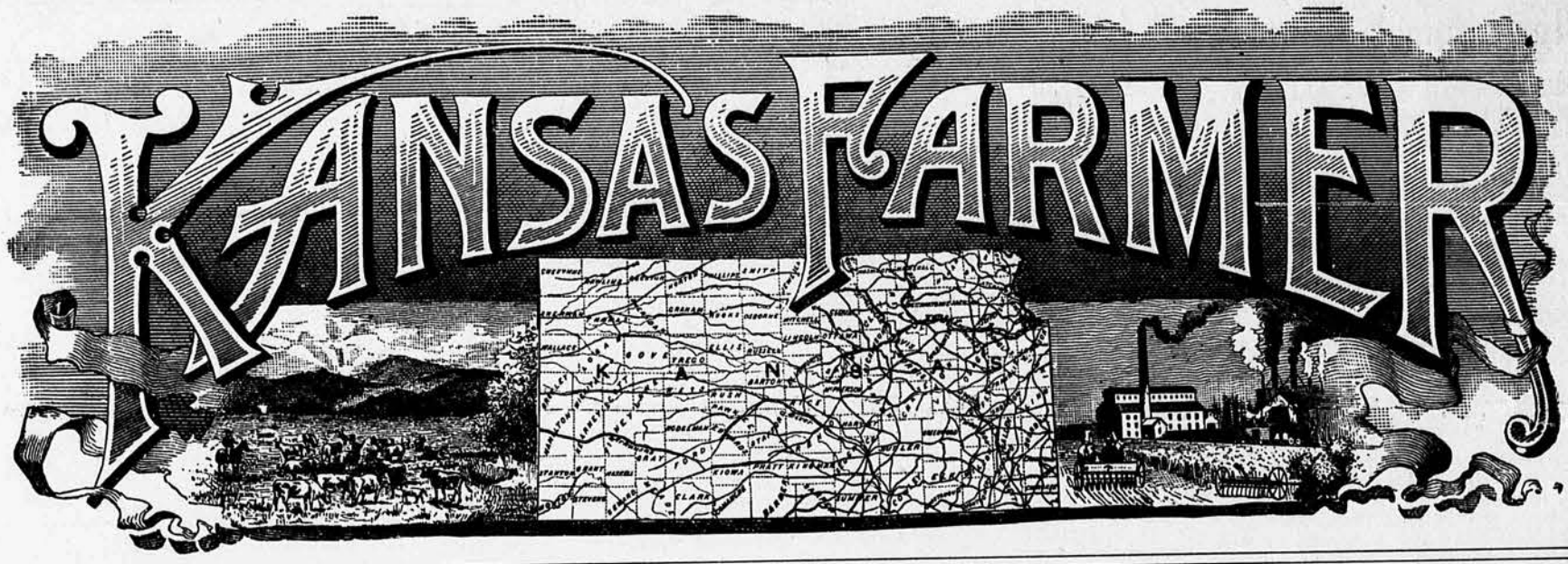

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See what Judge Rhodes says of my turkeys:
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For Ready Sale Thirty Poland-China Bred Sows
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HEDGEWOOD HERD OF POLAND-CHINAS
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Popular Blood. Individual Merit.

Brood sows of the most popular strains and individual merit. The best that money can buy and experience can breed. Farm one and one-half miles south and half mile east of Vassar, Kas., on Missouri Pacific railroad.

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REGISTERED POLAND-CHINA SWINE

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of the fashionable prize-winning Chief I Know strain. Cheney's Chief I Know at head of herd. Pigs for sale. Prices low.

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Mated for best results. Also **Barred Plymouth Rock** chickens and eggs for sale. Correspondence or inspection invited. Mention FARMER.

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Of the Best Strains.

Stock for sale. Correspondence and inspection invited.

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Three hundred head, six good spring boars, good bone, large and growthy, very cheap. Six June boars, very heavy bone and fancy, four of them will make herd-headers. Twenty yearling sows and spring gilts, bred, good ones, at from $12 to $15. One hundred and fifty of the finest fall pigs we ever produced. For sale cheaper than you ever bought as good pigs be fore. WAIT & EAST, Altoona, Wilson Co., Kans.

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Chief Tecumseh 2d, Klever's Model, U. S. Model, Moorish Maid and Chief I Know strains. A selected lot of bred sows and young stock for sale at very reasonable prices. Over thirty years in the business. Stock equal to any. Satisfaction given.
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Nation's Poland-Chinas.

Fifty boars and gilts for this season's trade. My herd boars consist of Darkness Quality 14361, Princeton Chief 14543, Col. Hidestretcher 37247 and Standard Wilkes. My sows are splendid individuals and of the right breeding Personal inspection and correspondence invited.
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Young boars old enough for service, also sows and gilts bred and unbred for sale. Sired by 2d Seven Oaks, Col. Mills 45718, Prince Majestic 45600 and others. Write for prices, or come and inspect stock.
MANWARING BROS., Lawrence, Kas.

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Herd Boars are *Grand Sons* of J. H. SANDERS and SHORT STOP, the *World's Fair Prize Winners.* Bred to 20 large mature sows of *Corwin Black U. S.* and *Black Bess* blood. We aim to produce the money-makers, not sacrificing size and feeding qualities to fancy points. Choice young stock for sale at reasonable prices. **M. L. SOMERS, Altoona, Kas.**

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BERKSHIRE, Chester White, Jersey Red & Poland China PIGS. Jersey, Guernsey & Holstein Cattle. Thoroughbred Sheep, Fancy Poultry, Hunting and House Dogs. Catalogue.
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Five Poland-China boars for sale at prices lower than we have ever offered. Two by Highland Chief, he by C. T. 2d, one by Knox All Wilkes, two by Silver Chief 2d. Anybody wanting a boar write at once.
DIETRICH & SPAULDING,
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Herd boars, Victor Hugo 41799 (sire imp.), Barkis 30040 (weight 800 lbs.), Prince Jr. 17th, from World's Fair winner. Choice pigs from five different strains. Also breed Shropshire sheep, M. B. turkeys and B. P. Rock chickens. Write.
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W. P. GOODE & SONS, Lenexa, Johnson Co., Kans., breeders of Pure-Bred Poland-Chinas. For sale now a grand lot of pigs by Combination F. F. 18069. He combines the "first families"—Chief Tecumseh 2d and Black U. S. We have the produce of the greatest Poland-China hogs in the world always on hand. Prices moderate.

CATTLE.

CENTRAL KANSAS STOCK FARM.—F. W. ROSS, Alden, Rice Co., Kas., breeds pure-bred Shorthorns, Poland-Chinas and Barred Plymouth Rocks. Stock for sale.

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E. A. Eagle & Son, Props., Rosemont, Osage Co., Kas.

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Geo. Groenmiller & Son,
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Breeders of Red Polled Cattle and Cotswold Sheep. Buff and Partridge Cochins. Light Brahmas, Brown S. C. Leghorns and Golden Wyandottes.
A few seven-eighths Red Polled bulls for sale.

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Registered **Galloway Cattle.** Also German Coach, Saddle and Trotting-bred horses. World's Fair prize Oldenburg Coach stallion, Habbo, and the saddle stallion, Rosewood, a 16-hand, 1,100-pound son of Montrose, in service. Visitors always welcome. Address
BLACKSHERE BROS., Elmdale, Chase Co., Kas.

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Scotch and Scotch-topped, with the richly-bred Cruickshank bulls, Champion's Best 114671 and Gwendoline's Prince 130913, in service. Also high-class **DUROC-JERSEY SWINE.** Can ship on Santa Fe, 'Frisco and Missouri Pacific railroads.
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D. P. NORTON,
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Imp. British Lion 133692 and Imp. Lord Lieutenant 120019 in service. Sixty breeding cows in herd. Lord Lieutenant sired the second prize yearling bull at Texas State Fair, 1898, that also headed the second prize herd of bull and four females, any age, and first prize young herd of bull and four females.

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Percheron and Roadster Horses and Shetland Ponies; also one Denmark Saddle Stallion; also Shorthorn Cattle. Stock of each class for sale.

Also a car-load of young Shorthorn bulls for sale. Pedigrees guaranteed. Address
O. L THISLER, Chapman, Kas.

Agricultural Matters.

WHAT I KNOW ABOUT ALFALFA.

By D. H. Watson, Kearney, Neb., read before the annual meeting of the Kansas State Board of Agriculture, January 13, 1899.

My acquaintance with alfalfa as a forage plant dates from the 70's, when residing in California.

