, pick up a stalk on the same side and throw it up and over the shock, thus locking the twisted tops just as firmly as a string would have done, and very much cheaper and quicker, besides not in the way when handling the fodder. This little wrinkle has been worth lots of money to me and I heartily recommend it for trial. When the shock is complete, tie at once, using a crank and rope; or pulley and rope, to draw up the shock, and tie with the best of twine and as high up as you can. If cheap twine is used, the material in the twine will be

used by the mice to make nests with and the object defeated.

A good sled is probably the handiest to haul fodder from the field with, but a common hay frame can be made wonderfully useful if you know how. This "know how" is another little wrinkle, and again is worth your subscription. If the fodder is slightly frozen down, tie a twenty-foot rope to the rear of the wagon and start the team down the shock row and you take the other end of the rope and go down the other side of the shock row. When the rope tilts the shock up a trifle let loose of your end and grab the rope again in time for the next shock, without stopping the team. In this way a whole row is loosened while going out and the loading can be begun at the other end of the shock row. A hay wagon with sides two feet high is the best, and in one corner, behind, a seven or eight-foot scantling should be set up and firmly bolted fast. On the top of this scantling a twenty-four-foot pole should be hung so it will tip or turn freely. Hang this pole eight feet from one end, and at the long end attach a rope and at the short end a short chain with a hook. Drive up to a shock, tie a rope firmly around it, hook the short chain into the ring of the rope, pull down on the rope fastened to the long end of the pole and swing the shock over into the wagon. Unhook the pole, take off the rope from the shock and roll the shock to the front end of the wagon. No matter how dry the fodder is, how snowy it may be, or how the wind blows, this can be continued until a large load of one-half ton or more has been loaded on. By having several ropes and leaving them on the shocks, the same pole can be used in unloading, or the one rope can be put on. Those who have a hay fork can unload best with that.

When the shocks are husked in the field, four should be put in one and thus avoid all the bleaching process.

There are now made small two-horse shredders, that snap off the ear, cut up the stalk and shred it to ribbons, and when this is done, it can be fed with hardly any loss. When shredded in large quantities, the fodder is liable to mold, and the latest wrinkle to prevent this, is to shred with a threshing machine, feeding corn fodder in on one side and an equal weight of unthreshed oats on the other side. The oat straw prevents the shredded fodder from spoiling in the stack, and the oats mixed with shredded corn makes a good combination to feed. When shredded fodder and good green oat straw is threshed in this way and the mixture is steamed up and then allowed to cool, the mess becomes as valuable as the product of the silo and at a much less cost. CLARENCE J. NORTON.

Morantown, Kas.

### Farming the Best Thing--A Boy's View of it.

Farming is the oldest occupation in the world, and for the masses it is the most independent of all. They can raise their own living, and no one can go fishing or take a day off so well as the farmer. His crops and his stock are growing even while he is asleep. But he must not, of course, take too many days off, for it is industry, perseverance and economy that wins in anything.

There is no inspiration, of course, in having the poorest farm in the community, but there is in having one of the best kept farms, with the best kept stock and the best crops. The farm need not be large; indeed, many spread out too much. The home need not be large, but should be made attractive, with plenty of trees, for shade in summer and wind-break in winter. Even the cash value of a home is doubled by having a nice, well-kept grove about the house. The boys should be taught to plant trees and the girls to plant roses, to beautify the home.

On the farm is the best place in the world to raise a family. They are not exposed to the contaminating influences of city vices. It is a well-known fact that a very large per cent. of the men of wealth, and the men and women that lead the world in every department, were raised in the country.

HENRY FELLOWS.

Wichita, Kas., October 7, 1896.

### Shrinkage in Grain by Storage.

A writer in the Cincinnati Price Current says:

"There has been much said and written on the shrinkage of grain from the gathering, threshing and cribbing of the same, if their sale was delayed six or eight months.

"I read an article in the Ohio Valley Farmer, published in Cincinnati forty odd years ago (1855), edited by B. F. Sanford, as follows:

"Wheat from the time it is threshed in August will shrink two quarts to the bushel, 6 per cent. in six months, under the most favorable conditions, hence it follows that 94 cents when threshed is as good as one dollar per bushel in six months after stored; and corn would shrink in weight from 10 to 20 per cent., and 100 bushels as it comes from the field in November by the first of April will not weigh over 80 bushels, so that 40 cents per bushel as it comes from the field is better than 50 cents in March—and other grain shrinks in the same ratio."

"The above article on the shrinkage of grain by storage was published last winter in the Cincinnati Enquirer, and also in our Butler county papers, and not one word changed from what I read in the Ohio Valley Farmer forty odd years ago, showing conclusively that the author of said article was totally ignorant as to the loss of grain by shrinkage in weight. I have no doubt he was honestly mistaken.

"There are certain principles underlying every branch of agriculture which if thoroughly understood would solve many of those vexed questions. Years ago, when our education was very limited, we had some very singular ideas, or rather curious notions and traditions that had been handed down to us by our forefathers. I well remember my mother saying that to make good soap it must be stirred with a sassafras stick, and if hogs were killed when the moon was on the decrease the meat when cooked would shrink in bulk, and if they were killed when the moon was on the increase the meat would increase in size, when cooked, and if the husks on the corn were thick we would have a cold winter. If this be true look for a cold winter for 1896.

"I claim that all articles written on agricultural subjects to be of any value to the tillers of the soil should be by itemized statements showing whether the loss has been by shrinkage in weight, or by wastage, and has been ascertained by repeated and tested experiments by weighing, stating when weighed and when reweighed, and condition of the grain when weighed, and by several different trials, so they would know they were correct.

"For the past ten years I have been making experiments to learn the facts as to the exact amount of shrinkage in weight of the different kinds of grain from the time of threshing and also gathering of corn up to the first Monday in April, the day that all farm products are subject to be placed on the tax duplicate, with the following results:

"I threshed my wheat crop of 1893 July 28; it was in good condition, and I filled three sacks; their weight was 405 pounds. They were placed in the wheat bin where nothing could disturb them, and I re-weighed them March 24, 1894, making about eight months, and they had not lost a single pound, but gave stronger weight than when first weighed.

"On the first day of August, 1894, I weighed ten sacks of oats as they came from the threshing machine, and they weighed 1,272 pounds, and each sack was weighed separately and weights of each marked on a card and sewed on the sacks, so there could be no mistake; they were reweighed January 1, 1895, and the ten sacks weighed 1,316 pounds, a gain in weight of forty-four pounds, making the gain of 3½ per cent. The season of 1894, being a season of long-continued drought, there had been no rain from June 26 up to September 10, except a few light showers. Perhaps in years of abundance of rain during their ripening and up to threshing they would not make such a gain in weight.

"It is a well-known fact that when threshed in good condition and then

## A Sufferer Cured

"Every season, from the time I was two years old, I suffered dreadfully from erysipelas, which kept growing worse until my hands were almost useless. The bones softened so that they would bend, and several of my fingers are now crooked from this cause. On my hand I carry large scars, which, but for



### AYER'S

Sarsaparilla, would be sores, provided I was alive and able to carry anything. Eight bottles of Ayer's Sarsaparilla cured me, so that I have had no return of the disease for more than twenty years. The first bottle seemed to reach the spot and a persistent use of it has perfected the cure."—O. C. DAVIS, Wautoma, Wis.

# AYER'S

THE ONLY WORLD'S FAIR  
Sarsaparilla

AYER'S PILLS Promote Good Digestion.

reweighed in twelve months afterward clover seed gains in weight 1 per cent. The same is true of flax seed, also rye and barley. Potatoes do not begin to lose in weight until they begin to sprout, when the loss is rapid. The same of apples; they lose in bulk and weight if not kept in cold storage.

"Last fall, 1895, I filled a large bur-lap sack of ear corn the day it was husked, October 25, and it weighed 153½ pounds; a card was sewed on the sack stating date and weight, and on July 1 was reweighed, and weighed 150 pounds, showing only a loss of three and a half pounds; but last fall was a remarkably dry fall, and corn was fully matured and well dried out at time of gathering. Falls when we have a large amount of wet weather and the corn not thoroughly dry and matured it will shrink from 5 to 6 per cent. Such have been the results of my experiments. It does not shrink 10 to 20 per cent. as some farmers claim it does."

### Kaffir Seed.

EDITOR KANSAS FARMER:—In a recent article of mine, selected for your columns, protesting against high prices by seedsmen when farmers were getting very low prices, it should have read, "5 to 62 cents per pound," instead of "5 to 6." The latter figures are specially out of proportion to prices of other seeds, though seemingly excessive when compared with the one-fifth to one-half cent received by the farmers, but the latter is not half what it should be. J. M. RICE.

Winview, Okla.

Look out for cheap substitutes! Beware of new remedies. Dr. Bull's Cough Syrup has stood the test for nearly fifty years.

### Unequaled Service

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

Through Pullman Sleepers, Pullman Dining Cars and Free Reclining Chair Cars leave Denver Daily. The Union Pacific is the great through car line of the West. Ask your nearest ticket agent for tickets via this line. E. L. LOMAX, Gen. Pass. and Ticket Agent, Omaha, Neb.

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### Tours in the Rocky Mountains.

The "Scenic Line of the World," the Denver & Rio Grande railroad, offers to tourists in Colorado, Utah and New Mexico the choicest resorts, and to the trans-continental traveler the grandest scenery. The direct line to Cripple Creek, the greatest gold camp on earth. Double daily train service with through Pullman sleepers and tourists' cars between Denver and San Francisco and Los Angeles. Write S. K. Hooper, G. P. & T. A., Denver, Col., for illustrated descriptive pamphlets.

# The Stock Interest.

## THOROUGHbred STOCK SALES.

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

- OCTOBER 23—Gudgell & Simpson and J. A. Funkhouser, Herefords, Independence, Mo.
- OCTOBER 27—H. Davidson, Poland-Chinas, Princeton, Kas.
- OCTOBER 30—J. R. Killough & Sons, Poland-Chinas, Richmond, Kas.
- NOVEMBER 10—J. M. Kirkpatrick, swine, Ottawa, Kas.
- NOVEMBER 12—J. H. Taylor, Poland-Chinas, Pearl, Kas.
- NOVEMBER 13—Chas. A. Cannon, Poland-Chinas, Harrisonville, Cass Co., Mo.
- NOVEMBER 19—B. R. Adams, Fort Scott, Kas., J. M. Turley, Stotesbury, Mo., and G. Hornaday & Co., Fort Scott, Kas., combination sale of Poland-Chinas.

## STEER-FEEDING EXPERIMENTS.

(Continued from last week.)

### COMPARISON OF LOTS.

The facts brought out in the tables show that lot I, fed on a balanced ration, both ate more and gained more than any of the other lots, and also that their ration was more nutritious than the corn ration to which the others were confined. But they gained more in proportion to the amount of food consumed than did any of the others. These facts agree with the results of our first feeding experiment, in which the lot fed on a balanced ration also gained more for the food consumed than any of the other three lots; but as in the present case, the total food consumed by them was also somewhat more than that of the others. It would be folly to ascribe the better gains wholly to the fact that they ate more, although it undoubtedly has an influence in that direction. Their better gains must be due chiefly to the fact that their food was more nutritious than the corn ration given to the others. These facts will be better comprehended and more briefly summarized when presented in the following tabular form:

	Lot I.	Lot II.	Lot III.	Lot IV.
Total grain eaten, lbs.	15,277	13,231	16,114	16,860
Total fodder eaten, lbs.	4,863	3,036	2,676	2,285
Total food eaten, lbs.	20,141	16,267	18,790	19,145
Grain eaten per pound of gain, lbs.	2,030	1,451	1,149	1,086
Fodder eaten per pound of gain, lbs.	7.52	2.09	1.52	1.10
Total food eaten per pound of gain, lbs.	9.55	3.54	2.67	2.18
Cost per pound of gain, cents.	3.94	3.50	3.99	4.35
Price per pound at stock yards, cents.	4.10	4.00	3.90	3.80

This gives us a bird's-eye view of the leading facts brought out by the experiment. Although lot I made the best gains, and that with the least consumption of food per pound of gain, the gain cost more in the case of lot II, owing to the higher-priced feed-stuffs, oil meal and bran, which were given the first lot. But it will be seen from the financial data that, owing to their better condition, they sold for a better price than the others. All the steers were fed at a loss, yet the loss was less for lot I or for lot II than either of the others.

Lot II, it will be seen, made better gains than lots III and IV, and in this respect results differ from those of our first feeding experiment, in which the lot fed corn meal gained less than the lot fed ear corn. It took 1.59 pounds more of corn meal for a pound of gain than it took of the balanced ration. The feed required per pound of gain for lots I and II is not comparable with

the feed required by lots III and IV, because the latter were fed ear corn. But the experiment shows that in this case we got better and cheaper returns from the corn meal than from the ear corn.

### SALE OF STEERS.

The steers were shipped to Kansas City stock yards and sold March 24. They were sold strictly on their merits. The market was ruinously low and all four lots sold at a loss. Lot I sold for \$4.10 per cwt., which was the highest figure reached that day; lot II sold for \$4 per cwt.; lot III for \$3.90, and lot IV for \$3.80. It is evident that when fat steers sell for but a trifle more than their purchase price as feeders, or even less, as was the case with lot IV, to say nothing of freight, commission and shrinkage, they must be sold at a loss. The details are set forth in the following:

grain that is passed through the steer undigested. In the case of lots I and II, fed on ground feed, a large part of which was very fine, it was difficult to separate all the fine undigested particles in the manure, as they were too light to settle, and would float away with the manure in the process of washing. It is, therefore, probable that the percentages given for these two lots are too small. The results obtained were as follows: The undigested feed in the manure for lot I was 3.69 per cent.; for lot II it was 6.62 per cent.; for lot III it was 15.59 per cent., and for lot IV 15.95 per cent. The work was undertaken with a view to ascertain the relative amount of hog feed that the droppings of the several lots of steers contained. The grain thus washed out was dried before weighing until it approximated in its water content the feed given. It will

### FINANCIAL DATA.

Lot I—Dr.		
To 5 steers, first cost, 5,860 pounds @ \$3.85 per cwt.		\$226.76
To preliminary feeding:		
549.25 pounds ear corn @ 26 cents per cwt.	\$1.43	
35 pounds oil meal @ 88 cents per cwt.	.31	
237.5 pounds corn meal @ 35 cents per cwt.	.79	
716 pounds cut corn fodder @ 15 cents per cwt.	1.07	
		3.60
To feed during experiment:		
9,963.56 pounds corn meal @ 35 cents per cwt.	34.87	
2,656.97 pounds bran @ 50 cents per cwt.	13.28	
2,656.97 pounds oil meal @ 88 cents per cwt.	23.38	
2,442.5 pounds cut corn fodder @ 15 cents per cwt.	3.66	
2,431 pounds alfalfa @ 20 cents per cwt.	4.84	
Preparation for shipping:		
549.56 pounds corn meal @ 35 cents per cwt.	\$1.23	
93.23 pounds bran @ 50 cents per cwt.	.47	
93.23 pounds oil meal @ 88 cents per cwt.	.82	
4.77 pounds ear corn @ 26 cents per cwt.	.01	
14 pounds shelled corn (soaked) @ 32½ cents per cwt.	.04	
26.2 pounds cut corn fodder @ 15 cents per cwt.	.04	
38.44 pounds Kafir corn fodder @ 15 cents per cwt.	.06	
16.64 pounds alfalfa @ 20 cents per cwt.	.03	
9.23 pounds prairie hay @ 17 cents per cwt.	.02	
18.49 pounds oat straw @ 10 cents per cwt.	.02	
		2.73
To freight and expense of sale.		12.52
Total		\$325.64
	Cr.	
By 5 steers, 7,630 pounds @ \$4.10 per cwt.		312.83
Balance		\$12.81
Lot II—Dr.		
To 5 steers, first cost, 5,856 pounds @ \$3.85 per cwt.		\$225.46
To preliminary feeding:		
534.75 pounds ear corn @ 26 cents per cwt.	\$1.39	
276 pounds corn meal @ 35 cents per cwt.	.96	
716.5 pounds cut corn fodder @ 15 cents per cwt.	1.07	
		3.42
To feed during experiment:		
13,231 pounds corn meal @ 35 cents per cwt.	46.31	
3,036 pounds cut corn fodder @ 15 cents per cwt.	4.55	
Preparation for shipping:		
430.5 pounds corn meal @ 35 cents per cwt.	\$1.51	
4.77 pounds ear corn @ 26 cents per cwt.	.01	
7 pounds shelled corn (soaked) @ 32½ cents per cwt.	.02	
47.71 pounds cut corn fodder @ 15 cents per cwt.	.07	
8.03 pounds Kafir corn fodder @ 15 cents per cwt.	.01	
20.88 pounds alfalfa @ 20 cents per cwt.	.04	
6.43 pounds prairie hay @ 17 cents per cwt.	.01	
14.46 pounds oat straw @ 10 cents per cwt.	.01	
		1.68
To freight and expense of sale.		12.52
Total		\$293.94
	Cr.	
By 5 steers, 6,950 pounds @ \$4 per cwt.		278.00
Balance		\$15.94
Lot III—Dr.		
To 5 steers, first cost, 5,850 pounds @ \$3.85 per cwt.		\$225.23
To preliminary feeding:		
809.25 pounds ear corn @ 26 cents per cwt.	\$2.10	
722.5 pounds cut corn fodder @ 15 cents per cwt.	1.08	
		3.18
To feed during experiment:		
16,114.75 pounds ear corn @ 26 cents per cwt.	41.90	
2,676 pounds cut corn fodder @ 15 cents per cwt.	4.01	
Preparation for shipping:		
429.5 pounds ear corn @ 26 cents per cwt.	\$1.12	
4.77 pounds corn meal @ 35 cents per cwt.	.02	
10.5 pounds shelled corn (soaked) @ 32½ cents per cwt.	.03	
35.59 pounds cut corn fodder @ 15 cents per cwt.	.05	
7.74 pounds Kafir corn fodder @ 15 cents per cwt.	.01	
20.11 pounds alfalfa @ 20 cents per cwt.	.04	
6.19 pounds prairie hay @ 17 cents per cwt.	.01	
13.92 pounds oat straw @ 10 cents per cwt.	.01	
		1.29
To freight and expense of sale.		12.52
Total		\$288.12
	Cr.	
By 5 steers, 6,830 pounds @ \$3.90 per cwt.		266.37
Balance		\$21.75
Lot IV—Dr.		
To 5 steers, first cost, 5,903 pounds @ \$3.85 per cwt.		\$227.27
To preliminary feeding:		
741.25 pounds ear corn @ 26 cents per cwt.	\$1.93	
712 pounds cut corn fodder @ 15 cents per cwt.	1.07	
		3.00
To feed during experiment:		
16,850.5 pounds ear corn @ 26 cents per cwt.	43.84	
2,285 pounds cut corn fodder @ 15 cents per cwt.	3.43	
Preparation for shipping:		
517 pounds ear corn @ 26 cents per cwt.	\$1.34	
4.77 pounds corn meal @ 35 cents per cwt.	.02	
10.5 pounds shelled corn (soaked) @ 32½ cents per cwt.	.03	
21.59 pounds cut corn fodder @ 15 cents per cwt.	.03	
7.74 pounds Kafir corn fodder @ 15 cents per cwt.	.01	
20.11 pounds alfalfa @ 20 cents per cwt.	.04	
6.19 pounds prairie hay @ 17 cents per cwt.	.01	
13.92 pounds oat straw @ 10 cents per cwt.	.01	
		1.49
To freight and expense of sale.		12.52
Total		\$301.55
	Cr.	
By 5 steers, 6,810 pounds @ \$3.80 per cwt.		258.78
Balance		\$32.77

### UNDIGESTED GRAIN IN THE MANURE.

For eight weeks prior to January 1 the manure from each lot was most carefully collected and washed out, in order to ascertain the per cent. of

be seen from the results that it is possible for hogs following steers fed whole corn to get about fifteen pounds of feed out of the droppings for every 100 pounds of ear corn given the steers.