In the spring of 1889 I came into possession of a 20-acre field of straggling alfalfa, about two miles west of the center of Kearney County, Nebraska. It immediately attracted my attention, for the reason that I had supposed it would not thrive at this altitude without irrigation. At that time the thought came to me, if this plant can be grown here without irrigation it is the greatest opportunity for successful agriculture I have ever known. I, therefore, resolved to watch it a little, which I did very much to my advantage.

During the following year, which the people of Kansas and Nebraska so well remember because of the terrible drought which prevailed over a large portion of these States, I succeeded in cutting from this 20 acres of land nearly fifty tons of hay, in three cuttings, worth on the ground at that time, because of the scarcity of hay in this vicinity, over $600.

SOWED SOME ALFALFA SEED.

I then determined to sow some alfalfa seed as soon as possible and watch it from seeding. My first opportunity came in the fall of 1892, at which time I fitted the ground for 12 acres and in the spring of 1893, after thorough preparation, sowed the seed. The year of 1894 was a particularly disastrous one to the farmers of our section (central Nebraska) not alone because of the drought, which almost equalled in severity that of 1890, but because of a severe hail storm, covering an area five miles wide and fifty miles long, that destroyed everything in its track, including the second cutting of my alfalfa. I cut, however, that year from the 12 acres sown in 1893, from the first and third crops, 40 tons of hay; and from the 20 acres above referred to, from the first crop, 20 tons. After the hail storm on July 8 the alfalfa on the 20-acre piece made a growth of 29 inches in thirty-one days, which was cut for seed, and yielded 70 bushels of seed, then worth on the market $4.50 per bushel, or $315. As hay was worth $10 per ton at that time, the products from that 32 acres of alfalfa would have brought, had they been sold, over $900, or about $30 per acre.

This result in time of drought so interested me that in the fall of that year I plowed one thousand acres of land, and, after the most careful preparation, seeded it in the spring of 1895. A part of this acreage was sown with oats, using one bushel of oats to the acre, and the remainder seeded without a nurse crop. Since then I have sown about one thousand acres more, eight hundred of which is a good stand. This eighteen hundred acres of land now set to alfalfa is in prime condition. In this connection it gives me pleasure to be able to say: I have an additional one thousand acres plowed for seeding to alfalfa next spring.

PREPARATION OF THE SOIL.

Being asked to tell you "What I know about alfalfa," it seems proper that I should first tell you how the soil is prepared. The land is invariably plowed in the fall, in such a manner as to leave no back or dead furrows, and as deeply as possible, using a subsoiler on all land the surface of which is more than 15 feet above the sheet water that, I am told, underlies the greater portion of Nebraska. The land is left in the furrow until all the frost is out of it in the spring. We then go on to it (sometimes as early as February) with a float—an instrument made of oak plank with which you are all no doubt familiar. Mine is 16 feet long. With this we thoroughly crush and level the ground, and follow immediately with a disk harrow, going over the land as many times as may be necessary to perfectly pulverize it, with the wheels set straight in order to pack the soil as much as possible. I am so particular about the preparation of the soil that in some instances the land is disked five times. After disking, the land is dragged thoroughly, using four horses on a 20-foot harrow at least once a week on the average, or after each rain storm. This is done to prevent the loss by evaporation of the moisture which is so necessary to the growth of all vegetation, and especially this plant.

SEED PER ACRE.

Based upon the result of many tests, I invariably use 20 pounds of seed to the acre, seeding with a Cahoon seeder, and sowing 10 pounds each way, that is, 10 pounds to the acre is sown crossing the field in one direction—from east to west, or north to south, according to the wind—then reseeding the same land with 10 pounds to the acre, crossing the field at right angles to the first sowing. I never sow oats or other grain with the alfalfa seed, now, as my experience has been that the alfalfa plant requires all the moisture available in this section, and cannot afford to share this very necessary requisite to its growth with any nurse crop. The seeding is completed between April 10 and May 15. As experiments, I have seeded every month in the year and found that the best results followed early seeding, as the young plants then receive the benefits of the spring rains.

About the middle of June, or sooner if the weeds are large enough to shade the ground (with us the sunflower and redroot are quite rank by that time), I mow the land, leaving the weeds to dry where they fall as they make a very fine mulch for the alfalfa. In four or six weeks more, according to the growth of the weeds, I mow again, leaving the weeds on the ground as before. This has given me in two instances a crop of alfalfa in September of the year of seeding, although generally I have got no hay crop until the second year.

My first seeding was in alternate strips of eighty acres, one strip with one bushel of oats to the acre and the next strip without the oats. The stand on the strips sown without the oats is to-day more than twice as heavy as on those sown with oats. Two or three times since I have seeded small areas with oats, and once with barley, only to find the same result.

THIRD CROP FOR SEED.

In raising our own seed, I now invariably use the third crop, as we have found if we use the first, nature will require the whole season to mature it. The same reason prevents us from using the second, whereas by using the third crop we are enabled to get two cuttings of hay. We always, however, calculate, where we intend to save the seed, to get the first two crops off by July 1, which gives the third crop ample time to mature its seed before frost. We have also found that if we take the third crop for seed, instead of either of the other two, that we have less foliage on the stems, almost the entire life of this crop going to the seed, which is a great advantage in threshing. In gathering the seed crop we use self-rakes. We generally thresh in winter, as we have more time during that season of the year, using a Birdsell huller.

I want to urge the importance of exercising great care in procuring seed, as otherwise considerable trouble may ensue. For instance, I bought some seed in your State in the spring of 1896 which so liberally endowed my farm with Russian thistle and foxtail as to practically ruin the stand. I have not found the Russian thistle difficult to eradicate, as it cannot stand repeated mowing; but foxtail, like alfalfa, thrives on mowing, so that if you once get it into your field you had best plow it up and start over; that is, plow up the entire field and reseed it. The danger of dodder is so well understood that you need no warning in regard to that.

INTERESTING EXPERIENCE.

Some of my alfalfa experience has been very interesting. You will remember that in the beginning I referred to the 20-acre piece of straggling alfalfa. The field was straggling for this reason: The gentleman who sowed it in 1884 (which makes the piece fourteen years old), being a banker and not a farmer, and knowing nothing about grasses, remarked to one of his neighbors that he was "going to sow some grass seed and trust in God." He concluded that he would "learn all about grasses then." Without special preparation he sowed a mixture of alfalfa, blue grass timothy, red-top and red clover seed, 5 pounds of each to the acre. It all came up well, but everything except the blue grass and alfalfa has disappeared. This field after fourteen years has such a perfect mat of blue grass between the alfalfa plants (some of which are a rod apart and some very close together, showing the seed was not well mixed) that the alfalfa plants have never been able to multiply themselves to any extent by the scattering of the seed, as they do quite frequently on other portions of the farm where there is no turf to prevent the seed from rooting. On this 20 acres, the yield from which I have above referred to, there was pastured on an average this past summer 25 cows. The people who rented of me wanted to get all they could out of it, and I counted at one time 37 head of grown stock upon it. I have farmed in the Connecticut Valley, and grown a ton and a quarter of tobacco to the acre; have raised fruit trees on the slopes of the Sierra Nevadas, and am familiar with the soils of Ohio, Michigan and the blue grass region of Kentucky, but I have never seen such results in the way of vegetable growth as this field of alfalfa and blue grass presents. Here is a field fourteen years old which in a year of drought furnished me a revenue of over $500, or $25 per acre, from two cuttings, the second having been destroyed, as above mentioned, by hail, just as it was ready to cut. The yield this year was greater than I have ever known it before, having had an unusually wet spring the blue grass grew as high as the alfalfa. From this and other fields I am convinced that we have a wonderful blue grass country in central Nebraska, even superior to the far-famed blue grass region of Kentucky.

DO AWAY WITH BLOAT.

Hereafter, when the alfalfa is old enough so its roots are relying for their support entirely upon the soil below that which the blue grass roots will penetrate, I intend sowing blue grass upon all my alfalfa fields, as this will do away with the danger of bloat that has heretofore existed in pasturing alfalfa, having observed that the cattle eat liberally of the blue grass before eating any of the alfalfa, which prevents them from consuming sufficient of the latter to injure themselves. Also, when we have a wet spring and get a heavy crop of blue grass, we invariably get a much finer quality of hay than when we have the alfalfa alone.

HILL LANDS.

Interesting as this piece of alfalfa has been with its blue grass accompaniment, its enormous yield without any manure or other fertilizer, I think my experience with the hill land, lying at least 100 feet above the water level, has been more so. In the spring of 1896 I broke 50 acres of what has always been termed the "semi-arid hills" of Nebraska—those hills which border the Platte Valley for more than 300 miles. It was my intention to back-set this land that fall and subsoil it, but was prevented from doing so by the early freezing of the ground. This was done in the spring of 1897, and, as it proved, at a very unfortunate time, as there was no rain after the land was fitted and sown for more than six weeks, which made the prospect of a good alfalfa catch in the hills quite gloomy. At last, however, early in June, the rains came, and in a few days there was such a color upon those hills as had never been seen there before, and this season, in spite of an unusually dry summer, I cut one ton to the acre, and then had four months of good pasturing.

Being curious to ascertain to how great a depth the roots of these plants had penetrated, I took my spade and found them more than 5 feet deep on an average. I now judge that these hills in place of being worthless are better worth $50 per acre to grow crops upon with alfalfa as a pioneer crop, than most of the best securities before the public are worth the prices quoted, leaving a very wide margin so far as the per cent of income is concerned in favor of the alfalfa land.

Another advantage in having these hills in alfalfa is that since they were seeded there has been no washing of the hill sides no matter how violent the storm, all of the moisture finding its way into the ground and being conserved.

AS A FERTILIZER.

Not the least valuable feature of the alfalfa plant to my mind is its great fertilizing power, its value when plowed under for subsequent crops being almost beyond belief. In this connection I desire to refer you to that painstaking and exhaustive experimenter, Prof. Edward B. Voorhees, of the New Jersey Experiment Station, who found that "The amount of plant food collected from one acre and its value on the basis of the prices per pound of plant food for the years 1887, 1888, 1889," was as follows:

	Pounds per acre.			
	Nitrogen.	Phosphoric acid.	Potash.	Fertilizing value.
1887	253.6	45.7	286.9	$57.70
1888	299.2	52.4	292.2	66.30
1889	360.0	63.0	355.5	89.44
Totals	912.8	161.1	934.6	$213.44

You will please bear in mind that these prices for nitrogen, potash and phosphoric acid were what the fertilizer manufacturers had to pay for them at that time without the profits which they added to them when they sold them to the farmers in the form of fertilizers. This is an average of $71.15 per acre. How many farmers in this Western country have land which is worth on the market $71.15 per acre, to say nothing of adding that amount in fertilizer each year? Yet I know of an Eastern farmer who expends more than this amount per acre each year to fertilize his land for a single crop. As our farms are our capital it would be well for us to bear in mind that when the plant food in our soil is exhausted by our careless methods of tillage the cultivation of alfalfa, red clover or some other legume will be imperative, and that, too, in a careful rotation, or we shall be compelled to deplete our pockets as do our Eastern brothers in the purchase of that plant food which now exists in the soil of most of our farms in rich abundance. In the words of Professor Vooorhees, "Alfalfa acts in the hands of the farmer as an agent for rendering locked up capital available."

THE ORCHARD.

To give you an idea of what the alfalfa roots are worth to the soil when decayed and the plant food available I will tell you of my orchard. I set about four acres of trees in the spring of 1897 on a part of the twelve acres of land seeded to alfalfa in 1893 and broken out in 1896, and at the same time (the same week) set, a few rods away, exactly the same kind of trees of the same size and age. This fall I measured the trunks of the trees and found that some of those set upon the alfalfa land were three inches in diameter while none of those set on the other piece of land were one-half that size. The soil of each piece was the same previous to the sowing of the alfalfa.

SUBSOILING.

As to subsoiling, I am not able to state from my experiments exactly how much better the soil will retain moisture because of the large quantities of humus which will inevitably be stored up in the soil, but this I do know, that the roots which are below the eight or ten inches, in which the ordinary crops find their support, have thoroughly honeycombed the soil to a considerable depth, and not only fill it with humus, but, as it decays, leave a deep porous subsoil, or reservoir, for the storage of all moisture that is precipitated upon it, and no better definition has ever been given of alfalfa along this line than the one which your unusually capable secretary gave it in his quarterly report on this wonderful plant where he speaks of it as the "silent subsoiler." It is, indeed, such a subsoiler as no implement-maker will ever be able to produce.

Speaking of subsoiling, without desiring to advertise anybody's agricultural implements, I think it to the interest of every farmer to learn that there is a plow called the "Secretary," in honor of Secretary Morton, of my State, which with three large horses and one man can be made to do the work which, before I learned of it, cost me the labor of two men and seven horses. Before possessing this make of plow, the land was fitted by using three horses on the regular plow and four horses on the subsoil plow following in the same furrow.

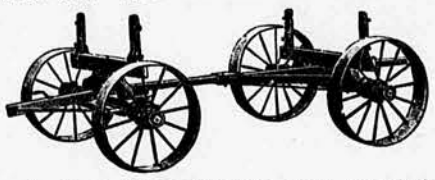
I could talk for hours upon the importance of conserving moisture in this region which, now that we have begun to use the alfalfa plant, will become one of the most valuable regions for agriculture in the United States. But time will not permit, and we will pass to the cutting of the hay.

CUTTING AND CURING THE HAY.

My experience is that it should be cut as near as possible when it is in full bloom. Having so large an area this necessitates cutting a portion of mine before it commences to bloom at all. No cutting is done in the morning until the dew is off that the alfalfa may fall on well warmed ground. The men are employed before that time in cultivating other crops and destroying weeds generally, using a hand-hoe when necessary. As soon as the hay is thoroughly wilted, it is raked into small windrows from which it is gathered later by buck-rakes into stacks. As a rule there are three men on the stack, four men on the buck-rakes, one man to attend the stacker and a boy to guide the team used with the stacker. There is a large loss of leaves attending this process and had I a small area the hay would be gathered as I was taught to cure red clover in New England, by cocking it and letting it cure in the cock, after which it was immediately hauled to the barn that it might not get

Buy the Best.

If you want the best low down wagon you should buy the Electric Handy Wagon. It is the best because it is made of the best material; the best broad tired Electric Wheels; best seasoned white hickory axles; all other wood parts of the best seasoned white oak. The front and rear hounds are



made from the best angle steel, which is neater, stronger and in every way better than wood. Well painted in red and varnished. Extra length of reach and extra long standards supplied without additional cost when requested. This wagon is guaranteed to carry 4,000 pounds anywhere. Write the Electric Wheel Co., Box 46, Quincy, Illinois, for their new catalogue which fully describes this wagon, their famous Electric Wheels and Electric Feed Cookers.

wet. As it is, what hay will be necessary for the dairy cows and breeding ewes and perhaps for all of my ruminating animals will hereafter be cured in the cock, as I am certain that the additional cost of curing it that way will be more than compensated by the increased value of the hay. While there is no more valuable forage for cattle, sheep, colts or hogs than well-cured alfalfa, so also there is no hay which can receive greater damage from wetting. Because of this I will hereafter put as much of it as possible in barns and sheds. I will put the remainder in stacks which I shall protect with stack-covers, which are now manufactured for that purpose.

HOW TO KILL OUT ALFALFA.

When we wish to kill out alfalfa, that we may use the field for orcharding or other purposes, we plow it in August, using three horses to a very sharp plow with a rolling cutter. About a month later we plow again in the other direction, leaving the furrows open that we may collect all of the moisture possible from the frosts and storms of winter.

In regard to the feeding value of alfalfa, my experience along this line has not been as exhaustive as the experiments conducted at the various State experiment stations, to some of which I will briefly refer later. There is one thing, however, which it may be well for me to tell you, particularly as it is generally understood that alfalfa makes poor horse feed, and so it does for driving horses. In July, 1894, finding myself without old hay or grain, and no corn to be had for less than 60 cents per bushel, I was compelled to depend entirely upon new alfalfa hay to feed some 80 work-horses for more than thirty days, during which time they were worked unusually hard, as I was trying to subdue a swamp which was, in many places, very difficult to plow. During this time the horses were maintained in their usual condition of health and flesh, although I believe it better practice to feed some grain, in connection with the alfalfa, to all horses when hard worked. Since that time have fed all my work-horses on well-cured alfalfa, choosing for this purpose cuttings when the plant was passing out of bloom, having learned that there was more protein in alfalfa cut late than that cut earlier.

I will relate one other experience: In April, 1895, I turned 60 hogs, some of which were brood sows, into an 8-acre piece of alfalfa and kept them there all summer without grain, during which time they increased to 120 in number. In the early fall a little corn was given them to help out the alfalfa as the number of hogs increased. It is my judgment that a little ground grain should be given to growing pigs when pastured on alfalfa to stimulate their growth and harden them.

FEEDING ALFALFA.