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But, on the other hand, when the steers are fed ground feed there is apparently but little valuable material for hogs. These facts are of much importance to the practical feeder, who frequently is saved from loss on his feeding operations solely by the hogs which follow the steers.

### SUMMARY OF RESULTS.

1. The results of the present experiment in the main confirm the results obtained in a similar experiment, and published in Bulletin No. 34.
2. The "balanced ration" produced much the best gains, and at a less consumption of food per pound of gain than the corn ration, whether fed as corn meal or as ear corn. The lot made one pound of gain on 7.52 pounds grain fed, and 2.39 pounds fodder, while the lot fed corn meal required 9.11 pounds grain and 2.09 pounds fodder to make a pound of gain.
3. But the lot fed a balanced ration consumed a greater total weight of food than the lot fed corn meal. During the 147 days they were fed, each steer in the lot ate an average of 20.8 pounds grain feed and 6.6 pounds fodder daily, on which he made an average gain of 2.76 pounds daily. The steers fed on corn meal ate 18 pounds meal and 4.13 pounds fodder daily per head, on which they gained 1.97 pounds per head.
4. The lot fed a balanced ration gained .79 of a pound daily per head more than the lot on corn meal, for which gain they consumed only 2.8 pounds of grain and 2.47 pounds of fodder daily more than the lot fed corn meal; or at the rate of 3.5 pounds of grain and 3.1 pounds of fodder per pound of gain, while we have seen that it required 7.52 pounds of grain and 2.39 pounds of fodder to produce a pound of gain. These facts prove that the better gain of this lot was due more to the quality of the food than to the fact that they had better appetites.
5. The mixed grain ration stimulates the appetite more than the corn ration and induces the steer to eat more heartily of it than he will of corn meal.
6. The steers fed on the mixed grain ration brought a better price on the market than either of the other lots, because they were in better condition. They averaged, on day of sale, 136 pounds per head more than the lot fed corn meal, 160 pounds more than the lot fed ear corn in the barn, and 164 pounds more than the outdoor lot.
7. The experiment shows that, for rapid gains and top prices, the balanced ration excels any corn ration.
8. But this does not necessarily imply that the balanced ration affords the cheapest gain. At the cost of feed in this case, 88 cents for oil meal, 50 cents for bran, and 35 cents for corn meal, per cwt., the gain produced by the mixed feed cost 3.94 cents per pound, while the gain produced by the corn meal cost but 3.5 cents per pound.
9. At the same price for the two lots in the stock yards, the lot fed corn meal would have been the more profitable. As it was, the lot on a balanced ration brought 10 cents more per cwt. than the lot on corn meal, but, even then, there is but a slight margin of \$3 on the whole lot in its favor, or only 60 cents per steer.
10. The results, therefore, do not warrant an indiscriminate use of oil

meal and bran when corn is cheap. Look well to their cost before you purchase.

11. In this experiment, the corn meal gave better returns than ear corn. In our first feeding experiment, reported in Bulletin No. 34, the ear corn gave better returns than corn meal. The question whether it pays to grind is, therefore, not settled.

12. The steers on ear corn voided in manure upwards of 15 per cent. of their grain undigested, while those on corn meal voided but 6 1/2 per cent. The per cent. of grain found in the droppings when whole corn is fed agrees with the results of a previous experiment to the same effect.

13. The cost of the gain on ear corn was, in this experiment, half a cent per pound higher than the cost on corn meal. It is probable, however, that when hogs follow the steers, this difference will be more than balanced by the larger per cent. of hog food furnished when ear corn is fed.

14. In spite of the fact that it was a favorable winter for outdoor feeding, the outdoor steers gained less and ate more than the indoor steers, though fed the same. This confirms our former experiment, in which it was found that the two lots gained alike but the outdoor steers ate a good deal more.

15. In the present experiment, the cost per pound of gain on ear corn was 3.99 cents for the indoor lot, and 4.35 cents for the outdoor lot. While the showing is thus in favor of barn feeding, the feeder should, nevertheless, count the cost of providing adequate barn room, and of the extra labor stabling involves, before he abandons the open yard with the conventional sheds.

## Irrigation.

### KANSAS IRRIGATION CONGRESS.

Last Saturday, October 17, 1896, closed a three days' session of the fourth annual session of the Kansas Irrigation Congress, held at Great Bend. There was only one point of weakness, and that was attendance, which, owing to political excitement, was small—too small for such an important convention. The attendance was, however, select if not numerous. The faithful irrigators were present, and so, too, were the enthusiastic citizens of Great Bend.

Of all the great irrigation conventions held in the State, this session of the Congress presented the most able, valuable and instructive papers, addresses and discussions ever presented in Kansas. They were more practical, business-like and interesting as a whole than those of any previous session.

The opera house where the convention was held was decorated for the occasion by the high school pupils. It was ablaze with "old glory" from stage to outer door, and great big wild sunflowers caught up the festoons and draperies. Above the proscenium arch hung a large canvas representing the great seal of Kansas, and facing in along the lower part of the balcony was the inscription in evergreens over a row of small flags, "The Desert Shall Blossom as the Rose." It was all artistic and effective.

The Congress was called to order by the President, Capt. J. H. Churchill, of Dodge City, who, after the formal opening exercises, delivered his annual address, which was well received. He began by paying a well merited tribute to Great Bend and to that great irrigation promoter, Mr. E. R. Moses, of Great Bend. He then proceeded as follows with his

#### ANNUAL ADDRESS.

In the few years past the friends of irrigation have every reason to congratulate themselves on the work accomplished. While irrigation by water supplied from ditches from the river had proven successful in Kansas and other parts of the West for some years before, yet the individual irrigation plant, the windmill and reservoir, that is doing good work to-day, while the ditch and river are comparatively dry, was distinctly the offspring of the Kansas Irrigation Association.

Many of our irrigation farmers, with promising orchards, fine reservoirs and

surroundings, owe their success largely to the knowledge obtained in pumping machinery, crops to raise, trees to set out, how to cultivate and irrigate, from the papers and addresses on the programs of the yearly meetings of this association.

It has always been the aim of this association to obtain papers from practical irrigators, men who have and are making a success of this form of agriculture, and to enlist the co-operation of the press in reporting and publishing the meritorious papers read, and to engage as speakers and writers on irrigation topics, business men of ability, lawyers and statesmen.

To the press in a large degree is this association indebted for its success. The press has ever shown itself ready to help along the cause; their columns have been open to the best literature on irrigation; they have played their part well in instructing an indifferent and doubting public that irrigation was not a dream or a scheme of real estate men and boomers, but a coming necessity to the future welfare and prosperity of the country. The politicians and statesmen who have attended our meetings came by invitation to learn of the needs and wants of the people whom they represent. It has made friends for us at the State and national capitals. Our representatives, Congressmen and Senators are pledged for legislation that will help, aid and assist the cause of irrigation.

The Kansas Irrigation Association was born in this city four years ago; disowned at first by some, who thought it treason to talk irrigation; looked on with distrust by others. The prospect for a vigorous growth looked doubtful, but by reason of a splendid wet nurse, named underflow, the child grew rapidly, expanded and developed. Within a year it numbered its friends by the thousands, and best of all, the doubters and skeptics were in line, doing more shouting if possible than anybody else.

It is right, after four years eventful pilgrimage, that this infant, irrigation, should return to the parent in the fullness and strength of manhood, and report the progress made, and the outlook for future advancement and development. The forces that have brought irrigation up to its present standing is the press, the practical irrigator, the railroads and the public-spirited enthusiasts, who know a good thing when they see it, and are willing to sacrifice time and means to help better the condition of the people among whom they live. That the press has played an important part in the spreading of irrigation knowledge, none will deny. The work of the enthusiast on wind irrigation has, I know, been sneered at and made light of by some. They have not been given credit for what is justly their due, for I know from what I have seen and heard and my own personal experience, the practical water irrigator would not have come to the front had the enthusiast not found it out, and in many cases made it clear to him that it was his duty to tell the people what they knew of irrigation. These men who handle the water, grow big crops, that are here on this program, and others we have had, came by invitation from those who are workers and enthusiasts. The two work together. The present proportions of irrigation belongs to all those who have unselfishly labored in its interest and to the advancement and prosperity of our common country.

Too much credit cannot be given to the railroad companies in aiding the cause of irrigation. They have made it their cause. The land department of the A., T. & S. F. railway, under the able management of Mr. John E. Frost, commissioner, early recognized what irrigation meant to the west part of the State, and along the line still further West of the system he represents. He has attended and taken an active part in our meetings; a very large measure of the success of our association belongs to him.

I believe in irrigation, but not in any wild, flighty way. The pump, windmill and the reservoir are indispensable now that we have learned their pleasures and uses. This is my advice from a few years experience: Get a good steel back-gear windmill, a fair sized reservoir—not too large, a small vegetable garden for the family, and the rest in orchard and vineyard and some small fruits. Go slowly and thoroughly. Start with an acre the first year and always make the limit what you can care for and cultivate well. Many of the failures have come from trying to spread over too much ground at the start. Stock the reservoir with fish, build an ice-house near by, and you have made a long stride toward prosperity and pleasant home surroundings. In my opinion, the men who can make a living from their irrigation plants alone in the present development of the country are few. When the orchards and the vineyards get to bearing they will become self-supporting and pay a profit. In the meantime, my friends, what shall we do? Turn your eyes to the dear old cow in the pasture, the greatest mortgage lifter of the age, and the best investment in this part of the country to-day. I would say to those who can get out to cheap pasture of

the West, to those who will come in and settle with us, get a few cows, save the increase. While the irrigation plant, with all the blessings and comforts it brings, is almost indispensable, yet the cow is the dearest friend to you and your family, an absolute necessity. Do not put all your means into the ground, mill and reservoir and improvements; a few cows will make your investment complete, afford you an assurance for prosperity, an insurance against adversity.

It will be many years before the great plains will come under general irrigation. In the meantime the prairie of the West—the buffalo grass country—affords a grand opportunity for investment for a man with small capital. In many places water is available and abundant. With \$200 in a windmill, pump and suitable reservoir, a small tract of land for orchard and garden, and with forty or fifty cows to graze on the almost limitless range, doubt not the possessor has the foundation for success. The country is large, the opportunity great. I wish it could go out to those seeking investment of a small capital that western Kansas, and it is a large State of itself to-day, presents opportunities for the stock-grower and irrigator surpassed by no other country. There are millions of acres of rich grass waiting for cattle to grow and fatten on it, winter as well as summer. I say to the young man, the middle-aged man, and the older man, come west and see our stock ranches, fields of alfalfa, and modern irrigation plants, and you will behold the most successful and independent farmer of this day and age, and best of all, you will find room for many more.

Realizing that we have a lengthy program, full of merit, which you are all anxious to hear, it would not be either wise or just to detain you longer from its full enjoyment and profit. The gates and hospitality of this beautiful city will be open to you, and I doubt not the benefits of this fourth annual meeting will be widespread. This broad and fertile valley should be dotted with irrigation plants, orchards and vineyards. An added prosperity should come to the people of this favored section. Beautiful homes should meet the eye on every side, filled with happy, contented people. Again, I bid you all welcome, in the name of the association, feeling well assured your time will be well spent, a knowledge gained, that there are yet victories to be won in irrigation and in the full development of the country in which we have built our homes.

The Congress then received an eloquent welcome from Mayor Moses, of Great Bend, who recited the discouraging results of the drought of the past four years and their possible recurrence in western Kansas, hence his great pleasure in welcoming irrigators, and while our land does not contain gold and silver minerals, it is blessed with a great and permanent underflow of water. He expressed a firm faith in irrigation, also in western Kansas.

In behalf of the Congress Judge J. S. Emery, of Lawrence, made the response to the address of welcome. He began with that now famous sentence of Tom Reed's, of Maine: "Beyond the Mississippi lies all the wealth and greatness of the days to come," and said that this was true, because the people were learning now to make their farming conform to the plans of the Almighty, and success with wealth in her train was coming. He read also an editorial from the Chicago Tribune which was received with much applause. The clipping said: "Kansas can boast of a greater diffusion of popular education and a smaller per cent. of illiteracy and crime than any other community on the face of the globe. And for all that pertains to a strong and vigorous State the history of civil society furnishes no parallel."

At this point Col. Blue, who had quietly taken his seat in the audience, was loudly and emphatically called for, though he was not to speak till evening. On the earnest solicitation of President Churchill Col. Blue spoke briefly of what he believed to be the needs of Kansas and her ultimate redemption from the "semi-arid" columns.

The afternoon session, Thursday, was opened by M. B. Tomblin, of Goodland, a member of the State Board of Irrigation, with a paper on "Deep Well Irrigation and Irrigation on the Uplands." This paper was listened to with keen interest and will soon be published in full in these pages. Mr. Tomblin was a target for an hour's questioning from the audience after reading his paper, and he further stated that there was no further question as to the feasibility

of irrigation. In western Kansas, by small irrigation plants, the farmer could readily support his family, but he advised stock-raising in connection therewith for profit. The next Legislature should pass a law requiring road overseers to dam the draws, so as to create numerous reservoirs. The State Board of Irrigation has demonstrated that the water supply is ample to justify irrigation. The average cost of a small plant for a deep well is about \$400.

Dr. G. Bohrer, of Chase, Rice county, gave some of his experience with irrigation, and urged the culture of sugar beets, alfalfa and the cow. He could raise 800 bushels of beets or six to ten tons of alfalfa per acre by irrigation.

John E. Frost, land commissioner of the Santa Fe railroad, who has been one of the staunchest supporters of irrigation, read a thoughtful and trenchant paper on "Progress of Irrigation in the Arkansas Valley." After reviewing the history of irrigation in Kansas and Colorado, along the Arkansas river, Mr. Frost spoke as follows on the opportunities for developing the creamery interests in the State: "In this connection, I will say that I have taken deep interest in the creamery industry, am full of faith in it and have advocated it for a long time. I have recently taken the trouble to secure some reports on this industry covering the southwest quarter of the State, that region lying within lines drawn west and south from the northwest corner of Marion county to the west and south lines of the State. I do not think that the reports I have cover the full extent of this industry in that region, but such as they are, they give an approximately fair idea of its extent and results to the farmers and business men. There are in the region named thirteen creameries and thirty-one skimming stations in operation, which use over 40,000,000 pounds of milk annually. The average price paid to the farmer for milk is 60 cents per hundred pounds, which brings a revenue direct to the farmers of this region of about \$250,000 annually. The butter product of these creameries is about two and a quarter million pounds, the bulk of which is shipped to the eastern markets and brings into the State annually nearly \$500,000. Think how important an industry this is. In the first place it is supplying the farmers with cash in hand every thirty days. Then when we take the results of a year's work, half a million dollars is no small item to be distributed in a year from this one industry, which is yet in its infancy. It has practically all sprung up within the last four or five years, and is an industry which can scarcely be overdone, because, as I have stated, its product is not dependent at all upon the local market but is shipped to the great commercial centers of the East. Instead of forty-four creameries and skimming stations in this quarter of the State, I want to see that number in every county of this region. The other branch of live stock raising must keep pace with this. Our farmers and merchants will then be prosperous, our great possibilities developing and our advantages being put to their proper use. Irrigation to such extent as is practicable with each farmer, is a help to this end, and that combination of milk and water is an honest and consistent one."

"Underground Waters of Western Kansas and the Means of Bringing Them to the Surface" was the subject of an exceedingly interesting address by Willard D. Johnson, of the United States Geological Survey. He is at present stationed at Garden City and is making some careful investigations and experiments in making surveys, the testing of rock stratas, quantity and pressure of water and the geological formation of western Kansas. He explained the relation of his department work to that of irrigation by saying that the hydrographic survey measures rainfall, temperature, sunshine and winds, also gauges the streams, rainfall and the run-off. The main source of supply is the underground water, improperly called the "underflow." Mr. Johnson has been making some experiments and investigations as to the rate of motion of the

underground water at Garden City, where the grade is seven and one-half feet to the mile and the rate of discharge is one-third of one foot per day. From his careful study of the water supply he concludes that it will pay to put in irrigation plants—engines for large plants and steel windmills for small ones. The valleys for irrigation and uplands for grazing. The investigations and experiments of Mr. Johnson will prove of exceedingly great value to Kansas.

The evening session was first addressed by Geo. M. Munger, of Eureka. He thought what the people wanted was exact information regarding irrigation, such as was already extant, and the work of the State board should be devoted more hereafter to the dissemination of such information to the people. In reference to orchard irrigation, he had only watered trees set out this season and they had made a vigorous growth of four feet. The rainfall so far has been of little value to orchards. He advised every one to keep a rain gauge in order to know exactly the amount of rainfall.

Congressman Dink Blue was then introduced and made a talk on "The Duty of the General Government to Irrigation on the Great Plains." He reviewed the work of legislation, favored more liberal appropriations, scored Secretary Morton for his indifference. He thought the river and harbor appropriation bill was the only place in which to secure an adequate appropriation.

The paper by Secretary Coburn, of the State Board of Agriculture, on "Some Other Things," was a decided hit with the audience, and we publish it in full this week.