The subject of feeding alfalfa is so important to all who grow it that I have spared no pains to learn what others have found out along this line, and it may interest you to learn of a cattle-feeding experiment at Fort Collins, Colo., conducted in the winter of 1894-'95, by Prof. W. W. Cooke, agriculturist at the Colorado State Experiment Station, which was very thorough in its character, in fact, practically exhaustive. In that experiment it was fed with corn costing there 42 cents per bushel, and the results obtained in one pen gave a value of $17.70 per ton for the alfalfa. From another pen the return was but $8.12 per ton, yet the average for all pens was $11.80 per ton. In connection with this test was another which will furnish food for thought to all who desire to receive the largest returns for their feed and efforts; that of feeding to animals of various ages, as follows: To 4-year-olds, $8; to 2-year-olds, $10.50, and to yearlings, $16 per ton, showing just twice as much per ton for the alfalfa when fed to yearlings as when fed to 4-year-old steers. Another argument for letting the other fellow do the feeding after the animal is from eighteen months to two years old according to its development.

At the Michigan Experiment Station, in a sheep-feeding test conducted by Prof. Herbert W. Mumford, in September, 1896, it was found that alfalfa made a return of $12 per ton when fed in connection with corn at 30 cents per bushel—a better gain at less cost than was made with any other hay.

FEEDING VALUE.

At the New Jersey Experiment Station it was found, in 1887-'88, that alfalfa hay yielded an average value, when fed in connection with the high-priced grains which prevailed in that locality, of $20.60 per ton, which made the total value per acre for the two years over $200, there having been obtained about ten tons of dry hay from a single acre during that time.

Your own State Agricultural Experiment Station, after a series of the most careful experiments, have pronounced this hay to be worth in feeding value three times as much as prairie hay, and informed you that when the latter is worth $2 per ton you can afford to purchase alfalfa at $6 per ton.

From all this I conclude the feeding value of this plant to be beyond all question, and I will close by asking each farmer who may read these lines to thoughtfully consider what this hay would be worth to him if fed in connection with corn of his own raising.

Heading and Threshing Kaffir Corn.

Editor Kansas Farmer:—One of the subjects which is uppermost in the minds of the Western farmers at present is the one which relates to the most economical and advantageous method of heading and threshing Kaffir corn. I will relate some of my experiences along these lines.

First, I will refer to the Elkhart header, which is attached to a wagon box with side-boards on. This header heads one row at a time and delivers the heads into the wagon box. It is propelled by an endless chain, which runs on a sprocket wheel attached to the spokes of the hind wagon wheel. With a good walking team one man can head three acres per day, provided he does not haul the heads too far. Considerable loss of seed occurs by throwing the heads in windrows to dry, and we have found it best to make small shocks of them, as this facilitates gathering up the heads at time of threshing or at a time when they become dry enough to stack. Where the Kaffir corn rows are three feet apart considerable difficulty is experienced in getting the team to walk right, as horses do not care to follow on top the rows. It will be observed that the wagon must straddle two rows at a time and some of the Kaffir corn is broken down this way where rows are three feet apart. By laying off lands with the common corn sled and by carrying the fodder out of the way in advance of the header this objection is somewhat obviated.

The Elkhart header has a tendency to throw occasional heads over the wagon. This can be remedied by putting an extra side-board on the opposite side of the wagon. The row must come between the shields, about right to get the majority of the heads. This header is adjustable up and down for varying heights of Kaffir corn. It will be observed that one man and team by this method can head considerably over one hundred bushels per day, or about twenty loads, thus putting this method, from the standpoint of expense, at not over 1½ cents per bushel, where the Kaffir corn makes a pretty good yield. A wagon box will hold about a half mile of heads. One of the essential drawbacks to this method is the limited acreage that can be headed in the small amount of time usually available between the time the Kaffir corn matures and frost.

There is another make of header which takes one row at a time and has boxes on either side that can be dumped by lever power. And when this is borne in mind, that it takes almost as long to unload a load of headed Kaffir corn as it does to head it with the header above spoken of attached to a wagon bed, this may prove a decided advantage. In some places wheat headers are used for heading Kaffir corn. This, no doubt, is a very expeditious way where it can be done successfully. Some persons, to my knowledge, have headed Kaffir corn with pocketknives and claim they can head several loads a day by this method.

We will now pass from the consideration of methods employed in heading standing Kaffir corn to that cut with corn sleds and self-binders and placed in shocks. Some farmers push the heads out over some stationary block, or over the edge of a wagon box, where a man stands with a corn-knife and cuts them off. By fastening a pole to the top of the wagon bed and laying the heads over this they can be cut off somewhat easier, but a better method than either of these is to bolt a short inch board to the side of the wagon box, leaving a small space between. Take a knife (which should be rather stiff) from an ordinary corn sled, to which fasten a handle bolted securely. Fasten one end of this knife on the side of the wagon box so that the knife can operate through the small space heretofore mentioned. By this means one man can head more Kaffir corn than two can lift up to him, or about one hundred bushels per day. This contrivance placed on a hay-rack, with a row of box boards around it and made tight at the bottom will be found more advantageous than the smaller sized wagon bed, as more heads can be hauled at once, and thus more accomplished. Loading Kaffir corn on a hay-rack and allowing the heads to project out over the edge of the rack and cutting them off with a hay-knife I have found somewhat impracticable, as a man cannot accomplish enough in a day.

Another way that has several points to recommend it is, to take bound Kaffir corn and run the heads into the cylinder of a threshing machine, and after twisting the bundle around a little pull it out and throw it to one side, where it can be stacked at the machine or hauled away. To thresh 300 bushels would probably be considered a good day's work with bound Kaffir corn, but perhaps 250 bushels would be nearer a proper estimate, with a twelve-horse-power engine and a suitable separator. Unbound Kaffir corn cannot be handled with the facility that bound can, in stripping it of the seed by the threshing machine, and to thresh it stalk and all is considered hard on the machine and clogs the riddles, making a slow job.

When Kaffir corn is headed after being put in the shock the exposure of the fodder is renewed and the wind is more apt to scatter it.

In this article I have dwelt to some extent on the disadvantages of certain methods, which I deemed necessary to throw light on the more advantageous process of managing Kaffir corn. As to the comparative economy of one method over others, I would say that the Elkhart header is probably as cheap as any machine yet devised that will be found convenient for most farmers to use, and then cut the standing fodder with corn sleds or self-binders afterwards.

The relative cost of the various methods of heading and threshing Kaffir corn would stand about thus, subject, of course, to the various conveniences or inconveniences that any farmer may have and the circumstances by which he is surrounded, based on the cost per bushel:

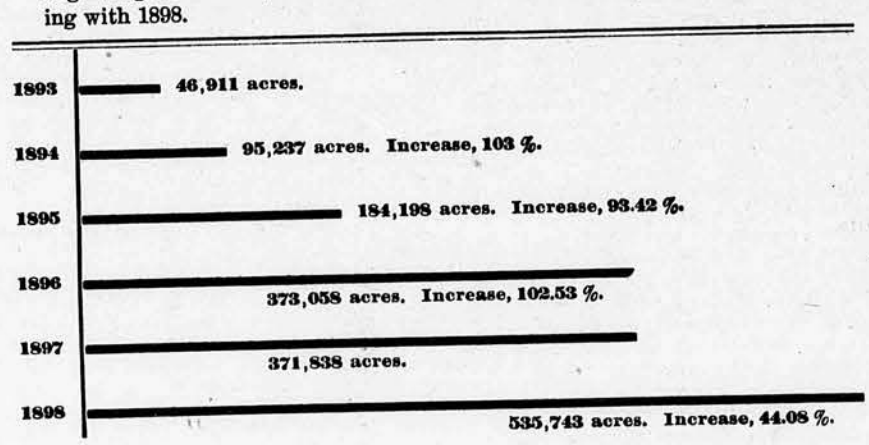
1.—HEADING WITH THE ELKHART HEADER.

	Cents.
Cost of heading per bushel	1½
Hauling heads to machine	1½
Threshing	2
Delivering grain into bin	1
Coal for engine	½
Feed for men and teams	½
Total	

KAFIR-CORN IN KANSAS.

A NEW PLANT, GROWING IN POPULAR FAVOR.

Diagram showing the comparative acreages of Kafir-corn annually for six years, beginning with 1893 (when the crop was first returned by assessors) and ending with 1898.



F. D. Coburn
Secretary State Board of Agriculture.

Salt Rheum

Intense Suffering—Could Not Sleep —Cured by Hood's Sarsaparilla.

"I had salt rheum on my arms, which itched intensely and kept me from sleeping. The skin on my hands would crack open. My friends believed I was suffering from blood poisoning. I decided to take Hood's Sarsaparilla. I did not see any improvement with the first bottle but continued with the medicine and after taking five bottles I was completely cured. My hands are now as smooth as I could wish." A. D. HAGEY, Elroy, Pa.

Hood's Sarsaparilla

Is the best—in fact the One True Blood Purifier. Sold by all druggists. $1; six for $5.

Hood's Pills are prompt, efficient and easy in effect. 25 cents.

2.—HEADED BY KNIFE ATTACHED TO WAGON BOX.

	Cents.
One man and team	2
Two men to lift Kaffir corn to header	2
Threshing	2
Hauling grain	1
Coal	½
Pitching heads from stack to machine	1
Feed for men and teams	½
Total	9

3.—BOUND KAFFIR CORN.

	Cents.
Threshing	4
Hauling bundles to and from machine and stacking them	3
Hauling grain	1
Coal	1
Feed	2
Total	11

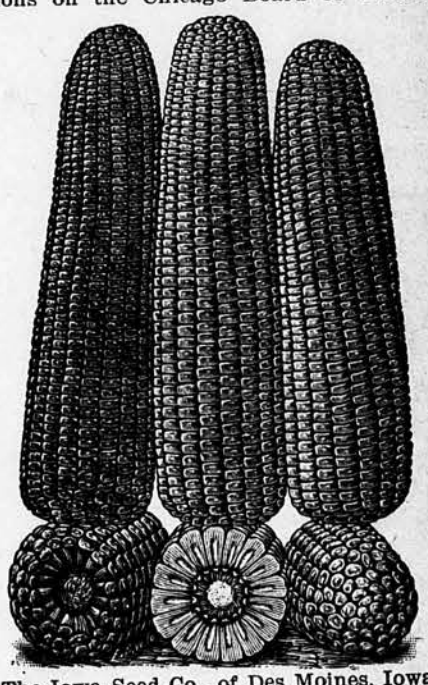
It will be seen from these calculations that the cost per bushel for heading and threshing Kaffir corn is much less for method No. 1 than for either Nos. 2 or 3. In the case of Nos. 1 and 2, the fodder still remains in the fields exposed to the weather, while No. 3 is in the stack. The ground is cleared of roughage and is ready for farm operations, such as early plowing for oats, etc., and the field will not be run over to get feed in muddy times. When threshed out of the bundle, the machine does not appear to crack the Kaffir corn as badly as where it is headed beforehand. The cost of heading and threshing would appear to range between 5 and 15 cents per bushel in the very best and worst instances, and this expense is one of the chief drawbacks in raising Kaffir corn in comparison with Indian corn. Considerable loss occurs in feeding Kaffir corn in the head by shattering, and it requires too much room for storage when not threshed. But with all these drawbacks, it is a crop that the successful farmer of the future must reckon with and determine for himself which pays best, corn or Kaffir corn.

ALBERT ROGLER.

Matfield Green, Kans.

A Comparison.

It has been stated that Joseph Leiter added $6,000,000 to the value of the 1897 wheat crop while it was still in the hands of the farmers by his manipulations on the Chicago Board of Trade.



The Iowa Seed Co., of Des Moines, Iowa, claims to have added $2,000,000 per year to the yield, quality and value of the corn crop by the new varieties of corn which they have introduced during the past ten years. Which is the greater achievement? This year their new variety, the Profit corn, will be found advertised in another column and a free sample is offered to everyone who mentions this paper in writing.

The Stock Interest.

THOROUGHBRED STOCK SALES.

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

MARCH 3—Grant Hornady Live Stock Co., Fort Scott Kas., Herefords, at Kansas City, Mo.

THE DUAL-PURPOSE COW.

By J. F. True, Newman, Kans., read before the Kansas Improved Stock Breeders' Association, January 10, 1899.

This is an age of specialists, and it is well for us who now live upon the earth that it is so. We have specialists in every line of mechanical work, in the arts, in the professions, and in the dairy business, and it is well for those who consume the products of the dairies, and especially for the specialists who manage those dairies, that it is so, as the high achievements in the art of butter- and cheese-making could never have been brought to its present consummation by any other than specialists.

But how about specialism in farming? How about one special crop and no more, though it be the best crop we can possibly raise? How about keeping only one kind of stock on the farm—our pets, our choice—to the exclusion of all other stock, though we may sacrifice many products of the farm because we have surplus feed which is not marketable, which our special stock will not consume? Yet this is just what the dairyman with a special-purpose breed of dairy cattle will do, and will insist that all others can profitably do the same thing. He, perhaps, is wise in keeping this one-purpose breed, but are others, differently situated, with less skill in his special line and with different tastes and inclinations, wise in following his advice? These specialists in dairying, and writers on this subject, publishers of dairy papers especially—many of them—insist that there is no cow that can profitably give birth to a calf of the beef type, one that is worth raising for beef, and at the same time be fairly profitable as a milker. With such we take issue, and claim there is a dual-purpose cow, and that her name is Shorthorn. In choosing our farm stock there is a vast field for selection, as between the best in any particular breed, whether it be dairy stock or beef cattle. That eminent authority on dairy matters, Governor Hoard, says on the subject of selecting cows from the dairy breeds: "In our opinion there is quite as much room for choice within any breed as there is between breeds, and hence it is not enough to adopt a particular breed." And another, O. L. Gregg, superintendent of Minnesota Farmers' Institute, says on the same subject: "Without question the intention was to have registry in the breed books a guarantee of quality, but experience has taught many a man, to his sorrow, that in buying pure-bred cattle he had bought pedigree without quality." He continues: "It is not a slander to write that cases are not infrequent where a pure-bred registered sire has bred the quality of native stock down in dairy qualities." Mr. Gregg goes on: "A good judge of cattle can to-day select native cows that will perform better in the herd as producers of butter and milk than the average grades of any of our improved dairy breeds."

Now, the above is not written for the purpose of disparaging the dairy breeds, but merely to show the vast range of capabilities for the work desired in any breed. If this wide range of opportunity to select better or worse dairy cows from the dairy breeds or native stock exists, why may not the same advantages be gained by a wise selection from the Shorthorns for dairy purposes? Secretary of Agriculture Wilson says: "A good butter cow is a good cheese cow, and she is found in all breeds that are milked regularly." In a late letter from Prof. C. C. Georgeson, he says: "The Shorthorns have until recently been the leading dairy cattle in England. The advocates of the use of special dairy breeds have frequently alluded to dual-purpose cows as a delusion and a snare. Do you think those English farmers are stupid enough to milk 'delusions and snares?'" My proposition is, gentlemen, for the general Kansas farmer, the milk products and the calves combined will, in a series of years, net a greater income than the milk products alone, if he selects and develops his stock wisely, and that the Shorthorns are the best cattle from which to select such cows. The foods for raising these calves are very abundant and cheap and will remain cheap. The milk products are low and likely to remain low. The calves, if properly bred, are high—very high—and likely to remain high. The one market—Kansas City—this year has sent 538,226 cattle to farmers for feeding purposes, a large per cent. of which went to Kansas farmers. The country to which we laid tribute to get these feeders and stockers commenced in Wisconsin and extends through Ohio, Indiana, through the Atlantic States around by the Gulf, on through and beyond the Rocky Mountains and around to Minnesota. Why not raise them at home, and raise vastly better ones, and utilize some portion of the grasses and rough feed that is yearly wasted on most every Kansas farm? If it can be shown that there are individuals innumerable among the Shorthorns that are good producers of a good quality of milk, and also good stayers at this production, what observant man for a moment will doubt man's ability by wise selection and development to build up a reliable and profitable combined dairy and beef stock from this breed of cattle?

Prof. F. B. Linfield, of Utah Agricultural College, says: "In my work as a teacher of dairying and animal husbandry and in talking at farmers' institutes all over this State (Utah), as also in Ontario before I came to Utah, I found the dual-purpose cow was (and is) always a factor to be considered." He continues: "While on a tour among the winter institute meetings in Ontario in 1893 I found the grade Shorthorns very favorably commented upon. I learned that very many of these cows that are at work on the dairy farms were producing calves, the quality of which a lover of good beef steers liked to dwell upon. I found the conditions in these States not very different from those in Canada. The foundation stock was largely Shorthorn grades. One Shorthorn grade cow in the college herd has produced 327 pounds of butter in one year, while another produced 163 pounds butter fat in four months.

The Iowa Agricultural College had a collection of Shorthorn steers at the Omaha Exposition that attracted no little attention. There were ten head in all, five of them pure-bred and the rest grades. The average weight of the ten head just before they were loaded at Ames was 1,425 pounds, and according to the exhibition classification they all entered as yearlings. None of them would be 2 years old until the last week in October. The three pure-bred steers (including the winner of the sweepstakes) that were bred on the college farm were out of cows with butter records averaging 300 pounds. One of the good ones of the bunch was out of a pure-bred Shorthorn cow that, last year, when 10 years old, made a record of 312 pounds of butter, and her steer calf weighed 1,500 pounds, though not 2 years old until October 19.