The last speaker of the evening, Mr. Wiley Anderson, of Cimarron, Superintendent of the Eureka ditch, the biggest and driest ditch in Kansas, said the Arkansas river was a 16 to 1 stream, sixteen miles wide and one mile deep, that is so far as the underground waters are concerned. He had a theory regarding lateral ditches from this stream which he did not make very clear to the audience.

The first paper at Friday morning's session was "Surface Water of Western Kansas," by W. G. Russell, of the United States Geological Survey, Russell, Kas. This paper received careful attention and will be published in full for the benefit of FARMER readers.

The next paper was one of great interest to individual irrigators, on the subject of the "Pump Problem," by Prof. O. P. Hood, of the State Agricultural college, and will later appear in full in this paper.

Another paper that will interest people in southwest Kansas was by I. L. Diesem, of Garden City, on "What a Man Can Do on a Forty-Acre Farm in the Arkansas Valley."

Secretary of State, Hon. W. C. Edwards, made a decided hit with his paper, on "A Little Farm Well Tilled."

The afternoon session was opened with a discussion on "Fish Culture," by D. C. Luce, of Great Bend, and President Churchill. D. C. Luce led out with a plain, practical talk about the fish that may be raised in the irrigation ponds of Kansas. He had on the platform a large glass globe in which were black bass, croppies sun fish, rainbow trout and several other species. He expatiated at length on the qualities of each as an "eater," and the best way to obtain practical results. He likes carp because very few other people do, and he, at length, told how they should be cared for in ponds by themselves, not fed too much. He said that when properly cooked they were as fine as any mountain trout that ever swam water. He was asked how to cook them and said that all fish without exception should be killed at once on catching by cutting their heads off and letting them bleed, which improves the flavor. Then carp should be parboiled until almost done, then stuffed and baked brown. For the trimmings of this dish he referred the convention to his wife.

Mr. Churchill, of Dodge, President of the State Irrigation convention, followed with some supplementary remarks on fish culture, emphasizing

many things said by Mr. Luce. Mr. Churchill is a practical and an ardent irrigationist. He thinks that a reservoir and windmill are necessary to family peace and comfort. His little five-year-old daughter has learned to swim in one of his big ponds, and a dive in its five feet of clean, sweet water is not to be despised on a sultry summer day. There he raises fish so that his family has a supply at least twice a week, fresh and in perfect condition, with practically no cost to anybody. Besides irrigating his farm, garden and orchard insuring him crops from each, he cuts, as they all do, enough ice to stock his ice houses for the summer, and his children and their friends use the reservoir as a skating rink. It is like a page from a fairy tale, the stories they tell of what all they do with these wonderful reservoirs, and to nail the statements they bring along pictures to illustrate them. One of the most notable perhaps is that of the Richter farm, in Finney county, the immense reservoir having two windmills to keep it full.

Col. J. G. Stowe, of Kansas City, Mo., also told some fish stories, in attempting to establish the "Relation of the Wholesale Dealers to Irrigation." He believed that the salvation of Kansas lay in diversified farming and small farms well tilled.

On the topic, "Wanted, an Education," Mr. Fred Dumont Smith, of Sterling, made a stirring speech in behalf of individual experimenters in irrigation and urged the Congress to get out a manual or an "A B C of Irrigation," in order to save farmers from further loss who had invested in small plants without previous or even elementary knowledge of the business.

Judge W. B. Sutton, of Russell, made an address on the topic, "Report of the State Board of Irrigation." He stated that though slated to make a "report" for the board, it would be manifestly improper to do so before reporting the result of their labors to the Legislature, as required by law. He then proceeded to speak as an individual of the result of the experiments made in expending the appropriation made by the State, which he considered had been productive of much good. They had tested the great underflow waters by sinking some twenty wells in various portions of the semi-arid half of the State, and had proved that the supply of water beneath the soil is practically inexhaustible. Where in 1888 but twenty-six men were trying "small" irrigation, nearly 3,000 individuals are now irrigating on a large scale from five to forty acres or more, and finding it profitable business. He considers the windmill the cheapest power on earth. There is always plenty of wind in Kansas; it is even cheaper than water. He advocates small farms, carefully and systematically tilled, with a few cows, horses, pigs, poultry and sheep, and only enough grain raised to feed them and the family. He would not give the country over to the cowboy, but he is friendly to the opinion that the Kansas farmer is wasting his energies in trying to raise wheat.

The night session opened with a paper by Hon. D. M. Frost, President of the State Board of Irrigation, Garden City, on the subject of "Water Supply of Western Kansas." This interesting paper is reserved for publication in full later.

The chairman of the evening, Mr. Diesem, then introduced to the audience one of the oldest friends of irrigation in the State, as well as one of the oldest residents in point of time, Judge J. S. Emery, of Lawrence, whose topic was "The Great Plains Country, the Home of the Empire." Judge Emery was greeted with applause which was almost continuous as he graphically sketched his picture of the material growth of Kansas, mixing it with anecdotes and political notes in most amusing conjunction.

Chancellor Snow, of the State University, next delivered an address on the subject of "The Destruction of Grasshoppers and Other Insects in Irrigation Districts." He began by referring to the fact that a few years ago the grasshoppers or locusts were so numerous as to stop railway trains. It

is the same enemy that we now have to deal with, though not of the Rocky mountain species, but we still have the native species, three varieties—the differential, striped and long-winged locusts—the first doing the most damage at present in Kansas. In 1875 the Rocky mountain locusts had destroyed crops to the amount of \$40,000,000, as estimated by Prof. Riley, the government authority. He referred to the fact that Massachusetts has spent in six year's time \$525,000 in an effort to exterminate on a territory forty miles square the gypsy moth, an imported bug that threatens the prosperity of the country. Kansas, he said, had expended \$10,000 in an effort to exterminate the chinch bug, and that the extermination was bound to follow, but that further experiments were necessary. He believed that it is the duty of the United States government to aid the States handsomely in their efforts to exterminate these plagues. The government would come quickly to their aid if an invading army were to appear, and he considered these insects in the light of an invading army. Simple methods enforced by legislative acts would exterminate the grasshopper, he thought, but none must tire in well-doing. He read the laws of 1877 empowering the township authorities to call out the inhabitants on certain days to drive and fight the grasshoppers to extermination, and said that while they were laughed at they had, just the same, been of salutary effect and value. He favored yet more stringent laws. Flooding the ground in the early spring he believes to be an excellent method. The locusts do not lay their eggs around promiscuously, but select certain localities. By seeking out these spots early in the spring and flooding them the pest can be kept down to the minimum, but eternal vigilance is the price of protection from them. He described the "hopper-dozer"—the big sheet-iron pan filled with tar or coal oil—that many Western farmers use, and said that it was an excellent invention and served the purpose well. The "wheat head army worm" that is a pest in some localities can be entirely exterminated by burning the stubble of the field upon which it fed before replanting. Rotation of crops is also excellent. In conclusion he stated that he considered these things of national importance and hoped to see the government take up the work of extermination just as it would go about repelling the advance of an army. President Snow, in closing his address, stated that he thought this convention should come to eastern Kansas in order to show the importance of irrigation to the whole State, and accordingly invited the convention to come to Lawrence for the next annual meeting.

In response to this Hon. E. R. Moses made a speech in the same line, urging the same action and made a motion that the invitation be accepted. The motion carried by an overwhelming vote.

The third day's session began by a talk on "Winter Irrigation," by N. F. Daum, of Great Bend, and C. H. Langstreth, of Lakin, which was followed by a timely and practical address by President Geo. T. Fairchild, of the Kansas Agricultural college, on "A Fundamental Problem in Irrigation."

The last day was crowded with other good things, able addresses and instructive papers, such as "Horticulture as Affected by Irrigation," by W. H. Barnes, Secretary State Horticultural Society; an illustrated lecture on the "Methods and Benefits of Subsoiling on the Great Plains," by Prof. H. R. Hilton, of Topeka; an address by Erasmus Haworth, Professor of Geology, State University, Lawrence, on the subject of "Artesian Water of Kansas," all of which will be given attention in subsequent issues.

The Committee on Resolutions presented the following report, which was adopted:

Resolved, That we appreciate the work of the State Irrigation Board and know it has done all and only just such work as it could do under the provisions of the bill creating it, and now think its power or the powers of some other authority or commission should be greatly increased by the next Legislature, so as to enable it to meet all the wants and needs of our people in



The new woman commands love and admiration because she has the beauty and attractiveness of health and high spirits. She is truly a woman. She is not necessarily an athletic woman. She is merely strong and healthy in every way. She knows something of her own physical make-up. She knows the importance of the organs that make her a woman. She knows that if she keeps them healthy she need never be very sick.

"How can she keep them healthy?" By proper care in the first place—by proper medicine in the second. Dr. Pierce's Favorite Prescription is for the cure of all the ills distinctly feminine. It makes a new woman out of a fagged, nervous, thin, useless, worn, discouraged wreck of femininity.

It is for one purpose only—to make women strong and well in a womanly way—to make life worth living—to drive away the dragging, aching, insanity-producing pains from which diseased woman-kind suffers. It is the invention of a regularly graduated—skilled, expert specialist in the treatment of the diseases of women. It has had a larger sale than any other like medicine. Get it at your druggist's and do not be persuaded to take a substitute.

Constipation is the father of all manner of maladies. If it did not exist, or was in cases promptly relieved, the majority of medical books could be safely destroyed. It is the easiest sickness to neglect and the simplest to cure. Dr. Pierce's Pleasant Pellets will cure constipation every time. They cure it promptly, completely and permanently. They never gripe.

## FARMERS

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

carrying forward the great work of reclaiming our semi-arid lands.

Resolved, That Kansas most earnestly asks the general government to create an Irrigation and Forestry Commission for the examination, utilization and conservation of the water supplies and forest growths of arid and semi-arid America.

Resolved, That we further appreciate the work done in Kansas by the United States Geological Survey, under the immediate direction of Director F. H. Newell, in the gauging and the measuring of river waters of this State, and urge that this work be carried forward to its full or final completion at as early date as may be possible.

Resolved, That we extend our most hearty thanks to the citizens of Great Bend for the many courtesies we have received at their hands, as also to those gentlemen who have addressed this convention and to the press for giving us a hearing before the general public.

The following officers were elected for the ensuing year: President, I. L. Diesem, Garden City; Secretary, L. Baldwin, Great Bend; Treasurer, Geo. M. Munger, Eureka. Executive Committee—John E. Frost, Topeka; E. R. Moses, Great Bend; Judge W. B. Sutton, Russell; Prof. E. Haworth, Lawrence, and D. M. Frost, Garden City. Capt. J. H. Churchill, of Dodge City, was appointed delegate to the National Irrigation Congress, to be held at Phoenix, Arizona.

### Five Little Books.

All interesting and profitable reading. Books about "Texas," "Homes in the Southwest," "Glimpses of Arkansas," "Truth About Arkansas" and "Lands for Sale Along the Cotton Belt Route." If you are seeking to better your location, send 10 cents to pay postage on any or all of these books, to E. W. La Beaume, Gen. Pass. Agent, Cotton Belt Route, St. Louis, Mo.

To St. Paul and Minneapolis via Burlington Route.

Two splendid through trains each day from Missouri river points to the north via the old established Burlington Route and Sioux City line. Day train has handsome observation vestibuled sleepers, free chair cars, and dining cars (north of Council Bluffs). Night train has handsome sleepers to Omaha, Council Bluffs and Sioux City, and parlor cars Sioux City north.

Consult ticket agent.  
L. W. WAKELBY, Gen. Pass. Agt.,  
St. Louis, Mo.

## The Home Circle.

### A HOLIDAY SONG.

A little way from Work-a-day,  
Down the small slope of mild desire,  
There swings a gate to bar the way,  
With roses and sweet-brier.  
While you and I, when time is ripe,  
Upon its fragrant threshold stand,  
And look across the harvest fields  
In fruitful Leisure-Land.

In Leisure-Land like breath, the balm,  
Sighs from the moist lips easily,  
The eyes shine clear, the brow is calm,  
The heart beats full and free.  
There is no sound of fret nor strife,  
Of urging call nor harsh command,  
One drinks a fresh, sweet draught of Life,  
In blessed Leisure-Land.

The birds sing soft, the cushats coo.  
The breeze just whispers to the flowers,  
Deep-lined with autumn, as they fade,  
To mark the peaceful hours.  
The dancing brooklets wider sweep  
All voiceless where the blue flags stand,  
Rocking the drowsy bees to sleep,  
In restful Leisure-Land.

Then come, while harvest moon is full,  
Sweetheart, adown the sloping way,  
And whisper secrets to my soul,  
Too dear for common day.  
A little space, for thee and me,  
Which, heart to heart, and hand in hand,  
Apart from weary Work-a-day,  
We'll spend in Leisure-Land.

—Grace E. Denton, Massey's Magazine.

### CHINESE WOMAN DOCTOR.

Only One Ever Graduated from an American Medical College.

Mrs. Dr. Kim Eca da Silva is the only Chinese woman graduate of an American medical college. Recently she lectured before the Christian Endeavor society of the Calvary Presbyterian church, in San Francisco, and proved that she is a very interesting woman, worthy of a name which is euphonious, but occupies nearly a line of type.

It appears, says the New York World, that she was given by her father, after her mother's death, and while she was still a very young child, to Rev. and Mrs. D. B. McCartee, who were among the early missionaries to China. When only seven years old she was brought to this country and remained a year and a half, returning nine years later. With the exception of a year in Mrs. Life's famous old school in Westchester county, N. Y., all her education has been received from masters and governesses until she entered the Woman's Medical college, the New York infirmary for women and children, from which she graduated with distinction in 1885.

This was followed by two years' hospital practice in New York and Washington. Her stay in the latter place was while her adopted father was secretary at the Japanese legation. The family returned to the orient and all took up missionary work, the little doctor practicing the while among her people. In Tokio three years ago she married a Spanish merchant, Eca da Silva. Business interests took him to Honolulu, but the enervating climate did not



ONLY CHINESE WOMAN DOCTOR.

agree with her, and it was decided to come to California. With them is their little year-old son.

Dr. da Silva is recuperating, and the stay in California may be prolonged indefinitely. She has been induced to take up a work recently instituted here—that of interesting the young people's societies in foreign missions. To that end she will lecture next month through southern California. Her last talk was replete with interest. She gave an insight into the life of Chinese women, and told of the possibilities for them. She urged a course in medicine for those who would go into missionary fields, as in that way the home life of people could be reached, and while healing the bodies the hearts could be reached. She gave as the reason why

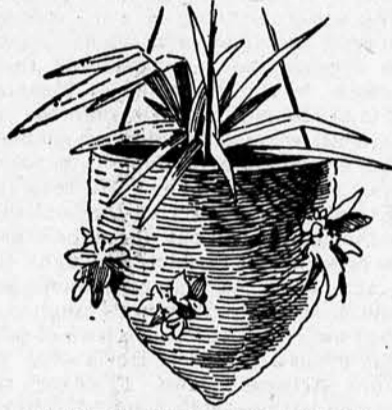
Christianity had not done more for her people that it had not reached the women, who, even in virtual bondage as they are, exert a far-reaching influence.

Dr. da Silva speaks fluently in the most cultured English and seems ever ready with bright anecdotes. She is, after her race, small, has a cheery, bright manner, and superior intelligence has robbed her face of even a suggestion of Mongolian stolidity.

### A HANGING BASKET.

How to Make One from a Number of Ordinary Bottle Corks.

Ordinary bottle corks may be used for many kinds of fancy work. One of the prettiest ways of using them is given in the Boys' Own Paper, from which the illustration is taken. If you do much cork work it is advisable to get a special knife, for the ordinary knife will dull with but little use. A small round of pasteboard must be cut for the



PRETTY WAY TO USE CORKS.

bottom and on this the first cork is to be glued. Mucilage will not hold. Arrange the corks like brick work; that is, overlapping, and build the basket like the figure. When finished and dry coat the inside with oil paint, going over it twice, so as to insure that the basket will be water tight, a necessary precaution against the softening of the glue. It is better to extend the wires well down the sides, especially if a pot is to be placed inside the basket.

### SIMPLE REMEDIES.

Some That Have Often Been of Service in Emergencies.

We often laugh at old-fashioned people who keep a regular stock of remedies, and seem able to offer a cure for almost every ill, but these same home-made medicines have often done much good while waiting for a physician, or in case of an accident when to wait might have been fatal or have caused permanent injury.

The following are only a few hints whose merits are known to the writer and may be of service in any emergency:

For a cold, for hoarseness, or when pneumonia is threatened, take equal parts of dried hops, pennyroyal and sage, place in a kettle and pour about a quart of boiling water upon them; let these boil for a few minutes, then stop up the spout and place a cloth about the lid, opening in such a way that it can be brought up over the patient's face; let the fumes be inhaled as hot as possible. When not using it, it should gently simmer in the same room, and will make the atmosphere moist and grateful to the sore lungs. At the same time the chest and soles of the feet should be rubbed with turpentine and sweet oil alternately.

For inflamed eyes take a piece of alum and with it stir the white of an egg until it becomes a creamy consistency, then spread between a fold of thin linen and lay upon a handkerchief, after which bind it over the eyes.

For a burn take one part fresh lard and two parts baking soda, mix together and spread upon pieces of white or cream tissue paper, lay these gently upon affected part, and bind on with muslin strips. While waiting for the lard and soda the burn should be bathed with witch hazel.

For earache or toothache put a large cup of salt into a skillet, and heat it until very hot, stirring all the time. Put it into a cloth and tie with a string into a loose bunch. Hold this as hot as can be borne over the ear or cheek. If covered with a thick piece of flannel the heat will be retained longer.

For a bruise or sprain, bathe with

# Scott's Emulsion

Of Cod-Liver Oil

50c. and \$1.00 at all druggists.

with Hypophosphites, is a fat-food and more. It causes such changes in the system that the gain is permanent and improvement continues even after you cease taking it. Sound flesh; rich blood; strong nerves; good digestion; aren't these worth a thought?

hot water and afterwards bind on a cloth saturated with hot witch hazel.

These remedies are so simple and harmless in their nature that they can be used by anyone, and are sure to help, if they do not always cure.—Workman.

### FOOD FOR INFANTS.

Billed Milk is More Easily Digested Than the Raw Article.