It was not the intention to fit these steers for the Omaha show, as the Christmas market was kept in view while the experiment in feeding was being conducted. Hence they were not as far forward as they might have been if they had been intended for an earlier market. In the Shorthorn class they won first and second prizes. The steer that won the premier position was bred at the college farm and was out of one of the matrons of the herd. He was very smooth and weighed 1,440 pounds.

In a report of two Shorthorn herds in England, one cow gave 1,482 gallons of milk in fifty weeks, or say about 11,856 pounds. Another gave 1,462 gallons in forty-eight weeks. One cow had given an average of over 1,000 gallons a year for six years and two others for five years. Summarizing the results from between eighty and a hundred cows for a continuous period of eleven years, the average yield per head per year was about 630 gallons. Shorthorns will give milk if they are encouraged to do so.

Miss N. G. Thompson, Wellsville, Kans., a patron of the Wellsville creamery and cheese factory, sends an excellent report from a herd of ten cows. Total milk for the year 61,075 pounds, total butter fat 2,544 pounds, making an average test of 4.16 per cent. The income from the herd stands as follows: Received from sale of milk, $402.06, received from sale of calves, $14.50, value of calves on hand, seven at $20, $140. Total income from herd, $556.56. This makes an average income per cow of $55.65. The average yield per cow was 6,107 pounds of milk and 254 pounds of butter fat, equal to 298 pounds of butter.

Miss Thompson writes as follows:

"Our cows are all Shorthorns except two, which are half Jerseys.

"During the winter their feed consisted of good timothy and clover hay, with corn on the cob, and grass during the spring, summer and fall. Had they had extra care they would no doubt have done much better.

"For shelter from the cold and storms they have a shed which is not tight enough to be very warm."

I take the following from a late number of the Breeder's Gazette:

"To The Gazette:—I wrote you some weeks ago that we were to test our Shorthorn cow, Elvira of Browndale 3d, a week or two, for butter, which we did, with the following results: I put her onto a feed of one-half bran, one-half barley meal—about four quarts of the mixture twice a day—together with grass, with no preparation, and she gave 306½ pounds of milk in seven days, from which was made 17 pounds of very nice, hard, yellow, butter. Now, you see, she was not handled properly to get best results. She should have been fed on corn meal and bran for a long time before trial and that feed kept up. Yet I feel sure she can produce 20 pounds of butter in seven days easily, with proper treatment, which, I thnik, does away with the theory many breeders have that milk and beef cannot be combined. You will remember her at the Columbian at Chicago as the best beef cow in my herd, winning over Victoria of Glenwood 8th. I consider her the most wonderful Shorthorn cow I know of to-day. She is very strongly bred in the Bates blood, but a low, blocky, clean-cut dairy cow, as well as of the beef type. I have bred many Shorthorn cows that have made from twelve to thirteen pounds of butter per week with no preparation. I have several in my herd now that will do it.—H. F. Brown. Hennepin County, Minn."

The following shows, as does the last item quoted, that it is not necessary to totally ignore the register qualities for a good beef animal in order to get a profitable milk yield:

"One of England's prominent breeders of Shorthorn cattle—Mr. Stratton of The Duffryn—favors The Gazette this week with an expression of his views upon the subject of how to maintain the standard of that double-purpose breed. He advocates the development of dairy qualities as well as fleshing capacity, and in the light of the wonderful performance of Mr. Brierly's Jewell 2d at the English shows this year it is evident that our cousins of Britain are not losing sight of the true mission of the Shorthorn. This cow after winning a prize in a dairy-cattle show went to the Royal and headed her class against the highest-conditioned cows of the year. America has possessed many such profitable cows, and The Gazette believes that in the near future their number will be largely increased. Shorthorn breeders have only to pursue a judicious policy of selection and handling in order to develop rent-paying 'double-deckers' in every herd."

I will give you another of the same import:

"To The Gazette: I will send in a report of what one of my dairy Shorthorn cows, Daisy Dean 4th, has done. She was shown when a 2-year-old at several of the leading county fairs and took first in class and sweepstakes over all beef breeds. When a 4-year-old she was tested for her milk and butter qualities for ten months commencing the 28th of December. She gave 8,075 pounds of milk from which was made 432 pounds of butter. From January 6 to 17, a twelve days' test, she gave 449¼ pounds of milk, from which was made 27½ pounds of butter. She has produced three fine heifer calves, which I expect to make fine milkers as well as good beef animals.—John F. Stover, Montgomery County, Ind."

C. F. Curtis, of Iowa Station, recently purchased a pure Cruickshank bull to head his herd of milking Shorthorns, and stated at that time for publication that he did not think it necessary to depart very far from the beef type in Shorthorns in order to secure good milkers.

The dairy-bred Shorthorn cow, Kittie Clay 5th, belonging to J. K. Imes, of Granville Center, Pa., in January, 1895, gave in seven days 273 pounds of milk, which made 12 pounds of butter. She is of the same family as the two Shorthorn cows, Kitty Clay 3d and Kitty Clay 4th, that made such good records at the Columbian Exposition. The Breeder's Gazette is authority for the following statement: "The thoroughbred Shorthorn cow, Roulette, owned by Green Bros., of Vermillion County, Ill., during seven days—January 19 to 25 inclusive, 1896—made 19⅝ pounds butter. What of the calf crop from our dual-purpose cows? We assert that three-fourths-blood Shorthorn grades are worth to-day in Topeka $25 each at one week old, or $5 more at 4 months if judiciously fed on other feed than whole milk after two weeks. These figures may seem high to some of you, but let us see about it. The Capital Syndicate Co., cattle breeders, down in that, to some, desperate State of Texas, sold their entire steer calf crop from one pasture, with 10 per cent thrown out, some 500 head, at $24 a head, and delivered them last month—and many other sales have been made not so far below that price. Now, consider the value of those skim-milk Shorthorn calves from Iowa Agricultural College which I have mentioned. There is no question about the accuracy of figures sent from the experiment station presided over by Prof. F. C. Curtis. Those steers weighed 1,425 pounds average before leaving Ames, early in October, and not one of them was over 2 years old and we may presume some of them were much younger. They are worth anyway 5½ cents, which equals $74.80 per head. What can Kansas farmers put their feed into to better profit than to raise such steers? The process for getting such stock is plain and not very expensive. Two or three crosses by thoroughbred sires, properly selected, on common cattle is the way, as two or three crosses with good keep will assume a very high type of beef animal.

Public Sales--Should They Be Abandoned?

By W. P. Goode, Lenexa, Kans., read by O. P. Updegraff, before the Kansas Improved Stock Breeders' Association, January 11, 1899.

This, it seems, is a very great question, so fraught with arguments for and against, that it certainly behooves every breeder to stop and study the problem thoroughly in all its bearings to be sure no mistake is made in the final verdict or answer. For, answered it will be, either in the common course of business events as the year passes, or by the action of the majority in convention assembled, and afterward executed as per agreement.

It has been said that, with all the work done by the breeders of pure-bred stock, together with a fair charge for expenses in raising and fitting, and all advertising bills fully paid, the stock thus sold, and every dollar collected, would not pay the expenses. If this be a fact in the business of the breeders in the past, is it not folly to persist in such a policy of business? It will only be a matter of time when all so engaged will have seen the end, even though it comes to us like death and taxes—one at a time. "The mills of the gods grind slowly," but, nevertheless, they are sure to grind.

So I take the stand that the breeders of pure-bred stock are the prime factors and greatest benefactors to the great commercial wealth of the world. To some this may seem overdrawn, on first thought, yet it can not be gainsaid. To realize at a glance its truth and great importance, let us suppose that every pure-bred animal in the world, by edict of the law, be slaughtered in one year's time; it is impossible to realize the wreck to the world's wealth and commerce. Hundreds of years would not find the loss repaired, and the same business tact and sagacity evinced as at this day. The same comparison and edict applied to all the cereals, horticultural and floral specimens of the earth, what a sad spectacle this world would then present. So, in a small degree, we can see the great importance of our industry, as breeders of pure-bred animals, to sustain the greatest constituent of the commerce of the world. The greatest, because all scientific research finds that a vegetarian people are an effeminate people, and, on the other hand, those that combine meats with vegetables and fruits are the foremost and most vigorous people of the world, from every standpoint.

But I have digressed from the question, some may say. Let us see: In order to realize how much is being lost in an enterprise, we must know its real worth from a business standpoint, and from the above view we see the great worth in it to the world at large, and it should be remunerative to those who carry it on. If the breeders fail to make it so, where is the fault, and on whom does the blame rest? It rests on ourselves, and the question, "Shall public sales be abandoned?" applies to all breeds of stock, I think, and it is not for me, individually, to answer in the affirmative or negative.

In years gone by, when the Shorthorn breeders were in the zenith of good prices and the industry was flourishing, the public sales of cattle grew more and more numerous, until the collapse finally came to them. It is the prediction of some, who ought to know, that it will be just so in the end with two other breeds of stock. Hear what a prominent Missouri breeder of Poland-Chinas says of the future of the breed: "It has been boomed and Gilletted until there is little left but history, which I wish could be hung on the foreheads of about ten score of scoundrels, to remain there during the remainder of their natural lives, thus branding them with shame and dishonor that is naturally theirs." Now these dishonest practices by such men, and the attendant extravagances in all details to carry out such sales, sets in motion a custom that will not survive the scrutinizing approbation of a general public on whom we have to depend for the success of our industry as breeders.

The number of pure-bred swine can be increased to such proportions in so much

shorter time than cattle and horses, that we who are handling the hog are sure to come to the landing-place soonest. So I think it behooves all breeders of pure-bred stock to determine in the near future what is the very best business custom to dispose of their surplus stock at a fairly remunerative price, and satisfaction to customers in the bargain, for it takes this to sustain the continuous industry.

I would be glad to hear from others of our breeders through our great State medium, the Kansas Farmer.

DISCUSSION.

Mr. Cheney: In order to start the ball rolling, I will say I have been in other States besides Kansas, where the swine breeders advertised a public sale and nearly every swine breeder came to that sale and lent his influence toward making it a success. I wish I could say as much of Kansas.

Mr. True: I have not any comments on the paper for or against public sales, but I will make a remark on the chairman's statement. He rather insinuated that the public sales depend upon the breeders of the class of stock being sold. I think, Mr. Chairman, that that is an indication of booming by that special class of breeders. I am simply criticising the chairman's insinuation in that he would have us believe that the sale of pure-bred stock depended upon the breeders of that class of stock, as I think it is booming, rather than legitimate business. And therefore, gentlemen, I trust that the time will not come when the success of sales will depend upon the breeders of that class of stock, but rather will be based upon the bidding of men who are common farmers and want that blood to breed up with.

Mr. Patterson: Our farmers can not go a long ways to attend these sales. If we are to depend upon the farmers to use that kind of stuff to breed up with, we will have to be able to ship them just what they want when they send to us for it. The great objection there seems to be with public sales is, the expense, and this is a very serious objection. The common farmer would have to go a long ways to some of these public sales; this would not do. If only he could order what he wants and get what he ordered, that would be all right. That is the only way that I can see through which we can get what we need, and through which the breeder can get rid of his stock without the expense of public sales. If there is a breeder in this State who does not do the honorable and square thing by his customers, I think there ought to be something done to protect us. But what are we to do, and how are we to defend ourselves and protect ourselves? As I intimated before, I have been, in two or three cases, unfortunate, but I do not know a remedy for it.

Mr. Hubbard: I do not think I will be able to express my views, but I differ a little with Brother True. I not only think it is the pretty thing to do, but it is the nice thing to do, and the proper thing to do, to turn out and assist your brother breeder when he has a public sale. Show your good will and confidence in him by attending his sale; he will be glad to give you the grub you eat for your sympathy. Just stand round there and do some kind and charitable Christian act, during the time that breeder is in distress. Loan him your assistance for that day; it is one of the nicest things you could do. Do like the boy did down in my county, when the people came around to raise some money by subscription. They came to a certain house and asked if the man of the house was at home, and a little boy about 10 or 12 years old put his father's name down with a subscription for $25, saying that his father was not at home; and when they came in later, he told them that he had loaned those people father's influence $25 worth. Go to your fellow breeder's sale, buy an animal and take it home. It won't be any more than a just act, the nice thing, the pretty thing to do. The breeders have done more to build up the grand old commonwealth of Kansas than any other class of men in the State, and they ought to be encouraged.

Mr. McCoy: I will say a word or two in defense of the breeders of Kansas. At the present time I do not think there is much call to say that they are all dishonest. We have plenty of breeders all over the State; breeders of all kinds of stock are scattered universally all over the State, and I think, as a whole, there are just as honorable men in the breeding business as any other line of business. I think that the State ought to look to the interest of the breeders, for I think they have done just as much for the State of Kansas as any other enterprise. Now, in regard to booming some sales. There is no doubt there has been a little of that business done, but that kind of business ought to be found out and punished accordingly. If that kind of a man is not punished by the law, he will soon punish himself by ruining his business. I think these sales deserve to be patronized; as that gentleman says, it is a duty that belongs to every man who is a lover of good stock. I think it has been said here that a man in making a sale reaches the greatest point in his life, and it does him good to have a brother breeder step in and show him his good will and influence. It is not a scheme on his part to make money; he comes because he wants the sympathy of that man's heart; but outsiders will say: "Now they will divide." I want to tell you that that is a grand mistake, gentlemen. The sale does more for the benefit of keeping up first-class stock than anything else. Support the public sale.

Mr. Glick: The question of booming is one about which many of our people deceive themselves, and in that connection I will say that I don't think there is any necessity for any gentleman in Kansas being deceived in the buying of a male pig; for if Kansas is not in the front ranks of the breeders of fine Poland-Chinas and Berkshires, I don't think you can find them in any other State in the Union. At the Omaha Exposition there was a meeting of half a dozen swine breeders; they were comparing their hogs with others, and I say that there is no necessity for any man going beyond the limits of the State of Kansas, if he wants to buy good hogs to use on the farm, or to use in breeding up his own herd. It is the same way in buying bulls. Some men think, though, that they must go to Illinois, Kentucky or some other place to get a good bull. I had a neighbor who thought he could not get anything good enough in Kansas, and he went over to Missouri and paid a big price for a Missouri bull. He shipped him here to Kansas, gave him a trial, and found he was no good as an individual. This bull had a great pedigree. I was selling a lot of cattle to a ranchman, and this man who had gone over into Missouri and got this fine animal over there, came around and wanted me to turn it in to the ranchman along with my cattle for $50. There is absolutely no need of breeders going beyond the limit of the State of Kansas to get good hogs, or good thoroughbred bulls, either Shorthorns, Herefords, or the black cattle. But here is the question that comes up with every man—many differ in their judgment of that animal; one man looks at it in one way, and thinks it is a fine animal from his point of view, and another man thinks it is entirely different from his point of view. It applies to the hog, it applies to the cattle, and I guess it applies to horses. I don't know very much about horses, though; I always had to go behind them, so I do not know very much about them. I do not believe it is good policy for any man to talk about buying a male without going to see him; it may cost a little something, but I tell you that the man that is not willing to go and pick out the male that suits him and the male that he wants, has no right to kick about the animal when it comes, if it is not anything above the scrub type. You can go and pick it out, compare it with a dozen or hundred others that you see at different places, and in that way you can get precisely the animal you want. I was unfortunate in losing a bull last year, that I thought was the best one in America. I went to see other herds. I did not wait for the sales, even. I visited a good many herds before I found the animal that I wanted; I spent quite a little bit of money in traveling around that way, but I think it was money well spent. I had a neighbor, some years ago, who sent clear to Ohio for a Poland-China hog. At the same time he had a neighbor within four miles of him that raised very fine Poland-Chinas, but this man had to send to Ohio for his hog. Well, the gentleman down in Ohio said that fellow is away out in Kansas and don't know what a good pig is, and, when that animal came, I don't believe he would compare with half the scrubs in Kansas to-day. This sending away for a hog is entirely different from going to either Messrs. Cook, Irwin, or Hubbard, and him taking you out to the pig-pen and pointing the pigs out to you. In this way you get the kind of an animal you want, and a good one, too; and when your neighbors call, you show them the pig, the kind of a hog you got, and you tell them where you got it. But if it comes from Missouri, they don't care anything about it. It is no advertisement for the State of Kansas and no advertisement for the breeders of your State. Of course, this does not apply in all cases. A man may want to use a particular strain of hogs or cattle, and he may not be able to get that in his neighborhood. That only applies to men who are professional breeders, and they can go away from the State and get what they want and they generally know what they want. The ordinary farmer does not know that, and if he does, it is not necessary for him to go to that expense. He can trust a breeder that lives with us, that is our friend, that comes here every year to shake hands with us. That is the man we can trust every time.

Mr. Babcock: I want to emphasize the Governor's remarks on that line. I don't pretend to be a very good judge of animals of any kind, but I do not use anybody's judgment but my own. I generally know what I want, but I cannot tell a man in a letter just the kind of an animal I want, and when I buy an animal I am going to buy the best kind I can, but I am going to find them before buying.