The Journal of Practical Medicine quotes several articles on the feeding of infants—a subject to the importance of which the profession has only recently awakened. Practical and everyday experience shows that when milk is boiled it is not only more easily digested, but that it has a nutritive value quite equal to the raw article. Experiments undertaken by Dr. C. Chamouin, first with kittens and afterward with infants, showed after exhaustive and repeated trials that the kittens fed on boiled milk were "twice again as fat" as those supplied with the raw milk, and that the boiling of milk is the means of preventing the loss of innumerable lives by gastro-intestinal disease. Not only so, but it is more easily digested, and agrees with a far greater percentage of cases than unboiled milk. There is ample authority for this view of the case, but certain points must be attended to, else the results will not be so favorable. First, all the vessels in which the milk is carried, boiled and afterward kept, must be scrupulously clean. Nothing else but absolute freedom from dirt will suffice. Then it should never be boiled in an open vessel; this should have a close cover. Lastly, it need not be kept at 212 degrees Fahrenheit for more than 20 minutes. This is sufficient to sterilize and cook it, and no further boiling is necessary.

### Take Care of Your Veil.

It is a great temptation when one enters the house hot and tired to take off one's veil and fling it aside into a crowded drawer, letting it lie there, rumpled and shapeless, until next called into use. Nothing is so easily spoiled, so easily made shabby as the dainty bit of gauze now universally worn. To preserve it properly it should be carefully stretched on the width and folded, preferably over a bit of cardboard or other stiff material.

### Charming New Bed Cover.

A beautiful new bed cover of latest fashion is made from fine white organdie. In the center there is a square of the material bordered by a band of Renaissance lace. Next this is a wide border of the muslin, then a narrower border of the lace. The spread is finished with a wide frill of the muslin. The pillow shams that go with the spread are also of muslin. The square of muslin in the center of each sham has a large ornamental letter, made from the braids used for Renaissance laces. Book muslins of a good quality could be used for such cover, which is usually over another of colored or white china silk.

### Left Over from Breakfast.

An economical housewife, whose family dinners are always good, occasionally utilizes the cupful of cold oatmeal, hominy or wheat left from breakfast in the following way: A thin layer of the porridge is put in the bottom of a small pudding dish and seasoned with sprinkling of grated cheese, salt and pepper, and then a few tablespoonfuls of stewed tomatoes added. Another layer is seasoned in the same way. Sometimes the top layer is dusted with fine bread crumbs. The dish is heated through and browned in the oven and served with roast meat. At other times a cupful of gravy and the tomatoes are used in making this excellent course. Occasionally it is used as the base of a good pudding, either hot or cold, and is eaten with whipped or plain cream, and preserved fruit, or a sauce of stewed fruit.

### New Things for Housekeepers.

Gelatine capsules that can be turned into a soup in a few minutes and powders that are quickly transformed into sauces for meats are some of the resources for light and instantaneous housekeeping. Some of the capsules while perhaps they do not provide very nourishing food, are certainly a blessing to the dyspeptic traveler who cannot always procure a good cup of tea or coffee. A box of the capsules, a cupful of hot water and salt and pepper, and lo, one has a well-flavored hot drink more tempting than a cup of hot water.

### Milk Lemonade.

Dissolve six ounces of sugar in a pint of boiling water; mix with a gill of lemon juice, and the same of cherry. Add three gills of cold milk and stir well together. Pour through a jelly bag. This is delicious.—Boston Herald.

### How Some of Our Readers Can Make Money.

Last month I cleared, after paying all expenses, \$355.85; the month previous \$260, and I have at the same time attended to other duties. I believe any energetic person can do equally as well, as I have had very little experience. The dish-washer is just lovely, and every family wants one, which makes selling very easy. I do no canvassing. People hear about the dish-washer and come or send for one. It is strange that a good, cheap washer has never before been put on the market. The Iron City Dish-washer fills this bill. With it you can wash and dry the dishes for a family of ten in two minutes without wetting the hands. As soon as people see the washer work they want one. You can make more money, and make it quicker, than with any other household article on the market. I feel convinced that any lady or gentleman can make from \$10 to \$14 per day around home. My sister and brother have started in the business and are doing splendid. You can get full particulars by addressing the Iron City Dish-washer Co., Station A., Pittsburg, Pa. They help you get started, then you can make money awfully fast. Mrs. W. H.

### LADIES I Make Big Wages—At Home—

and want all to have same opportunity. The work is very pleasant and will easily pay \$18 weekly. This is no deception. I want no money and will gladly send full particulars to all sending 2c. stamp. Miss M. E. Stebbins, Lawrence, Mich.



## LIVER AND KIDNEY

Diseases are manifested by Backache, Rheumatism, Loss of Appetite, Foul Tongue and Weakness

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

Is the remedy you need, of equal service in mild or chronic cases

FOR SALE EVERYWHERE AT \$1.00 PER BOTTLE

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

# The Young Folks.

## OLD JOHN HENRY.

Old John's jest made o' the commonest stuff,  
 Old John Henry.  
 He's tough, I reckon, but none too tough;  
 "Too much, though's better than not  
 enough!"  
 Says old John Henry.  
 He does his best, and when his best's bad  
 He don't fret none, nor don't get sad;  
 He simply 'lows it's the best he had,  
 Old John Henry.

His doctern's jest o' the plainest brand,  
 Old John Henry.  
 "A smilin' face and a hearty hand  
 'N a religion 'at all folks understand,"  
 Says old John Henry.  
 He's stove up some with the rheumatis.  
 And they hain't no shine on those shoes o'  
 his.  
 And his hair hain't cut, but his eye tooth is!  
 Old John Henry.

He feeds hisself when the stock's all fed,  
 Old John Henry.  
 And sleeps like a babe when he goes to bed,  
 "And dreams o' heaven an' home-made,  
 bread."  
 Says old John Henry.  
 He ain't refined as he ort to be  
 To fit the statutes of poetry.  
 Nor his clothes don't fit him, but he fits me;  
 Old John Henry.  
 —James Whitcomb Riley.

## ANIMAL FRIENDSHIPS.

### Lioness and Puppy Become Chums and Cat Loves Chickens.

Among the tales strange friendships existing between different animals there is none more strange than a recent one in which a lioness adopted a bull terrier. This is said to have occurred in Somaliland, where the lioness is kept in captivity. There were a number of bull terrier puppies kept near where the lioness was confined. The puppies got into the habit of going up to the cage. The lioness watched them narrowly while they were about. When they came close to her cage she snarled in a way that frightened the little fellows off.

It was noticed, however, that to one of the puppies she showed no displeasure whatever, but, on the contrary, seemed to fancy having him about. The puppy approached the cage one day, and, after blinking at the lioness for awhile, as if trying to determine if it would be safe for him to venture further, walked boldly in.

The big lioness, instead of growling, manifested her pleasure at the visit of the youngster. She put out her huge paw and gently drew the puppy in to her. The puppy was so delighted with the warmth of his reception that he has remained with her ever since.

Another instance of the same general character is told of a maltese cat that conceived a great fondness for a brood of chicks. The chicks were not over a couple of days old when the mother hen was killed. In some way the maltese ascertained that fact and adopted the chickens forthwith. She established herself in the nest, and the little chicks snuggled into her warm fur with the utmost confidence.

When the chicks ventured out during the day the maltese foster-mother accompanied them. It is told of her that if a chick strayed off she would "mew" for it, and that it returned as quickly as for the cluck of a hen.—Westminster Gazette.

### He Was Almost a Man.

A little fellow went into a shop some days ago to buy a pair of gloves. The shopman stared at the juvenile customer and asked him what size he took. The youngster promptly informed him. "Do you want kid gloves, my boy?" asked the shopman. "Kid gloves!" ejaculated his customer. "I'm not a kid now. I want 'grow-up' ones."

### Mr. Gratebar to Phillip.

"Cheerfulness, Phillip," said Mr. Gratebar, "is a duty which you owe to yourself and your fellow man. Always take a cheerful view. Cheerfulness is a lamp which dispels the gloom of life. Keep your lamp burning always, Phillip, and others will light their lamps by yours and go on more joyfully."

### In Russia Beds Are Scarce.

Beds are quite an innovation in Russia, and many well-to-do houses are still unprovided with them. Peasants sleep on the top of their ovens; middle-class people and servants roll themselves up in the sheepskins and lie down near the stoves; soldiers rest upon wooden cots without bedding and it is only within the last few years that students in schools have been allowed beds.

## A TINY HERMIT'S HOME.

Established Either in the Goldenrod or in a Willow Tree.

After a hen hatches her chickens she has to scratch around to keep her family comfortable. Each chick, though small, has a big appetite, and, unless it is supplied, the mother is annoyed by numerous doleful complaints. In search of worms, insects and seeds she often leads her brood for long distances through the tall, wet grass. By day they are often exposed to danger from hawks, cats and dogs; they may get under the heavy foot of a horse, a pig or a man. In the night they may be snatched by skunks, minks, owls or thieves. The pleasure of eating, growing, playing and becoming acquainted with so many new things is often marred by privation, accident or the arrival of enemies.

Quite different is the early life of Seesid, who one fine morning burst through the tough wall of his tiny shell, to find himself already provided with a comfortable house barely large enough to turn over in. Seesid had no mother to bring him food or to help him find a living; his room had neither doors nor windows, and none was needed, for he can neither see nor could he travel, if opportunity were offered. He is blessed with a hearty appetite and is well protected from the scorching rays of the sun, cold and rain, and not at all likely to be disturbed by enemies. If he is unable to travel, the monotony of his life is often broken by the gentle motion of his snug house as it is tossed about by the wind. If Seesid's surroundings are such as are described above, how long do you suppose he can live shut up in a tiny dark room like a hermit?

You have heard the story of the man who suddenly found a large pile of gold in a cave and gloated over his riches till, all at once, he discovered that he was alone and without the ability to escape. He could not eat the gold, nor was he able to buy food with it. Although rich, he must perish by starvation. Seesid was more fortunate. His "cave" was not supplied with gold, but



SEESID'S HOME IN GOLDENROD AND WILLOW.

was lined all over with the nicest kind of food. All he had to do was to taste and eat until satisfied, then lie and enjoy it. As he ate and grew he needed more room, and the room enlarged much after the fashion of the shell of an oyster or snail.

The story of Seesid may seem like a fairy tale, but it is all true in every particular, as any observing boy or girl may learn, who has the opportunity and takes the pains to examine the heart-leaved willow or the Canadian golden rods from July to the following spring. Seesid's mother, whom he never saw nor knew, by what mortals call "instinct" bored a hole with her own little augur in the tender tip of the growing willow or the young stem of the golden rod, and in it laid a tiny egg. The plant to the left in the cut shows a round bunch in the stem of a golden rod bigger than your thumb, and within such an odd thing may be found a tiny worm or grub. The plant to the right looks much like a cone of the Austrian pine. The pine cone bears seeds, the willow cones bear small insects. When the egg was laid in the tip of the stem from which Seesid was to hatch, that part of the willow did not die, and thus get rid of its enemy, as we would suppose, but immediately changed its mode of growth. The stem ceased growing larger, and what would have become the long, slender leaves grew broad and short, thick and close to-

gether, making for Seesid a snug house an inch and a half high.

Isn't it queer that the willow, when thus wounded, will immediately change the habit of some of its buds to furnish lodging and food for its enemy? We do not know, but possibly in some way, sometime, Seesid may do something to benefit the willow. The willow shouldn't be very particular about it, for there are many uninjured branches and plenty of good leaves besides the small number which grow into cones.

Seesid eats and grows and moults to full size, remaining dormant with the willow through the storms of winter. After the melting snows have run into the river or sunk into the soft earth and the heat of spring begins to revive dormant buds, we suppose Seesid begins to want to know more of the outside world. As long as he needed it, the little room furnished food, but, late in autumn, the cone hardened and died. Seesid was comfortable and doubtless as happy as lonely mites can be. In his perfected new dress, supplied with two gauze-like wings and small eyes, Seesid with his newly acquired jaws tears a doorway through the hard walls, enjoys the light for a minute, and with confidence in his untried wings leaves his little cone forever. His new mode of life requires food different from that furnished by the old home. Seesid seeks something good to eat and companions of his own kind, and soon more eggs are placed in more young twigs of growing willow, to produce more young Seesids.

Next time you see the bunch on the golden-rod stalk or the cone on the willow, pull it apart and take a look at the interesting little insect, Seesid.—Chicago Record.

## VERY SMART BOY.

Thought the Horse Had No Right to Be Foolhardy.

Canine intelligence is a something that has oftentimes been the subject upon which fiction has been founded. The queer antics of the dog, and its seemingly keen perception at divers occasions, are things that have brought many a philosopher to conclude that this species of the dumb brute is well nigh human.

At one of the evening entertainments of the Carver combination a common poodle dog, if it did not show a true understanding of the situation, certainly verified the sympathetic qualifications that have so often been attributed to its kind. During the entire performance he seemed as interested as any of the spectators. It closely watched the athletes mount the tower and make their high dives, followed them in their airy flight before striking the water, and seemed to smile all over when they arose uninjured to the surface of the water. But what seemed to attack its sensibilities most was the act of the diving horses. As soon as it saw that one of the horses was being led around to the incline at the back of the tower, by which they ascend to their place, it became restless, and commenced to whine pitifully. It seemed to strike it that this was not as it should be; it grasped the unnaturalness of the feature, and expressed sympathy the best it could. It panted, and the whine grew stronger the nearer the horse came to the platform. When the horse stopped and waited a moment, the dog actually seemed to lose its breath. And as the horse fearlessly made the plunge the dog actually shuddered and seemed to be on the point of collapsing. The horse, of course, arose safely and swam to shore. Upon seeing that the horse had escaped uninjured the joy of the dog knew no bounds. It barked and wagged its tail and was as happy as could be, and but for its master would have run to where the horse was, presumably to extend congratulations upon a remarkable escape.—Minneapolis Tribune.

We know whereof we affirm when we state that Ayer's Pills, taken promptly, at the first symptoms of colds and fevers, arrest further progress of these disorders and speedily restore the stomach, liver and bowels to their normal and regular action.

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ELY'S CREAM BALM is a positive cure. Apply into the nostrils. It is quickly absorbed. 50 cents at Druggists or by mail; samples 10c. by mail. ELY BROTHERS, 56 Warren St., New York City

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Expect not, so send a 2-cent stamp to the General Passenger Agent Colorado Midland Railroad, Denver, and he will send you a fine colored picture of one.

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# 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.  
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## ADVERTISING RATES.

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

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

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

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

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

Wheat went up 4½ cents per bushel in New York last Monday. Every rise of 4 cents is worth a round million or more dollars to the wheat-growers of Kansas.

The Louisiana Planter reports that the October quarterly dividend of the sugar trust is \$1,781,250, or equal to \$7,125,000 per annum. Evidently this trust thinks times are not hard.

The rise in the prices of grain or some other cause has, within the last few days, produced a considerable change for the better in the state of the money market in Kansas, notwithstanding the continued reluctance of the banks to make loans.

European markets manifest an unusual disposition to buy American food products, the results of the labors of the farmer, and they are constantly advancing the prices for these on account of the unusual scarcity on that side of the water. It is complained, however, by the producers of American bonds and stocks that the European demand is unsatisfactory. Well, it is more important that a good market be enjoyed by American farmers than by American bond-makers.

Remember that in making up your lists of periodicals that you will need for 1897, the KANSAS FARMER can offer you rates as cheap as any other subscription agency in the United States. If you do not find mentioned in our clubbing lists all the papers or magazines you want, drop us a card asking prices on any combination you may wish. We will be pleased to place your subscription for any periodical published, not only in America but for European papers as well.

On the first Monday in July this year No. 2 wheat was worth 54½ cents per bushel in the Chicago market. On last Monday it reached 78½ cents, a rise of 23½ cents. On a surplus of 25,000,000 bushels this rise would make an addition of nearly \$6,000,000 to the cash income of the farmers of Kansas on this one crop. The rise has not probably reached its maximum yet. Corn is feeling the effects of the foreign demand for breadstuffs and may be expected to bring better than present prices.

The November meeting of Shawnee County Horticultural Society will be held at the residence of Scott Kelsey—Oakland suburb to Topeka—on Thursday, November 5. The electric cars run to within two blocks of Mr. Kelsey's fine lawn. Should the weather be unsuitable for a lawn meeting the commodious Kelsey residence will afford ample room for a large gathering. The following is the program: "Observations on Horticulture in Western Kansas," by G. W. Van Orsdal, Silver Lake. "Needed Legislation," Hon. A. L. Brooke, North Topeka. "Picking and Storing Fruits for Winter Use," Philip Lux, Topeka. "Marketing Fruits," W. H. Coultis, Tevis.

## GRASSHOPPERS AND GRAIN FIELDS.

By E. A. Popenoe, State Agricultural College, Manhattan, Kas.

The question of the control of native locusts or grasshoppers, while a matter of importance everywhere, is of special interest to the farmers in the western counties of our State. It not rarely happens that the prospective crop, under conditions otherwise favorable, is there destroyed wholly or in great part by these insects. So broad are the areas open to such attack, and so unforeseen is the serious increase of the insect foe, that little attempt is made, or is possible, with the means or preparation usually at hand.

The conditions which make such attacks possible are in part those of the surroundings and in part those of the agricultural methods in vogue, and exemption from this danger will come only with a practice changed in some respects to meet these conditions. Natural conditions favoring these attacks lie in the abundant neighboring breeding and feeding grounds of the locust. On the outlying prairies these insects have lived for centuries. There they still live and breed in great numbers. But upon the breaking of the prairie sod and the introduction of more attractive food, whether in the form of cultivated plants or the weeds of cultivation, the numbers have increased, and the more abundant herbage leads the insects toward the grain fields. Cultural methods, followed of necessity where the field is measured by square miles rather than by acres, omit soil treatment between harvesting and seeding, affording the locusts already on the ground special and favorable opportunity for their multiplication.

But the point to be considered is, how conditions and methods are to be changed for the better in this respect. Though the natural breeding places of these insects can never be entirely freed from them, they may be rendered less productive of the pests; and probably the most feasible plan here offered is the burning over of the grass lands at such time as seems most profitable in results. There is no better time for this than when the young locusts are hatched and beginning their growth and travels, although at any time before they have acquired wings, burning over will destroy most of them. For the full effect of this plan the introduction of fire at other seasons should be prevented in order that the grass left standing may furnish the fire when needed. Moreover, areas bare of food serve in a limited way as barriers to the young hoppers, when lying between the hatching ground and the grain field. Especially should the endeavor be made to lessen the chance of invasion, and to facilitate the destruction of the insects at the time of invasion in mass by keeping clear of grass the immediate margins of the grain field. Here usually the native grasses make their most luxuriant growth by reason of the cultivation of the ground alongside. This better growth acts really as a bait to the hoppers and leads them away from the short grass beyond, so that they are close at hand as soon as the grain is up.

Whatever may be the precautions taken in lines above suggested, the treatment of the field itself will also demand attention. Here the necessity will come for the destruction of the insects and their eggs, and the prevention of egg deposit afterward. Which method of these shall be adopted, if but one, must be determined by time and place.

One of the most successful modes of destroying the eggs of the locusts is by disturbing them in the ground where they were deposited and exposing them wholly or partially to drying out during the winter. The natural exit from the egg pod is the upper end of it, which is left near the surface of the soil by the mother locust. The eggs are all laid head end uppermost, and the more open soil filling the hole left by the abdomen of the egg-laying female favors the escape of the newly-hatched young. Moreover, here as in most cases, the natural undisturbed contact of the egg pod to the soil is the one most favorable to the life of the egg or embryo. If this relation be dis-

turbed, the changes are unfavorable to the hatching of the insect. Hence fall harrowing or shallow disking, so as to stir or overturn the superficial soil layer in which the egg pods lie renders these liable to destruction in several ways; throwing them out where they may be seen and eaten by birds, small mammals and other foes; exposing them to the danger of drying out in dry, open winter weather, or to injury through an unnatural contact with the surrounding soil, or, finally, inverting the egg pods and rendering more difficult the emergence of the young locust if this escapes the other dangers and reaches the time of hatching unharmed. Fall plowing or deep disking is destructive, if not to the eggs before hatching, especially to the young locusts, by preventing their escape from the soil. From egg masses buried below two inches the hatching young rarely escape, and their imprisonment may be made practically certain by harrowing and rolling such plowed soil at or before the time of the hatching of the eggs.

The usual treatment of wheat stubble after harvest is to allow the weeds to occupy the ground until next planting time. The dead after-growth is often allowed to remain because it serves during winter to catch and hold the blowing snow and thus to save the winter moisture for the spring growth of the grain. This practice is open to the objection that it encourages the occupation of such ground by the species of locusts that are most troublesome in the grain the succeeding spring. The varied growth upon stubble land, especially the coarser annual grasses and succulent weeds, is the favorite food of several species of the larger grasshoppers that, native over the plains in the ranker vegetation of the draws and the slopes near water courses, are quick to improve upon the opportunities offered them in broken ground. Attracted in great numbers by this after-growth, these locusts occupy such grounds after harvest until the end of the season, meanwhile finding the conditions suitable for the deposit of eggs, which are accordingly laid in great numbers. If the seeding be done without turning the ground over thoroughly, many or perhaps most of the eggs are left to hatch in the spring, and the young hoppers, thriving on the early growth of the wheat, do not need to seek food elsewhere. When the grain is heading the insects are nearly or quite grown, many of them winged, and are now very destructive in their attacks upon the heads, cutting them off and sometimes destroying the crop before it can be harvested. When the grain is being cut they often fly in a cloud before the header and are gathered in the header-box sometimes by the bushel. It is scarcely to be allowed that these insects would be found in such abundance were their numbers restricted to those individuals that might gather upon the grain from the uncultivated lands alongside. The presence of such swarms of them and their equal abundance in all parts of large fields, making allowance for the ability of the young to travel some distance when forced by hunger, must result chiefly from their having hatched on the ground infested, and for this the after-treatment of the wheat ground is an explanation.

Without entering upon the discussion of the relative economy of the suggested method as compared with the usual practice it may be stated that such cultural treatment of wheat land after harvest as will destroy the locusts that infest it, or at least disperse them and prevent egg laying therein, will bring partial relief from the troublesome pest. Their destruction or dispersion may be accomplished by burning over the stubble, where practicable, at once. The immature individuals and many of the winged ones will thus be killed. The after-growth of attractive herbage may be prevented by ways that will suggest themselves to the farmer.

The destruction of the young in spring may sometimes be undertaken with profit, where these have hatched in numbers upon or near the wheat fields. They may be crushed in great

numbers by the use of a heavy roller where they are massed in limited areas, or where they are working in on the margins of the field. This practice is also of use in packing the soil upon the eggs yet to hatch (as all are not hatched at once), so that the late young are prevented from emerging from the soil.

Sometimes it is possible to do more effective work by gathering and destroying the locusts themselves by implement which we may call a "hopper-catcher." This may have various forms, but all are essentially reducible to the same general structure. A broad pan, apron or platform, mounted on low runners or wheels, the front edge lying close to the ground, is drawn by man or horse-power over the infested tract. The insects, driven up by the approach of the front, jump or fly upon it and are collected or destroyed by other contrivances. Where a pan is used it should contain a little coal oil, just enough to wet the insect jumping into the pan. Where a platform or apron forms the catcher, a hood or wings of cloth should be provided, by which the insects are led back into pouches where they remain until removed and destroyed. Such a hopper-catcher will be of great service in catching and destroying either young or old, but where operated to catch the winged forms, advantage should be taken of the times of their lessened activity, as at evening and morning, or in cloudy weather, that they may not fly entirely over or away from the catcher.

October 15, 1896.

Henry Clews' circular of last Saturday, says: "In the meantime, the course of our foreign trade relations is in the highest degree encouraging. Sterling exchange is at 4.82 for sixty-day bills, and the Bank of England apparently deems it hopeless to check the consequent outflow of gold to this country by advancing its rate of interest. Export orders for our food products are greater than we can provide freight room for from now up to next March. The estimated deficiency of 100,000,000 bushels in the world's wheat crop will have to be supplied largely from this country, and the consequent rapid advance in the price of wheat is causing an extraordinary demand for our Indian corn—a demand which is likely to be hereafter continued when it has thus been extensively used by European consumers. Europe is saying to us, 'we will take all the food supplies you can send us, but while your money basis is in doubt, we don't want anything you print.'"

## HOW DO YOU MAKE FARMING PAY?

The KANSAS FARMER desires papers on this subject from practical farmers in every county in Kansas, and, in order to secure the best, makes the following offer: For the best paper from each county we will give one year's subscription to the KANSAS FARMER; for the second best, six months' subscription. In this way two persons in each county can get the FARMER free.

The papers are not to be longer than 1,000 words each. It is desired to hear from the successful farmers, but mere brag has no merit and is not desired.

This offer is open for all papers received at this office before Christmas.

## 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.

Remember that you can get the KANSAS FARMER and the Kansas City Daily Star, both for one year, for \$4, or the KANSAS FARMER and the Kansas City Weekly Star, both for one year, for \$1.20.



## AND SOME OTHER THINGS.

By Secretary Coburn, before Kansas Irrigation Association, 1896.

Mr. President and ladies and gentlemen of the Kansas Irrigation Congress: our speaker is not an irrigator. He perhaps rightly to be regarded as nique in such a gathering of real irrigators, from the fact of never having irrigated so much as a rod square of 11 the millions of arid or semi-arid cres lying between the Missouri river and the Gulf of California. Perhaps this is this that eminently qualifies him to tell you in ample detail where and when and how the fair face of this fertile domain is to be kissed by that moisture which shall awaken into a new life beaming with the smiles of prosperity, shedding joy and gladness on all her people; we shall thenceforth be fed, not with husks but with corn and wine and honey. What he may say, however, will be merely from the standpoint of an observer, a long-time citizen, and he hopes of a patriot.

Surely, Kansas has reason to expect much from irrigation. We are, at most, scarcely on the threshold of its possibilities and seeing but faintly in the vista of the future those opportunities which the touch of brains, with water and work and sunshine shall yet convert into beneficent realities. These will not all be brought about in a day, nor a decade, but keeping alive the idea through these meetings of its friends and the work of an efficient and properly sustained irrigation board will do much to hasten their consummation.

Persuaded of these things, I am not, however, disposed to regard irrigation even in its best estate as by any means the one thing upon which western Kansas depends for agricultural salvation. While important, it can be but a factor, an adjunct. The mere fact of developing or using a water supply does not mean prosperity, unless the many and varied other resources within reach are seized upon and made to contribute their just proportion to the general result. Progress in the direction of irrigation development must be slow because many of our people who most need it are so situated, financially, through various misfortunes and crop failures, that the needed equipment if secured at all is obtained under many disadvantages, and for this reason is too often likely to be of a character poorly suited to the work expected, and its use instead of bringing profit and pleasure may end in disaster and discouragement. It can at best be developed but gradually, for in this, as in all like enterprises, the better success only comes with time and experience.

While we learn the ways and gain the experience essential to any considerable success we must make the most of those advantages we already have and of such products as are usually reliable here with the ordinary rainfall, independent of wells, windmills or ditches. Among these possibilities it seems to me the products of the cow should occupy a foremost place. All this region produces, or will produce, nearly every year, unlimited quantities and a varied assortment of those foods from which milk is made to great advantage, and its products well handled are always cash articles, both east and west. In some other States, perhaps not so favorably situated, herds of cows are so bred and managed as to annually yield their owners from \$40 to \$85 and more per head, in milk or butter alone, and I have this season seen two cows that within one year furnished milk which, not retailed to consumers, but sold to factories at the present low factory prices, brought \$123 and \$119, respectively. If this can be done in Iowa and Minnesota, with their long and cold winters, it can be done in Kansas, with her shorter, milder winters, and cheaper lands. Admitting that any near approach to this is true, the statistics furnished by our sworn assessors showing that the average annual product of the Kansas milch cows has for the past ten years ranged from \$6.07 to a maximum of but \$9.65, indicates that we are not as appreciative as a hard-up people ought to be of the possibilities wrapped up in the skin of a good cow and the every-year growths on these prairies.

Most of us have cows—some more, some less—but few of us get from them a half or a fourth the product we ought, nor do we get for that product, in plug-tobacco, saleratus and coal oil, half what it could be sold for, in cash, if we handled it by the best methods common among some of our wiser and not distant neighbors.

In other countries, where land is valued at from fifty to one hundred times more than we value ours, and where it takes twice or thrice the expenditure to raise feed, sheep are reared in large numbers and found a sure thing as profit-makers, but in Kansas, the wool-grower's paradise if there ever was one, we have to-day but about one sheep to every seven inhabitants. Prices of wool are miserably low at this time, but they have never been so low nor have the crop failures or the lack of rainfall ever been so great that wool and mutton could not be produced on any of these prairies at a profit. We talk of hard times, and when we say times are hard we tell no lie; but let us see for a moment if we as individuals and as communities are doing business on business principles. Take as an example, this imperial domain which, with its 900 square miles of fertile valley and smiling plain, constitute the county of Barton, whose guests we are, and note the situation. A quarter million sheep could be maintained here on feed that would never be missed; the assessors could find in March but fifty-six; the same assessors at the same time found 2,304 dogs. In other words, for each sheep, emblem of innocence, gentleness and thrift, tolerated here, there were sheltered and fed out of hand more than forty-one flea-harboring, ever-hungry dogs to make it wish itself dead. In the adjoining counties of Rush and Stafford there were two dogs to one sheep; in Rice five to one; in Jewell eighty-five to one; in Kiowa 115 to one; in Lincoln 151 to one; in Phillips 229 to one; in Osborne county there were five sheep and 1,986 dogs, or slightly less than 400 dogs to each sheep. In four of the best counties in the State there were a total of twenty-eight sheep and 6,058 dogs—and yet we complain that times are hard and farming doesn't pay, expecting the meanwhile that prosperity will come to us ready-made from Washington, if we only elect this or that smooth-tongued candidate to office; a sort of prosperity, too, that one or the other half of our voters are ready to swear means little short of revolution and ruin.

Poultry is another possible Kansas product not sufficiently taken into account, but worthy the attention of thousands who ignore it as being of too small consequence for a man to be bothered with; and yet, on many a farm, although burdened with a multitude of other cares, the good wife by her flock of hens procures more that goes to make the comforts of a home than does her liege lord who farms a quarter section and understands finance. Four Kansas women out of five if unhampered and given the opportunity to carry out their ideas would support their families in reasonable comfort from their flocks of fowls and would raise on one or two acres of land all the grain necessary for the purpose.

Mentioning these resources we already possess does not argue against beginning irrigation, nor does it suggest making any of these the sole reliance. They are, however, important elements of that prosperity we so much covet and pertain to that diversity which the wise man who would thrive will more and more need to recognize.

As helpful to promoting the cause of irrigation, I hope the State board will be continued and given such ample means as will make its work most thorough and effective. None are so poor as to need complain of its expense when such a department is maintained for two years at a total expense of probably less than 24 cents to each inhabitant, and no producer in this agricultural State can rightly begrudge the penny each per annum, that it costs our population to support a department of agriculture for his benefit.

Kansas is all right. We have much to learn, in my judgment, and our hope lies in the fact that we are very industriously learning it. When the time arrives in which we rightly grasp and make the most of those opportunities that Providence has fairly thrust in our way, then shall

These sultry sands a ten-fold harvest yield  
And a new Eden deck each thorny field.

## Hog Cholera and Swine Plague.

The following remedy is recommended by the Bureau of Animal Industry at Washington:

	Pounds.
Wood charcoal.....	1
Sulphur.....	1
Sodium chloride.....	2
Sodium bicarbonate.....	2
Sodium hyposulphite.....	2
Sodium sulphate.....	1
Antimony sulphide (black antimony).....	1

These ingredients should be completely pulverized and thoroughly mixed.

The dose of this mixture is a large tablespoonful for each 200 pounds weight of hogs to be treated, and it should be given only once a day. When hogs are affected with these diseases they should not be fed on corn alone, but they should have at least once a day soft feed, made by mixing bran and middlings, or middlings and corn meal, or ground oats and corn, or crushed wheat with hot water, and then stirring into this the proper quantity of the medicine. Hogs are fond of this mixture; it increases their appetite, and when they once taste of food with which it has been mixed they will eat it though nothing else would tempt them.

Animals that are very sick and that will not come to the feed should be drenched with the medicine shaken up with water. Great care should be exercised in drenching hogs or they will be suffocated. Do not turn the hog on its back to drench it, but pull the cheek away from the teeth, so as to form a pouch, into which the medicine may be slowly poured. It will flow from the cheek into the mouth, and when the hog finds out what it is, it will stop squealing and swallow. In our experiments hogs which were so sick that they would eat nothing have commenced to eat very soon after getting a dose of the remedy, and have steadily improved until they appeared perfectly well.

This medicine may also be used as a preventive of these diseases, and for this purpose should be put in the feed of the whole herd. Care should of course be taken to see that each animal receives its proper share. In cases where it has been given a fair trial, it has apparently cured most of the animals which were sick and has stopped the progress of the disease in the herds. It also appears to be an excellent appetizer and stimulant of the processes of digestion and assimilation, and when given to unthrifty hogs it increases the appetite, causes them to take on flesh, and assume a thrifty appearance.

## A View of Irrigators.

During the Kansas Irrigation Congress at Great Bend, last week, F. W. Litchfield, manager of the Wichita View Co., made a very fine photograph of the Congress, which he will mail to any one interested for only 50 cents.

KANSAS FARMER and *Agricultural Epitomist* to January 1, 1898, for \$1.25. Subscribe now.

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

The *New York Journal*, which claims to be the only New York daily for the Democratic national ticket, offers a rate which enables us to furnish the KANSAS FARMER one year and the *New York Sunday Journal* three months, both for \$1.25.

To Chicago, St. Louis and the East via Burlington Route.

The traveling public is sure to find the best fast vestibuled trains to the East via the Burlington Route.

Handsome new compartment sleepers (same rate as standard sleepers), chair cars (seats free), Kansas City and St. Joseph to St. Louis; standard sleepers, chair cars and dining cars—"pay for what you order"—to Chicago. Take the "Vestibuled Elit" to Chicago and the "Vestibuled Limited" to St. Louis.

Ask agent for tickets via the Burlington Route.

L. W. WAKELBY, Gen. Pass. Agt., St. Louis, Mo.

## Gossip About Stook.

J. T. Lawton, of North Topeka, Kas., breeder of Chester White swine, made the FARMER office a pleasant call and reports that he is having splendid sales at the present time.

A very desirable public sale of the right sort of Poland-China swine will be held on November 12, 1896, by J. H. Taylor, Pearl, Dickinson county, who will offer fifty head. Mr. Taylor is a first-class breeder and will surely have a good sale.

The public sale of forty choice Poland-China swine from the Franklin County herd of J. N. Kirkpatrick, to be held at Ottawa, Kas., November 10, 1896, should attract a large attendance, as the offering is quite desirable. Riley Medium 12306 heads the herd; his sire, All There; dam, Corwin Tecumseh and she by Old Tecumseh Jr. Send for catalogue.

Our readers interested in pedigreed Poland-China swine should keep in mind the public sale that will be held next Tuesday, at Princeton, Franklin county, Kansas, when H. Davison & Son will offer fifty-five head, consisting of aged boars, bred aged sows and gilts and an extra fine lot of spring pigs of both sexes. The blood lines of the offerings contain the blood of Business 11687 S., Riley Medium 12306 S., Upright Wilkes 13246 S., Princeton Chief 14545 S., Chief Tecumseh 2d 9115 S., Dictator 2d 14065 S. The visitor at the farm finds the herd in excellent condition, and Col. S. A. Sawyer, who will do the honors of the sale block, expects to make a very successful sale if good things are wanted by the swine breeding public.

In referring to a forthcoming Kansas public sale of swine, the *Breeder's Gazette* says: "Among the Western public sales of pedigreed swine one that demands especial attention from discriminating buyers is that which will be held at Richmond, Kas., on Friday, October 30, by J. R. Killough & Sons. It is not often that three such herd boars are included in one offering as Upright Wilkes, J. H. Sanders Jr. and Medium Pride. The first-named has made such a record in the breeding pen that his owners feel justified in calling him one of the greatest breeding boars in the country. Four yearling boars are included and twenty brood sows of desirable blood lines. In addition there will be a lot of good gilts and boars of spring farrow—a very attractive offering on the whole for those who want to stock up with real good material."

Silver Chief is the name of the fine eleven-months boar owned by Dietrich & Spaulding, Richmond, Kas., upon which they won first in class and sweepstakes at both Ottawa and Paola fairs, with strong competition, among which were several prize-winners. This fellow is an illustration of what blood, combined with individual merit, will do in the breeding ring. His sire, Ideal Black U. S., won first and sweepstakes at Iowa State fair in 1894, and then sold for \$1,000. Sunshine by Chief Tecumseh 2d, his dam, won first and sweepstakes at Iowa State fair in 1895. Silver Chief has great depth of body, on good legs and feet, fine coat, nicely marked, good head and jaw and small ear, short neck, even back, with well-sprung rib and heavy hams, and as a whole is very even and stylish. He will be bred in Highland herd largely this fall. Watch him.

OF VALUE TO HORSEMEN.—Do you turn your horses out for the winter? If so, we want to call your attention to a very important matter. Horses which have been used steadily at work, either on the farm or road, have quite likely had some strains whereby lameness or enlargements have been caused. Or perhaps new life is needed to be infused into their legs. Gombault's Caustic Balsam applied as per directions, just as you are turning the horse out, will be of great benefit; and this is the time when it can be used very successfully. One great advantage in using this remedy is that after it is applied it needs no care or attention, but does its work well and at a time when the horse is having a rest. Of course it can be used with equal success while horses are in the stable, but many people in turning their horses out would use Caustic Balsam if they were reminded of it, and this article is given as a reminder.

## Publishers' Paragraphs.

Funk & Wagnalls Co., New York, have just received a single order from one firm for 100,000 copies of their celebrated Standard Dictionary of the English Language, amounting at retail to nearly one and a quarter millions of dollars. This is the largest single sale of so large a work ever made in America. Previous to this one large transaction over 100,000 copies had been issued, and the company is still receiving many large orders from its subscription agents throughout the world.

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

## Horticulture.

### The Propagation of Plants for the House and Garden.

By Wm. Baxter, manager of greenhouses at Kansas State Agricultural college, read before Manhattan Horticultural Society.

Artificial or vegetative means of propagation are resorted to by cultivators in order to reproduce and multiply existing cultivated forms of useful or ornamental vegetation in the shortest possible time, while in the case of cross-breeding or hybridizing provision is made for the origination of new forms or varieties instead of merely reproducing the parent plant. There are many cases in which seed will not reproduce the parent plant, even if one is ever so careful to prevent fertilization; and then recourse must be had either to cuttings, layers, or divisions by which part of the original plant must necessarily be used, and means are resorted to in order to make them throw out roots. Grafts are cuttings neatly joined to a suitable stock by which they receive the benefit of the roots already formed and in working order; but it is well known that grafts are frequently changed if worked on other variety as a stock, so it is not so reliable as cuttings.

#### PROPAGATION BY LAYERS.

This simple method of propagation is generally adopted in the case of low-growing or slender plants, which cannot readily be grown by cuttings, divisions or seeds. The operation is very simple. A branch or stem of a plant is taken and bent down to the ground and covered with soil; and it is best to put a flat stone on top of the soil to prevent the wind from blowing it off or drying it up. The top of the twig or branch is bent up and allowed to grow. In plants that are hard to root it is well to cut a slit on the under side of the twig, holding the top in your left hand and cutting toward you. The cutting of the branch causes the sap of the plant to exude and form a spongy mass which we call callus, and from this callus the roots are almost sure to start.

There is another mode similar to layering, which is sometimes called propagating in the air. The plant which it is desired to root is cut in a similar manner and a bunch of sphagnum moss packed around it, and when rooted the moss is cut off with the plant roots and potted.

#### PROPAGATION BY DIVISION.

This is the easiest and most generally adopted method by which low-growing or spreading alpine and herbaceous plants are reproduced. Bulbs, as snowdrops, narcissus, and other gregarious kinds, are also multiplied in the same way. Each separate bulb is a distinct individual plant, although the word multiplied, as used, is scarcely applicable, since no artificial multiplication of plants has taken place. The same number of plants existed in the clump before they were divided. Only by so dividing them they develop themselves more rapidly. Nearly all plants which form low-spreading clumps or masses of root stalks may be divided, either by digging up the plant and pulling it into rooted pieces or by cutting of rooted sections around the sides of the clump. The scaly bulbs of lilies may be pulled apart and planted separately, and most of them when so treated will form separate plants.

There is a class of plants which has thick leaves, called melastomaceous plants, which can be propagated by the leaf; for example, the Rex begonia, and many others that have thick leaves.

Such tender plants as bouvardias, phyllanthus, clerodendrons, aralias, etc., may be reproduced by root cuttings, as may also certain hardy shrubs, and many kinds of roses.

In many cases, the first work of Ayer's Sarsaparilla is to expel the effects of the other medicines that have been tried in vain. It would be a saving of time and money if experimenters took Ayer's Sarsaparilla at first instead of at last.

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

### Two Questions.

EDITOR KANSAS FARMER:—I want to ask two questions of KANSAS FARMER readers, which, if properly answered, may make me \$100. I have a twelve-acre field of red Kaffir corn which was planted to Early Amber cane last year, and a few stalks of cane have grown up in this field and have so mixed with the Kaffir corn. The stalk is very sweet cane with a perfect Kaffir corn head. Has anyone had any experience in planting this kind of mixed seed, and what would be the result of planting this kind of mixed cane and Kaffir corn?

Second, I have a forty-acre pasture of high prairie, black loam land, set in blue grass and prairie grass. This pasture joins the barnyard and is very handy to turn into, but does not furnish half enough pasture for my horses and cows. Now, will any reader of KANSAS FARMER tell me how I can double the capacity of this pasture? I can get an unlimited amount of stable manure by hauling it from the little town, one mile away, or would subsoiling or irrigation do the work? I believe it can be done. I have read somewhere that "He who makes two spears of grass grow where only one grew before is a public benefactor." I believe that if a spear of grass could be made to grow in place of every weed now growing in Kansas, the State would be worth thousands of dollars more than it is. Don't be backward, brother farmers, in imparting your knowledge and experience. We need all the help we can get these hard times.

F. M. WIERMAN.

Wilsey, Morris Co., Kas.

Kaffir corn is a non-saccharine sorghum and hybridizes very readily with sweet sorghum. The result of growing these similar "grasses" in close proximity is usually such as is described by our correspondent. If, however, he shall select a single seed head of a plant showing evidence of crossing, and plant the seeds from this head in a plot entirely separate from other sorghum or Kaffir corn, and, indeed, take every possible precaution to perpetuate the sweet Kaffir corn, which he has now produced, he will probably be surprised at the result next season. In similar experiments, heretofore conducted by Mr. A. A. Denton for the United States Department of Agriculture, with crosses of different varieties of sorghum, it was found that a single head of "crossed" cane produced in almost every case two distinct varieties, a variety resembling each parent, and in some cases several other varieties. Once, when the writer visited Mr. Denton's experimental plantation at the time of seed-gathering, he had just selected six distinct variations, the product of a single "crossed" seed head.

Plants grown from these varieties manifest strong tendencies to revert to the original parent forms. It is possible, however, in some cases to secure improved plants, combining characteristics of both parents, by crossing and by subsequent careful selection of seed and planting in isolated plots. The third or fourth generation of plants thus produced sometimes manifest considerable persistence of characteristics. After the third or fourth generation of what may be called "in-and-in breeding," the type of the new plant, if indeed total reversion has not already occurred, becomes rapidly and firmly established.

It will be seen that there are chances of making great improvement by "crossing" plants, but that much care and patient attention are required. It should also be remarked that if out of 100 trials the experimenter secures one new type that is a real improvement, while others are all less desirable, or at most not more desirable than those with which he starts, he does well. The field is an attractive one; it is alluring in its promises; it is full of disappointments, and it may yield results of great value to the farming world.

As to improving the prairie pasture, our correspondent suggests irrigation. If he is so situated that he can irrigate the pasture without too great expense, he scarcely needs to ask for a better method. Prairie grass responds ad-



mirably to irrigation. It has also been suggested to sow mixed grasses among the prairie grass. With judicious irrigation such a mixed pasture should afford more than double the feed of an ordinary prairie pasture in its natural state.

It is hoped that the several suggestions of our correspondent will call out the experience of many farmers on these important matters.

RHEUMATISM IS A FOE which gives no quarter. It torments its victims day and night. Hood's Sarsaparilla purifies the blood and cures the aches and pains of rheumatism.

HOOD'S PILLS are the best family cathartic and liver medicine. Gentle, reliable, sure.

#### 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 homeseekers.

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.

#### Meals on the "Order" Plan

are now served in the dining cars run by the Great Rock Island Route between Kansas City and Chicago. This change has been made to suit the convenience of the traveling public, and with the belief that such an arrangement will better please our patrons.

All meals will be served a la carte, and at reasonable prices.

While the system of serving meals has been changed, the traveler may still rely upon the excellence of cuisine and perfection of service that have earned for the Rock Island the reputation of maintaining the best dining car service in the world.

JOHN SEBASTIAN, G. P. & T. A., Chicago, Ill.

KANSAS HOME NURSERY now offers choice berries and orchard fruits of all kinds in their season. Fresh shipments daily by express. Prices to applicants. A. H. GRISEA, Box J, Lawrence, Kas.

2,000,000 Strawberry Plants and plenty of all other kinds of small fruits. The William Belt, Brandywine, Paris King, Tennessee, Isabel, B'sell, Splendid, all new strawberries. Egyptian, Bishop, Brandywine, Miller and Columbian, all new raspberries. B. F. SMITH, Box 6, Lawrence, Kas.

#### Carnahan's Tree Wash and Insect Destroyer

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

## Plant Trees and Orchards in 1896



The old reliable Hart Pioneer Nurseries, of Fort Scott, Kas., have large supplies of choice stock for sale at special prices. 600 acres in nursery, 240 acres in orchard. Extensive growers for the wholesale trade. Write and obtain prices before placing your orders elsewhere. No transfer or exposure of stock. We take up, pack and ship from the same grounds. Send for our

Illustrated Planter's Catalogue and Price List.

We solicit your correspondence and invite inspection of our stock.

Reliable Salesmen Wanted.

ADDRESS

**HART PIONEER NURSERIES,**

FORT SCOTT, KANSAS.

Early Ohio Grape, Six Weeks Earlier Than Concord.

# In the Dairy.

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

## TENTH ANNUAL SESSION KANSAS STATE DAIRY ASSOCIATION.

The tenth annual meeting of the Kansas State Dairy Association will be held in the opera house at Abilene, Kas., on Wednesday, Thursday and Friday, November 18, 19 and 20, 1896.

You are earnestly requested to be present, with as many of your friends as you can prevail upon to attend. Come and join in the discussions of the greatest interests in the greatest State of the greatest nation on earth.

The dairy has stood by you better than any other branch of husbandry, and with an interchange of ideas, a persistent demand for laws to protect dairy products, and a daily application of perseverance and better methods, it can be made to yield double the profits now realized.

Abilene is the county seat of Dickinson county, the banner dairy county in the State. Every one ought to go and learn why dairymen are more successful here than elsewhere. Look over the program and see the various subjects that ought to interest every milk-producer in the State.

Besides the regular program, arrangements have been made to have present Prof. T. L. Haecker, of the Minnesota Experiment Station, who, with Profs. McKay and Curtis, of the Iowa Dairy school, and C. C. Georgeson, of our own experiment station, and Hon. F. D. Coburn, Secretary State Board of Agriculture, are prepared to expound dairy information in a manner rarely met with. Arrangements have also been made to have several practical lectures during the session. There will be an abundance of music and other entertainment furnished. Headquarters will be at Pacific hotel.

### PROGRAM.

- WEDNESDAY, NOVEMBER 18.
- MORNING SESSION.
- 1. Invocation, M. L. Hoffman, Abilene.
- 2. Address of welcome, J. R. Burton, Abilene.
- 3. Response, J. L. Fuller, Atchison.
- 4. Report of Secretary and Treasurer.
- 5. President's annual address.
- AFTERNOON SESSION.
- 6. "Is Artificial Refrigeration Practical in the Average Creamery?" C. O. Musser, Abilene.
- 7. "Is the Skimming Station a Success?" J. K. Forney, Abilene.
- 8. "Can Kansas Compete Successfully With Other States in the Manufacture of Cheese?" Frank Trauger, Woodbine.
- 9. "Mottles in Butter," F. S. Hurd, Meriden.
- 10. "Cost of Producing a Pound of Butter," Prof. T. L. Haecker.
- 11. "Have We Derived Any Benefit from Butter Cultures?" E. C. Lewellen, Newton.
- THURSDAY, NOVEMBER 19.
- MORNING SESSION.
- 12. "Comparative Profits of Milk Production With Other Agricultural Products," E. O. Adee, Minneapolis.
- 13. "Lecture on Butter-Making in General," Prof. G. L. McKay.
- 14. "Dairying for Profit," Geo. Morgan, Oak Hill.
- 15. "Condition of Milk Delivered at the Creamery," D. S. Brandt, Newton.
- AFTERNOON SESSION.
- 16. "What is the Most Practical Breed of Cows for the Creamery Patrons?" Prof. Curtis, Ames.
- 17. "Let Us Get Better Acquainted With the Cow," F. D. Coburn, Topeka.
- 18. "To What Extent Can Butter Fat Be Influenced by Feeding?" Prof. Haecker, Minneapolis.
- EVENING SESSION.
- 19. "Looking Backward," J. E. Nissley, Kansas City.
- 20. "Looking Forward," J. H. Monrad, Chicago.
- 21. "The Work of Our Agricultural College," C. C. Georgeson.
- FRIDAY, NOVEMBER 20.
- MORNING SESSION.
- 22. Election of officers.
- 23. Reports of committees.
- 24. Miscellaneous.
- 25. "The Duty of a Foreman in the Creamery," T. M. Erb, Harper.
- 26. "Does it Pay to Sterilize Skim-milk?" W. F. Jansen, Beloit.
- AFTERNOON SESSION.
- 27. "Preparation of Butter for the Market," T. C. Matthews.
- 28. "Equity of the Test System," G. E. Burnam, Minneapolis.
- 29. "Scientific Butter-Making," W. G. Merritt.
- 30. "Big Little Things," J. L. Fuller.
- SPECIAL PREMIUMS.
- The Creamery Package Manufacturing Co., Kansas City, Mo.—To promote the interests of our regular customers, on butter tubs especially, we deem it best to offer our pre-

miums this year to our own customers only. With this in view, we will give our regular customer on butter tubs who scores the highest number of points on his butter at the Kansas State Dairy convention of 1896, two hundred and fifty (250) sixty-pound tubs, valued at \$62.50; to the butter-maker scoring highest, cash, \$12. To creamery scoring second highest, one hundred and fifty (150) sixty-pound tubs, valued at \$37.50; to the butter-maker, cash, \$8. To creamery scoring third highest, one hundred (100) sixty-pound tubs, valued at \$25; to the butter-maker, cash, \$5. Total, \$150.

**The Worcester Salt Co., New York.**—To the creamery scoring highest on separator butter salted with Worcester salt, a handsome gold watch valued at \$25. To the creamery scoring second highest on separator butter salted with Worcester salt, a handsome gold watch valued at \$15. To the creamery scoring highest on gathered cream butter salted with Worcester salt, a handsome gold watch valued at \$25. To the winner of sweepstakes, provided the butter is salted with Worcester salt, cash, \$15. Total, \$80.

**Wells, Richardson & Co., Burlington, Vt.**—Will give a handsome gold medal to the butter-maker scoring highest over all, value \$50. To the butter-maker scoring second highest, cash, \$10. To the maker of dairy butter scoring highest, \$5; second highest, one can of butter color, valued at \$1. Total, \$71.

**Vermont Farm Machine Co.**—To the creamery scoring highest, provided the butter is made from cream separated by the U. S. cream separator, goods to the amount of \$50.

**C. E. Hill & Co., Kansas City, Mo.**—To the creamery receiving first prize, if butter is packed in our tubs, 100 sixty-pound ash tubs, valued at \$25, or their value in other supplies. To the creamery scoring second, if butter is packed in our tubs or boxes, 100 fifty-four-pound boxes, valued at \$15. Total, \$40.

**Genesee Salt Co., Chicago, Ill.**—Will give in cash, to the tub of butter scoring highest, provided the same is salted with Genesee salt, \$25.

**John H. Holstein, New York.**—Will give to the creamery scoring highest, in cash, \$15; creamery scoring second highest, \$10. Total, \$25. Provided, that every one competing for these premiums consign one or more sixty-pound tubs to Mr. Holstein, after the convention.

**Hutchinson Packing Co., Hutchinson, Kas.**—Will offer as follows: Twenty dollars in either gold or silver to the butter-maker scoring the highest number of points. Provided, his butter is salted with "Perfection" butter salt. Ten dollars in either gold or silver to butter-maker scoring second highest number of points with butter salted with "Perfection" butter salt. Fifteen 224-pound sacks "Perfection" butter salt to the creamery scoring the highest number of points with butter salted with "Perfection" butter salt; ten sacks to the second, and five sacks to the third. Ten 224-pound sacks "Perfection" butter salt to the creamery scoring the highest number of points with butter salted with "Perfection" butter salt; seven sacks to the second, and five sacks to the third.

**Francis D. Moulton & Co., New York.**—For the best tub of butter salted with Ashton salt, five large sacks Ashton salt, valued at \$15.

**The De Laval Separator Co., Elgin, Ill.**—To the butter-maker who scores the highest score on butter, made exclusively from cream separated by the De Laval machines, cash premium of \$15. This offer to be good whether butter is made in the dairy or creamery.

**The Standard Oil Co., Kansas City, Mo.**—To the creamery scoring highest, twenty gallons "A" separator oil, valued at \$8.40. To the creamery scoring second highest, fifteen gallons "A" separator oil, valued at \$4.80. To the creamery scoring third, ten gallons "A" separator oil, valued at \$3.80. Total, \$15.

**Kansas State Dairy Association.**—Will give to party scoring highest on cheese, cash, \$5. To party scoring second highest on cheese, cash, \$2.50. Total \$7.50.

Competition open to Kansans only and accompanied by a membership fee of \$1.

### RULES AND INSTRUCTIONS TO BE OBSERVED.

1. All butter and cheese for exhibition must be expressed, and be prepaid. Each package must be plainly marked as follows: "From — to J. K. Forney, Assistant Secretary, Abilene, Kas."
2. Full instructions should accompany each package, as to disposition. After the awards have been made exhibitor can dispose of his butter. In case no instructions have been given, the Secretary will take the liberty of disposing of such butter and will remit upon receipt of returns.
3. Entries positively close at 9 a. m., November 19. Entries for stations may be entered by second butter-maker, superintendent, manager, or in company's name, one entry for each station.
4. No one allowed to exhibit who has not paid an annual membership fee of \$1.
5. Ample room will be given for exhibits, and all exhibitors are requested to send a fair sample of butter as made at the factory. Butter made from special selected milk forfeits all claims to premiums. Apply for entry cards.

## THE HIDDEN FLAW.

What Some Women Would See if a Friend Pictured Them.

Beauty Slowly Undermined.

When northern explorers look upon an iceberg lifting its glittering peak high above the sea upon which it floats, to all appearances it is as stable as a rock-ribbed mountain. But it is two-thirds submerged, and down in the depths, warmer than the air, the Gulf stream is at work upon its base. Suddenly, undermined by the tepid currents, it topples over and sinks into the sea.

It is often so with health when disintegrating influences are at work upon the foundations of the physical structure. This is especially true of women. We see them in the charac-



ter, of hostess or at some social function. In public, their eyes shine, their complexion is apparently faultless, and they are noted for their amiability and wit. There are many such women who are even successful in deceiving themselves. They will not admit even to themselves that their beauty is being slowly undermined by ill-health. It would be a blessing to such women if friends would paint for them portraits of their real selves when robbed of the glamour of the lights and the transient glow of excitement.

Thousands of women who are credited even by their most intimate acquaintances with the most robust health, are silently undergoing untold agonies as a result of their neglect of the health of the distinctly womanly organism. Admired in public for their beauty and amiability, they know in their hearts that an unseen malady is gnawing at their vitals, torturing their nerves and tempers, undermining their beauty and even threatening to overtopple their reason. They resemble the glittering and impressive iceberg, that unknown to the admiring spectator is tottering to a fall.

The woman, no matter how beautiful and amiable, who neglects to care for her health in a womanly way, and who is suffering from weakness and disease of the organs distinctly feminine, is threatened with a living death, and probably death itself. Troubles of this nature undermine a woman's system quicker than anything else. Her whole system is soon tortured with aches and pains. Her beauty fades, and her face soon tells the story of the silent agony she endures. Her tortured nerves are soon completely shattered and the once amiable disposition is soured and she becomes fretful and fault-finding. The once witty brain can only dwell upon the pains that she suffers and the once charming companion becomes a bore to herself and her friends. She soon relapses into a condition of invalidism that is apparently helpless. Wedded life is a torture to her, and prospective motherhood a menace of death, or at least of intolerable suffering.

It may be asked why women silently and resignedly suffer in this way if there is release at hand. There are several reasons. The principal one is ignorance. Many women imagine that their sad condition is inherent in all

women. They see so many other women enduring the same suffering that they imagine there is no remedy for their troubles. Still others imagine that relief can only be obtained by undergoing embarrassing "examinations" and "local applications" by a physician and with the natural modesty of sensitive women shrink from the ordeal.

The majority of physicians do not understand and roughly "pooch-pooch" at this shrinking on the part of modestly sensitive women. There is occasionally a physician who has the innate delicacy to comprehend a woman's feelings in the matter. There is one physician who more fully than any other has realized all this and has devoted the best of a lifetime to providing a means of relief for suffering women without outraging their natural modesty. This is Dr. R. V. Pierce, for thirty years chief consulting physician to the Invalids' Hotel and Surgical Hotel, at Buffalo, N. Y. He is an eminent and skillful specialist who has made a special study of the diseases peculiar to women. He has had exceptional opportunities in this branch of medical practice. With the assistance of a staff of eminent specialists he has treated over 250,000 women either personally or by letter.

The result of his lifetime of study and experience is a wonderful medicine now known all over the civilized world as Dr. Pierce's Favorite Prescription. It acts directly on the delicate organs that make motherhood possible. It makes them strong and healthy. It imparts to them tone and elasticity. It cures all weakness and disease. It allays inflammation, heals ulceration and soothes pain. It tones up the pain-shattered nerves and cures nervous excitability, nervous exhaustion, nervous prostration, irritability, neuralgia, hysteria, spasms, chorea, St. Vitus' dance and other distressing nervous symptoms, commonly attendant upon functional or organic diseases of the organs distinctly feminine. It prepares for motherhood. Taken during the period of gestation it banishes the usual discomforts and makes parturition easy and almost painless. It insures the health of baby. It is the best of all known medicines for women and thousands of women have testified to its marvelous merits. Women who wish to know more of it should write personally to Dr. Pierce. All good druggists sell it, and only a dishonest druggist will try to sell you an inferior substitute for the sake of a few extra pennies' profit.

A doctor's visits are the most expensive of luxuries. Sometimes they are absolutely necessary. In case of serious acute illness a physician should always be called in. But in the average home, nine out of ten of the doctor's visits are unnecessary. If the mother or wife in such a home, possessed a good, common sense medical book, it would save the family many dollars in a year. Dr. Pierce's Common Sense Medical Adviser is just such a book. It is written in plain, everyday language, that any one can understand. It contains no technical terms. It contains 1,008 pages and 300 illustrations. Several chapters are devoted to the reproductive physiology of women and the diseases that undermine the constitutions of thousands of silent sufferers. Over 680,000 copies of this work were sold at the original price of \$1.50 each. A new edition is just out and will be given away, absolutely FREE. If you want a paper covered copy send twenty-one 1-cent stamps, to cover cost of mailing only, to the World's Dispensary Medical Association, Buffalo, N. Y. If you prefer a fine French cloth binding, beautifully stamped, send 10 cents extra, 31 cents in all.

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

**Rose Registered Jersey Cattle and Poland-China Swine**

**Creek Farm** are unrivaled. JERSEYS are grandsons of Pedro and Marjoram 2d—won first premium New Jersey State fair, 1894, when a calf. Herd bears fashionably bred and high-class individuals. Head herd bear Rosewood Medium 16453 by Woodburn Medium, he by Happy Medium; dam Fantasy by One Price. Assisted by Tecumseh the Great by Chief Tecumseh 2d; dam Moss Wilkes by Geo. Wilkes. Second assistant Domino 16734 by What's Wanted Jr.; dam Bonnie G. by Gold Coin, he by DOTTES are high scorers. We have the best equipped dairy farm and most complete breeding establishment in northern Kansas. Farm in Republic county, near Nebraska State line. Take U. P. or Rock Island railroad to Belleville, or write. **JOHN F. TOLFORD, Manager, Chester, Neb.**

### The Apiary.

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

#### Bee Houses.

There are many advantages in keeping bees in a house. While there are many apiarists who use bee houses exclusively, the majority do not. There are also many different kinds and varieties of houses used. A bee house need not be an expensive one, and almost any kind of house will answer the purpose. None is better than an old dwelling house, and two or more rooms is the more convenient, providing they have an outside face of one end or side, or both. Perhaps a two-room house with one partition is the best. Such a house with two ordinary sized rooms, say fourteen feet square, will give 112 feet of outside surface; but take off twelve feet for doors, etc., and the 100 feet left will accommodate fifty colonies of bees, by setting the hives two feet apart from center to center, which will give ample working room. The entrances to the hives are cut through to the outside and made to correspond with the entrance to the hives. The hives may be set directly on the floor, but I would prefer them set on the usual bottom-boards, nailed to cleats at each end, that would raise the hive some four inches from the floor. This for the purpose of chaff packing in winter. Bees thus kept in a house are very easily prepared for winter, and the extra protection thus afforded them brings them through the winter in prime order.

A very cheap bee house, and a very convenient one, that I have used and which I make exclusively for bees, is a small house, ten feet long, six feet wide and six feet high. This building accommodates eleven colonies, and the expense does not exceed \$1 per colony. This is no more than chaff hives will cost for each colony outside. Floor space for the hives to rest on only is used, as a ground floor in the center is preferred. The objection to a much longer house, on the same plan, is that it is not convenient to move, and also that bees become more or less confused where so many entrances are close together and all have the same appearance. This has always been the objection to bee houses, but small buildings such as these, located around at different places, overcome this objection.

It has always been the practice in outdoor apiaries to face the hives south or east, and bee houses have been objected to on this account, as the house would necessitate facing all directions. I think there is but little to this except the practice, at least in most localities. It may make some perceptible difference in some of the extreme northern States in certain times of the season, but the damage at other times may offset it. I find no disadvantages to speak of, and many advantages in handling bees in a house. The work is all indoors and out of the sun and rain, and much work can be done in weather that would not permit it on the outside. The whole apiary can be closed in an instant by the turn of a key, and all extracting, and handling of honey, implements, etc., make a bee house a thing of convenience.

#### Forming the Brood Nest for Winter.

This is a very important part of the fall work, and the proper time to do it is early, and before the queens have stopped laying. The brood combs should occupy the center of the hive, and the four or five combs used for the purpose should be empty; that is, the center and lower part of them, but if they have a border of honey at the ends and over the top of two or three inches of sealed honey, all the better; in fact, this is just as they should be, if we can get them. Hives are often so filled with honey that there is not room for brood, and in many cases on account of over richness of the hive the colony becomes weak on account of the limited space of the brood nest, and in winter it is a damage instead of an advantage.

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

#### Steel Power Mills.

The cut here shown is familiar to a large proportion of the farmers and dairymen of the West. This represents the top of the tower and working parts of the eighteen-foot Goodhue power windmill, that has been in use with such universal success for the past eight years. We do not show this because it is new, but because of the wonderful record it has made and its relation to their latest production—the Goodhue steel power mill.



All farmers, especially dairymen, know that one of the most essential parts of their equipment is proper machinery for preparing feed for stock. Campton township, in Kane county, Illinois, is one of the best dairy districts in the State, and we here show a map of this township, which gives the location of twenty-seven Goodhue power windmills, and the names of their owners. The first of these mills was put up nearly nine years ago, and each succeeding year others have been erected, and every one is now in perfect order and practically as good as new. Among them are



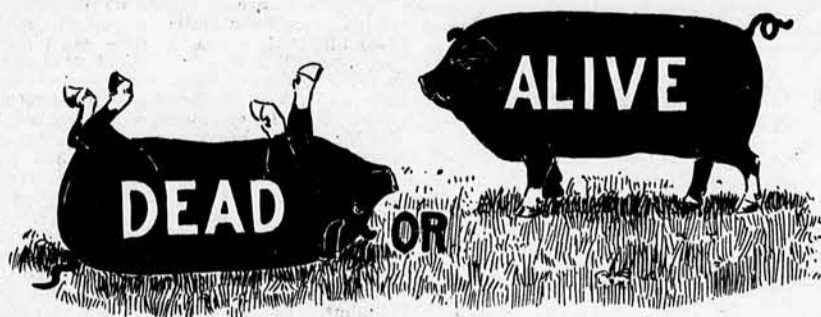
Hon. John Stewart and E. E. Garfield, late President and Treasurer respectively of the Illinois Dairymen's Association.

The cut shows the great strength of the gears and working parts, which accounts for their remarkable durability. These Elgin belt dairies have each from fifty to ninety cows, and a few have a hundred each, and the work required of the power mills in running the various machines is very great, and every mill now being in perfect order and doing regular work speaks highly for their power and durability. The long experience of the manufacturers of these mills has enabled them to make still further progress, which has resulted in the production of the Goodhue thirteen-foot steel power mill. These mills can be erected either on top of buildings or on towers, and operate machines and pumps in almost any location. These mills, as well as a full line of machinery—"Hero" and "American" feed mills, fodder-cutters, corn-huskers, wood saws, etc.—are manufactured by the Appleton Manufacturing Co., Batavia, Ill. Our readers will find it to their advantage to write them for catalogues and further information concerning these mills, especially the new thirteen-foot steel mill, which operates all machines of this class usually driven by horse-power. This company manufactures also the celebrated "Success," "Chief" and "Royal" tread-powers, one, two and three-horse, and a full line of sweep horse-powers, from one to eight-horse.

The corn-husker manufactured by this company is an entirely new invention, the practicability of which is attested by the fact that it has been awarded the highest premium wherever exhibited over all competitors. It is sold at so low a price as to be within the reach of every farmer who desires such a machine for his own use. Those interested should investigate its undoubted merits. Do not forget the manufacturers' address, Appleton Manufacturing Co., Batavia, Ill.

Send \$1.85 to KANSAS FARMER office for one year's subscription to KANSAS FARMER and Chicago Weekly Inter-Ocean.

### HOW DO YOU WANT THEM?



A hog half dead is worth more than the carcass of a dead one. Bannerman's Phenyle will cure hog cholera in all stages. Don't wait until your hogs are on their last legs before you attempt to cure them. Your hogs may be taken sick with cholera next week. Fifty thousand hogs saved last year.

J. WALLACE. WALLACE BROTHERS, O. A. WALLACE.  
BREEDERS OF DUROC-JERSEY SWINE.

LAPORTE CITY, IOWA, September 14, 1896.

BANNERMAN & Co., CHICAGO, ILL.—Dear Sirs: Enclosed find draft for \$6.50, for which send me 100 pounds Bannerman's Phenyle.

You will perhaps receive an order from A. W. Montgomery, of Belle Plaine, as I sent him your address yesterday. There is quite a good deal of Hog Cholera in this vicinity, but our herd has been all right so far, and I attribute it to Phenyle keeping them so.

When we ordered the barrel of you last year, our Chickens and Turkeys were dying like flies, and it checked the disease at once, and we have not lost any since. Respectfully, WALLACE BROS.

P. S.—Please ship at once.

Breeders' price, 200-pound barrels, \$12; 100-pound barrels, \$6.50; 50 pounds, \$4. For information and directions, address

THE ANGLO-AMERICAN STOCK FOOD CO.,  
(Mention KANSAS FARMER.) 113 Adams Street, Chicago, Ill.

### ONE DOLLAR

For this Set of Lasts and Stand.

### TOPEKA FOUNDRY, TOPEKA, KANSAS.

We make anything in  
Cast-Iron, Models, Pat-  
terns. WRITE US.



#### Great Rock Island Route Playing Cards.

Send 12 cents in stamps to John Sebastian, General Passenger Agent C., R. I. & P. railway, Chicago, for the slickest pack of playing cards you ever handled, and on receipt of such remittance for one or more packs they will be sent you postpaid.

Orders containing 60 cents in stamps or postal note for same amount will secure five packs by express, charges paid.

#### Popular Low-Price California Excursions.

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

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

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

Daily service, same as above, except as regards agent in charge. For descriptive literature and other information address G. T. Nicholson, G. P. A., A., T. & S. F. Ry., Chicago.

#### Ho! for Cripple Creek.

Remember that the Chicago, Rock Island & Pacific is the only line running directly from the East to Colorado Springs, the natural gateway to the Cripple Creek District.

Colorado Springs lies at the foot of Pike's Peak at its eastern base, and Cripple Creek is part way down the southwest slope of Pike's Peak and near its western base.

Two all rail routes from Colorado Springs are offered you. One by the Midland railway up Ute Pass, via Summit, to Cripple Creek. Another over the Denver & Rio Grande, via Pueblo and Florence, to Cripple Creek. Take the great Rock Island Route to this wonderful gold mining camp. Maps, folders and rates on application. Address JNO. SEBASTIAN, Gen'l. Pass. Ag't., Chicago.

### To Cripple Creek

VIA COLORADO SPRINGS

The Chicago, Rock Island & Pacific Railway is

4 hours quicker  
To Cripple Creek  
than any other line.

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

### CRIPPLE CREEK

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

### GOLD! GOLD!!

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

### SANTA FE ROUTE



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

The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals...

THUMPS IN PIGS.—I have some shoats that have the "thumps." What is "thumps" and what can I do for them?

Answer.—Some writers think that "thumps" is palpitation of the heart. It is more probable that "thumps" is a spasmodic contraction of the diaphragm...

Will you give a simple and cheap remedy for keeping a horse's kidneys regular and active?

Answer.—If a horse is kept healthy his kidneys will be all right. Give the horse a sufficient quantity of good food, plenty of good water and salt.

TUMOR.—A yearling mule has a lump at the corner of his mouth about the size of a hen's egg and growing in size.

Answer.—It is a tumor and should be removed by a surgical operation.

TUMOR.—What is the cause and treatment for a soft lump that sometimes comes on the end of the cord, following castration in pigs?

Answer.—The lump is a tumor on the cord and is caused by irritation from the use of too strong medicine on the wound, dirt or improper castration.

The healing and purifying qualities of Salivation Oil render it the best article for the speedy cure of ulcerated sores.

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

"Among the Ozarks"

"The Land of Big Red Apples," is an attractive and interesting book, handsomely illustrated with views of South Missouri scenery...

No Room for Doubt.

When the facts are before you, you must be convinced. The facts are that the UNION PACIFIC is leading all competitors...

The line via Denver and Kansas City to Chicago in connection with the Chicago & Alton railroad, with its excellent equipment of Free Reclining Chair Cars...

To Colorado, Montana, Hot Springs, Puget Sound and Pacific Coast via Burlington Route.

Take the shortest and most desirable line to the far West; complete trains from the Missouri river. Daily train leaves Kansas City at 10:40 a. m., arrives Billings, Montana, 1,050 miles distant, 6:45 next evening...

Horse Owners! Use GOMBAULT'S Caustic Balsam



The Safest, Best ELIXIR ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish.

MARKET REPORTS.

Kansas City Live Stock. KANSAS CITY, Oct. 19.—Cattle—Receipts since Saturday, 12,992 calves, 679; shipped Saturday, 1,228 cattle, no calves. The market was steady to 10c lower.

SHIPPING AND DRESSED BEEF STEERS. No. Ave. Price. No. Ave. Price. 2.....1,480 \$4.15 1.....1,500 \$4.00 100.....1,372 3.75

TEXAS AND INDIAN STEERS. 51 Ind..... 881 \$2.61 4..... 912 \$2.30 21..... 862 2.30 102..... 707 2.25 9 Ind..... 775 2.20

NATIVE HEIFERS. 5..... 876 \$3.10 1..... 730 3.00 1..... 940 3.00 1..... 890 3.00 1..... 720 3.03 31..... 815 3.00 1..... 770 2.75 2..... 745 2.65

NATIVE COWS. 2..... 1,020 \$2.90 2..... 895 \$2.85 10..... 80 2.45 2..... 1,045 2.40 7..... 802 2.15 13..... 1,028 2.10 5..... 1,028 1.83 1..... 1,700 1.53

NATIVE FEEDERS. 27..... 1,314 \$3.65 50..... 900 \$3.50 7..... 1,185 3.25 4..... 1,450 3.25 2..... 1,190 3.00 1..... 910 2.25

NATIVE STOCKERS. 34 yrl..... 430 3.90 5..... 876 3.50 231..... 893 3.40 23..... 618 3.35 45..... 603 3.33 3..... 708 3.00 1..... 410 2.83 7 yrl..... 550 2.25

Hogs—Receipts since Saturday, 5,237; shipped Saturday, none. The market opened active and strong to 5c higher and closed easy on the heavy grades. The following are representative sales:

95.....190 \$3.35 7.....177 \$3.35 7.....151 \$3.35 81.....199 3.35 6.....168 3.32 95.....206 3.32 14.....202 3.32 82.....229 3.32 79.....278 3.32 60.....231 3.30 83.....205 3.30 67.....228 3.30 124.....180 3.30 66.....263 3.30 13.....199 3.30 72.....171 3.30 100.....170 3.27 74.....247 3.27 68.....167 3.27 75.....238 3.27 27.....191 3.27 81.....206 3.25 01.....167 3.25 78.....244 3.25 38.....252 3.25 63.....232 3.25 70.....247 3.30 68.....227 3.25 69.....252 3.20 73.....251 3.20 70.....238 3.20 44.....272 3.20 50.....301 3.20 70.....231 3.17 61.....238 3.15 64.....304 3.15 5.....258 3.15 71.....297 3.15 111.....151 3.12 1.....500 3.00 5.....462 3.00 2.....605 3.00 72.....173 3.00 1.....386 2.90 76.....175 3.00 1.....320 2.75 1.....300 2.50 1.....400 2.50

Sheep—Receipts since Saturday, 5,427; shipped Saturday, none. The market was active and strong. The following are representative sales:

11 lambs..... 72 \$4.25 12 lambs..... 61 \$3.50 150 native.....115 3.00 8 culls..... 93 2.20

Horses—Receipts since Saturday, none; shipped Saturday, 82. The market was rather quiet this morning. There are a good many buyers in the city, and with the supply on hand and more to come to-morrow, the prospects for the opening of the regular auction sales are better than last week.

Chicago Live Stock. CHICAGO, Oct. 19.—Cattle—Receipts, 20,000; market steady for best; stockers and feeders, \$2.30 @ 3.65; mixed cows and bulls, \$1.25 @ 2.75; Texas, \$2.40 @ 3.25.

Hogs—Receipts, 41,000; market 5 to 10c higher, closed easy; light, \$3.10 @ 3.57; rough packing, \$3.00 @ 3.15; mixed and butchers, \$3.10 @ 3.55; heavy packing and shipping, \$3.20 @ 3.50; pigs, \$2.25 @ 3.55.

Sheep—Receipts, 22,000; market 10c higher; native, \$1.25 @ 3.25; western, \$3.15 @ 3.30; lambs, \$3.00 @ 3.40.

St. Louis Live Stock. ST. LOUIS, Oct. 19.—Cattle—Receipts, 3,000; natives 10c lower; Texas steady.

Hogs—Receipts, 500; market 5c higher; light, \$3.10 @ 3.55; mixed, \$3.25 @ 3.35; heavy, \$3.20 @ 3.40.

Sheep—Receipts, 1,500; market steady.

Chicago Grain and Produce. Oct. 19. Opened High'st Low'st Closing

Table with columns: Commodity, Date, Opened, High'st, Low'st, Closing. Includes entries for Wh't, Dec, May, Corn, Oats, Pork, Lard, and Ribs.

Kansas City Grain. KANSAS CITY, Oct. 19.—There were small offerings of wheat here for Monday, and an irregular demand. Prices of hard wheat were up 4 to 5c a bushel.

BROOMCORN ESTABLISH'D 1873 ON CONSIGNMENT OR SOLD DIRECT. We carry the largest stock of Broom Manufacturers' Supplies in the United States.

BROOMCORN F. JELKE & SON Established 1850. 53 Walnut St., Cincinnati, O. Cash Advances Made on All Consignments. REFER TO ANY CINCINNATI BANK. WRITE FOR FULL PARTICULARS.

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 South-west centering at Kansas City has direct rail connection with these yards, with ample facilities for receiving and reshipping stock.

Table with columns: Official Receipts for 1895, Slaughtered in Kansas City, Sold to feeders, Sold to shippers, Total Sold in Kansas City, 1895.

CHARGES: YARDAGE, Cattle, 25 cents per head; Hogs, 8 cents per head; Sheep, 8 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.

HORSES SOLD AT AUCTION on Tuesday, Wednesday and Thursday of each week. Private sales every day at the Kansas City Stock Yards Horse and Mule Department.

Consign Cattle, Hogs and Sheep to LONE STAR Commission Company. For best results. A new company. Capital \$100,000. Telephone 1108. Market reports furnished. Write us. KANSAS CITY STOCK YARDS.

GROWERS OF AND DEALERS IN Cattle, Hogs and Sheep MAKE YOUR CONSIGNMENTS TO Ben. L. Welch & Co. COMMISSION MERCHANTS, STOCK YARDS, KANSAS CITY, MO. And EAST ST. LOUIS, ILL.

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

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

DIRECT-UM BIT! Best Combination Bit made. Severe or Easy as you want it. Sample mailed, XC \$1.00. Nickel..... 1.50. RACINE MALLEABLE IRON CO., Racine, Wis.

JONES HE PAYS THE FREIGHT. Farm and Wagon SCALES. United States Standard. All Sizes and All Kinds. Not made by a trust or controlled by a combination. For Free Book and Price List, address JONES OF BINGHAMTON, Binghamton, N. Y., U.S.A.

RUSSELL'S STAPLE PULLER AND WIRE SPLICER. A combination tool used in repairing and removing wire fences. Price \$1.25. Drives and pulls staples, cuts and splices wire. Its special use is in building and repairing wire fences, but may be used for many different purposes about a farm. Saves its cost in one day's work. You can't afford to be without it. Ask your hardware merchant for it, or address Russell Hardware & Implement Manuf'g Co., Kansas City, Mo.

DOOR YARD HORSES. A name applied to such as put on style on short drives, but soon "peter out." Many of the three rod samples of wire fences shown at the fairs, are built on this plan. The strong spring works nicely, but when required to regulate 40 or 80 rods it fails. The only "long distance" regulator is made by PAGE WOVEN WIRE FENCE CO., Adrian, Mich. When you write mention Kansas Farmer.

# The Poultry Yard

## MOVABLE HEN HOUSES.

They Are a Good Thing When Properly Constructed and Cared For. In England movable poultry-houses have been popular for a long time.

The advantages of such houses consist chiefly in furnishing fresh ground for the fowls and, if the houses are made without floors, in avoiding cleaning them. There is also an advantage in having the flock small, for small flocks, from some unexplainable cause, usually do better than large ones.

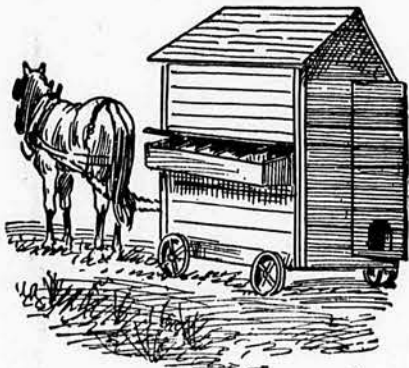
Mr. H. H. Stoddard, then of Hartford, Conn., some years ago advocated in "An Egg Farm" a colony plan of keeping fowls. This plan consisted in brief of portable houses, which were constructed like a roof, pitched both ways, with doors and windows at the ends, and



MOVABLE HEN HOUSE.

resting upon runners. There were no floors. Houses were moved frequently a few feet, and thus the droppings were cared for. The houses were to be painted with different colors, that the fowls might recognize them the more readily.

The objections to portable houses are: First, the greater cost; second, the greater amount of time required to care for the fowls; third, the fact that they do not afford the best quarters for the fowls during the winter. Where many fowls are kept, the labor question, usually ignored, is an important one, and anything which will save labor is worth consideration. In permanent,



THE HOUSE ON WHEELS.

fixed houses, conveniences for watering, feeding, cleaning, etc., can be introduced, which it would not be feasible to introduce into movable houses. By providing two yards for each pen, which can be done with a little foresight in laying out the hennery, the objection to foul earth can be overcome.

These yards can be used on alternate years, the year in which they are not used by the fowls being devoted to the growth of a crop of clover. By having portable fences, and the yards upon opposite sides of the house, the cost of fencing will not be appreciably increased, and the ground upon which the hens have run can be plowed and sowed without difficulty. Raising a crop for one year takes out all the noxious qualities from the soil. It is, therefore, a question whether it is advisable to adopt movable houses or not.

If one decides to adopt such houses, and intends to keep a large number of fowls, we think the colony plan one of the best which has been devised. The houses, for winter use, however, should be provided with a floor. During the winter they can be drawn together so as to avoid a large amount of travel in caring for the fowls.—Country Gentleman.

When the scalp is atrophied, or shiny-bald, no preparation will restore the hair; in all other cases, Hall's Hair Renewer will start a growth.

## AN UNNATURAL HABIT.

### Best Way to Cure an Egg-Eating Hen Is to Eat the Hen.

The habit of egg-eating is a vice, of which, when once contracted, it is almost impossible to break the hen. When the habit is acquired by a hen it will spread throughout the flock, if not checked in the beginning. The best way to cure a hen that eats eggs is to eat the hen. Egg-eating is encouraged by leaving eggs in the nest over night; they get broken and when a hen once gets the taste of an egg she is always desirous of cultivating that taste, and eats everything that looks like an egg. If you must keep an egg in the nest, use artificial ones, those that cannot be broken, or if broken, are unpalatable and bad for digestion. There are all sorts of artificial eggs, wooden, china, chalk, etc., any of these will do for nest eggs. Boiled meat seasoned with a little pepper and salt and ground bones, will sometimes satiate this unnatural appetite. Dark nests are also used for hens that eat their eggs, but not with good results. It is better by far to do the right thing at once and eat the hen. You will save yourself lots of trouble.—Feather.

### A New Lice Exterminator.

A new lice exterminator, recommended by the Arkansas experiment station, is as follows, being a kerosene extract of pyrethrum: 1½ gallons kerosene soaked through 2½ pounds pyrethrum, resulting in a yellowish, oily extract, which will not mix with water, but which will form an emulsion with soap, similar to kerosene emulsion. One pound of soap dissolved in 1 gallon boiling water added to 1 gallon of the extract, well mixed or churned with a force pump, made a perfect emulsion, which, when diluted—one part of emulsion to 450 parts water—readily killed cotton worms. It seems to combine the properties of kerosene and pyrethrum, and to be more effective than either, easier to handle and cheaper.

### The Curse of the Pigeon.

If a man wishes to keep pigeons and confines them in wire-covered yards, they will pay, but to have a lot of pigeons flying over the whole neighborhood is a curse to every farmer and poultryman, as they not only eat food that other persons than the owner of the pigeons must pay for, but they bring and carry disease from one flock to another, says an exchange. Cholera, roup and lice are spread by pigeons. Every community should rebel against the man who turns a flock of pigeons loose to fly where they desire. Owls, hawks and minks are blessings compared with pigeons where poultry is kept.

### Catarrh Cannot Be Cured

with LOCAL APPLICATIONS, as they cannot reach the seat of the disease. Catarrh is a blood or constitutional disease, and in order to cure it you must take internal remedies. Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces. Hall's Catarrh Cure is not a quack medicine. It was prescribed by one of the best physicians in this country for years, and is a regular prescription. It is composed of the best tonics known, combined with the best blood purifiers, acting directly on the mucous surfaces. The perfect combination of the two ingredients is what produces such wonderful results in curing catarrh. Send for testimonials, free.

F. J. CHENEY & CO., Props., Toledo, O. Sold by druggists, price 75 cents.

### Union Pacific Route.

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

### 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.

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

- ARMSTRONG & McKELVY Pittsburgh.
- BEYMER-BAUMAN Pittsburgh.
- DAVIS-CHAMBERS Pittsburgh.
- FAHNESTOCK Pittsburgh.
- ANOHOR Cincinnati.
- EOKSTEIN Cincinnati.
- ATLANTIC New York.
- BRADLEY New York.
- BROOKLYN New York.
- JEWETT New York.
- ULSTER New York.
- UNION New York.
- SOUTHERN Chicago.
- SHIPMAN Chicago.
- COLLIER St. Louis.
- MISSOURI St. Louis.
- RED SEAL St. Louis.
- SOUTHERN St. Louis.
- JOHN T. LEWIS & BROS. CO. Philadelphia.
- MORLEY Cleveland.
- SALEM Salem, Mass.
- CORNELL Buffalo.
- KENTUCKY Louisville.

**WHY IS IT** that practical painters everywhere use and recommend Pure White Lead and Pure Linseed Oil? Simply because they know their business, have a reputation to maintain, and cannot afford to use or recommend anything else. To be sure of getting

## Pure White Lead

examine the brand (see list genuine brands). Any shade or color is readily obtained by using NATIONAL LEAD CO.'s brands of Pure White Lead Tinting Colors.

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

NATIONAL LEAD CO.,  
1 Broadway, New York.

## Lameness Cured

By a few applications. If your horse is lame and you cannot locate it, apply the Elixir, which locates lameness by remaining moist on the part affected, the rest drying out. A few more applications will effect a cure. Never scars or changes the hair.

## TUTTLE'S ELIXIR

Is the standard remedy for Colic, Curbs, Splints, Contracted and Knotted Cords, Shoe Boils, Calluses of all kinds, etc. Will relieve all Spavins, Ring Bone, Cockle Joints, etc. It is warranted to give satisfaction. Highly endorsed by prominent horsemen.

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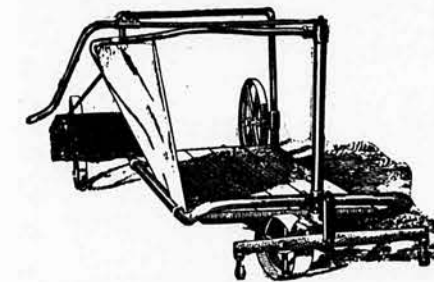
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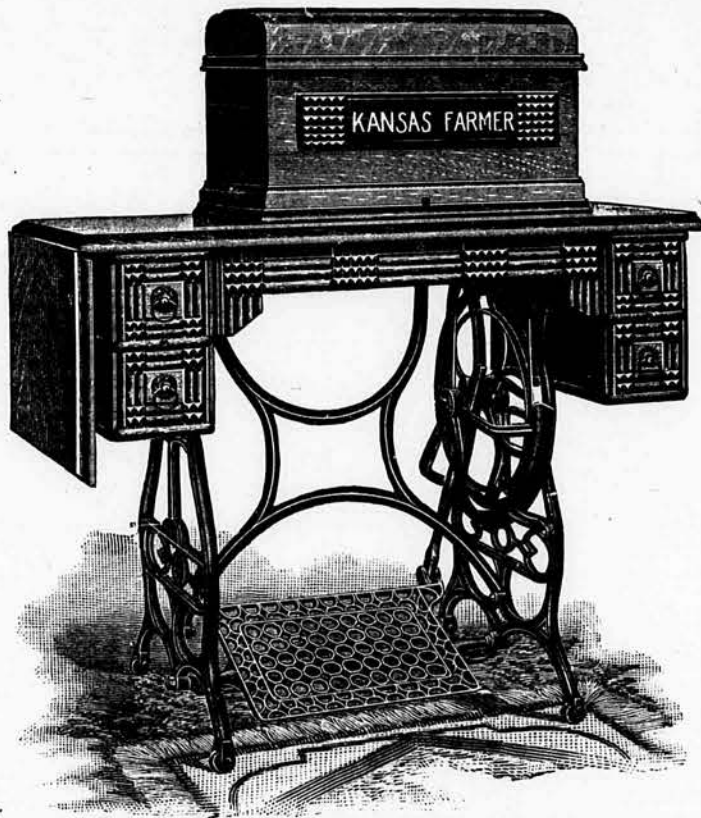
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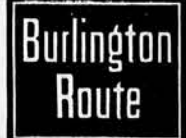
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FOR SALE—Farms in Morris, Osage, Lyon, Bourbon, Cherokee, Labette, Neosho, Anderson, Montgomery, Coffey, Woodson and many other counties for sale on eight years' time. No interest asked or added in. Write for new circulars with descriptions and prices. Hal W. Neiswanger & Co., Topeka, Kas.

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

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PEARL, KAS., THURSDAY, NOVEMBER 12, 1896.

The offering consists of seven yearling boars, twelve bred sows, and balance spring pigs, both sexes, good individuals and breeding. Send for catalogue. J. H. TAYLOR, Pearl, Dickinson Co., Kansas.

SEVENTY-FIVE HEAD. SECOND ANNUAL PUBLIC SALE OF POLAND-CHINA HOGS TO BE HELD AT RICHMOND, FRANKLIN CO., KAS., FRIDAY, OCTOBER 30, 1896.

The offering is by far the best I have ever made, and will comprise the herd boars, Upright Wilkes 18246, J. H. Sanders Jr. 13729 and Medium Pride, twenty sows bred to my herd boars, also about fifty spring pigs of both sexes, splendid individuals and of the choicest breeding. TERMS:—A credit of six months at 8 per cent. will be given. Sale at 1 p. m. Free entertainment and transportation furnished at Richmond. Come and bring your friends. Spread the news. Col. J. W. SPARKS, Auctioneer. J. R. KILLOUGH & SONS, Richmond, Kansas.

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ANNUAL PUBLIC SALE. 25 Boars. 35 Sows. FASHIONABLY BRED POLAND-CHINAS. PRINCETON, FRANKLIN CO, KAS. Tuesday, October 27, 1896.

Among the offerings will be the two-year-old boar, Ely Tecumseh by Tecumseh J. Corwin 10744 S. and out of Warner's Gold Drop (14432), she by the noted \$800 Free Trade 4420 S. and out of King's Gold Drop (11714). The late fall boar, Mont Ida Chip 2d by Lord Chip 11151 S. and out of Bettie May (33940). His sire, Lord Chip, was a first place and sweepstakes winner in 1895 and a first place winner in 1896. There will be twelve brood sows, yearlings and two-year-olds, some of which will have litters at side. They are bred to Princeton Chief 14545 S., a son of Chief Tecumseh 2d 9115 S. There will be forty spring pigs—twenty-three extra choice boars and seventeen gilts—that were sired by five different boars, viz.: Business 11637 C., Princeton Chief 14545 S., Dictator 2d 14065 C., Riley Medium 12306 S. and Upright Wilkes 13246 S. The youngsters are smooth, well finished and a well grown out lot. TERMS:—All sums of \$15 and under cash; on sums over \$15, six months time without interest if paid when due; if not paid when due, 10 per cent. from date of note; 4 per cent. discount for cash. Sale to begin at 1 o'clock p. m. For further information write for catalogue. COL. S. A. SAWYER, Manhattan, Kas., Auctioneer.

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WILD TOM 51592. Sweepstakes bull Wild Tom 51592. Weight when thirty-four months old 2,205 pounds in show condition. He is the best living son of Beau Real 11055. Dam Wild Mary 21238. Winnings:—Iowa State Fair, 1895, first in class, first in special, first in sweepstakes, and Silver Medal; Kansas State Fair, first in class, first and special at head of herd, first bull and four of his get. FARM—Two and a half miles northwest of city. We furnish transportation to and from the farm if notified.