Mr. Cheney: Now, with reference to public sales. We don't always know how the public sales are going to turn out, but it does seem to me that the public sale has been, and will continue to be, the greatest educator in the State with reference to breeding. I think it is one of the best educators in the line of stock breeding that can be carried on.

Mr. Daughters: I would like to ask Mr. Glick if he was able to find his ideal animal without leaving the State, the one that he wanted.

Mr. Glick: After overlooking twenty-five herds, I finally left the State.

Mr. Daughters: You tried hard enough, anyway.

Mr. Glick: Yes, sir, and I got just what suited me; he is 3 years old and weighs 2,200 pounds to-day.

Mr. Raymond: The question that enters into this matter of public sales is this: To my mind, there is a difference between the sale condition and the general working condition of an animal. A man who is going to have a sale, advertises it, feeds his stock up and gets them in sale condition; but when you go to a man's pen to buy a pig, and he has not advertised for public sale, you generally get the stock that is in the working condition, and, to my mind, the sale condition is detrimental.

Mr. Herrington: I have been listening to this discussion for some time, and I am inclined to think we have got it narrowed down so that we understand that these farmers and small stock breeders should not go out of the State to buy their individuals, but that there is a class of experts who have to go out of the State to find their ideal animals. I am not surprised that my friend Glick had to go into Missouri to find what he wanted, but I am sorry that he found it necessary to leave the State to get his ideal bull. Now, I am satisfied that the breeders of our State are honest men. In the first place, Glick has been a breeder for twenty-five years, and he was so honest that we made him Governor, and Senator Harris was so honest that we made him United States Senator, and I am inclined to think that we will run our friend McCoy for some office, if for nothing else but state senator. And there is my friend Westbrook; he is growing. He used to come to these meetings and did not know anything about Jersey cows and heifers, and now he knows so much that he is breeding fine horses, and what did they do for him down in Kansas?

Mr. Westbrook: What did they do for Hubbard?

Mr. Hubbard: They elected me road overseer.

Mr. Herrington: Kansas has to-day as good stock breeders as I know of. At the Omaha Exposition I took pains to go around through the herds and inquire as to where they came from and who owned them, especially in the fine stock, and I was proud of the exhibit Kansas made there in fine stock. The Herefords that were there from Kansas were superior, I think, to anything I saw on the ground, and the hogs were the same. I was truly proud of the exhibit Kansas made there. There is no use going away from home for hogs, for all good breeders advertise in such good papers as the Kansas Farmer; but some of those fellows who advertise in those papers have not got the kind of stuff that they advertise. Four years ago a man came to me and inquired about a man that advertised in my own county and advertised in the Kansas Farmer; said he had bought a hog from him, and it was worthless. I told him I did not know that man. I just simply would not own up that we had any such a man in Kansas. I want to say to those men who run newspapers, that you fellows want to be a little more careful how you let men advertise in your paper. You want to know that they are the genuine stuff before you take their advertisements. We have better stock to-day in Kansas than they can raise in old England, herself, and our stock breeders have helped to make this great State what it is, but you newspaper men want to be careful how you let these men advertise fine stock who are not particular about breeding.

Mr. Comstock: I am inclined to think that there is some misunderstanding here. It was in regard to the farmers as breeders of Kansas. I did not understand him to mean that we should go in on boom prices regardless of the animal bought. A breeder may offer, in his lot of cattle or hogs, two classes of animals—one that the farmer can buy and is of just as much value to him as something that a breeder will not particularly want. The Kansas breeder can go there and get something that he can cross on his herd and be a great advantage to him, and it is the same way with the Kansas breeder; and it will benefit the breeder who has the sale, and in that way we can support each other. You can afford to give your brother breeder a certain price for an animal, that has certain qualities, even though you do belong to a different class of breeders. I am thinking now of legitimate purchasers. Frequently I go to a sale and I do not buy a gilt or a male to sell to some one else, but I do buy occasionally when I come across an animal of different strains to use in my herd. You do not need to go out of the State unless you want special lines of breeding. About the animals that are put in condition at sales, I do not believe there is anybody that would want to buy an animal that could not be out in good condition at a sale. Suppose you go to a sale, and a man said: "There is a class of animals I cannot make fat, but here is another variety that are ready for the market early; they are ready in a very short time." You have to feed those cattle and feed them well, so that you can show just what kind of an animal they are when they are ready for market, or when they are put into condition for sale, or to take to a fair. You will have to feed them that way. There is this in connection with that, and I do not claim to be a physiologist either, but if you want to make the fattening qualities of an animal and develop them thoroughly, you must feed and breed for it. You have to produce that quality of animals that take on flesh rapidly and show the skill of the breeder, and to do that successfully you have to breed and feed from generation to generation and keep it up, and the good breeder never permits that condition to change if circumstances do not force him to. I have no doubt that the progenitors of the Texas cattle were good, for when they were turned out on grass they were four and five miles from water, and in traveling back and forth had to travel eight; then add twelve per day in order to get water and grass. Now, it would not take long to destroy that animal's ability to take on fat, and to change his physical

The public schools teach almost every known branch of study but the one most important branch of all. What does it profit your son if he has an intellect like a Newton, and is mentally an Admiral Crichton, if he has a weak and puny body and not the remotest idea of how to care for his health? A boy should be taught from the start that his health is his most precious endowment. Without health, all the talent, all the genius, and all the ambition in the world are worthless. A boy should be taught that success in any walk of life, that happiness, and life itself, are dependent upon his care of his health.

When a man feels that he is losing his health and vigor, when his cheeks no longer glow, his step is no longer elastic and the sparkle of health is no longer in his eyes, he should work less, rest more and resort to the right remedy to restore his bodily vigor. Dr. Pierce's Golden Medical Discovery is a natural medicine—a scientific medicine. It does no violence to nature. It works with and not against nature. It promotes the natural processes of secretion and excretion. It imparts vitality and power to the whole system. It gives plumpness and color to the cheeks, sparkle to the eyes, steadiness to the nerves, strength to the muscles and the animation of health to the whole body. It makes the appetite keen and hearty. It is the great blood-maker, flesh-builder and nerve-tonic and restorative. Medicine dealers sell it and have absolutely nothing else "just as good."

"I was afflicted with pimples and boils, and running sores on face and neck," writes Robert S. Wert, Esq., of No. 615 Galloway Ave., Columbus, Ohio. "I took Dr. Pierce's Golden Medical Discovery and 'Pleasant Pellets,' and was cured."

Constipation is the commonest beginning and first cause of many serious diseases and it should always be treated with Dr. Pierce's Pleasant Pellets used in connection with the "Discovery." These are the most perfect natural laxatives and permanently cure.

condition so that it would take you years to get him back into his original condition. Some years ago I was down in Mexico. I met some gentlemen there that were talking about a fat beef. One gentleman said: "Why, it was the fattest and finest beef I ever saw; there never was such a fine beef." I said, that might be nice beef for you, but I don't like it. It was just like your two hands put together—one side fat and blubbery and the other side lean meat, which was just about as juicy as a bunch of prairie grass. Now that is not the kind of beef people are raising at the present time. They are raising beef that has the suet all through the lean and the lean and fat are mixed together, and it is just that which constitutes the value of the well-bred animal over the scrub; and to accomplish that thing we have got to feed well and produce that quality of an animal, the one that takes on flesh rapidly, and locates the place where it is the most valuable, and you can not do it with the scrub hog or scrub steer.

Delegate: Do you consider that you got the best results by forcing them?

Mr. Glick: I never got my cattle too fat. That is the argument of a man who won't feed his stock, and always has been. You may go to any breeder's farm, and if feed is plenty, and circumstances do not prevent him from using it, and he has poor cows and poor bull—poor in flesh I mean—you can bet he is on the road to scrub cattle. The fat bulls and fat cows are the ones that raise your best calves. My experience is that you can take a poor, scrawny animal and breed up and get fat animals from them from the second or third cross. I want to differ with my friend Herrington, over here, and if he undertakes to reply to me I will tell a story on him.

Mr. Updegraff: I don't want to be too bitter on the newspapers, as some of these gentlemen here to-day. I sold about forty-six head of swine here last winter—and you boys were all here—for $4,100, and my expenses were not over $200. I think that we have wandered away from the subject of this paper, and, Mr. President, I would like to know "where we are at." Mr. President, I see a gentleman here is the editor of a paper. He is doing some hard thinking. It is Mr. Wiley, of Salina, and I would like to know what he thinks about these public sales.

Mr. Wiley: It is the first time I ever attended a meeting of this kind and I would prefer not to express my opinion at this time.

Mr. Heath: I want to correct one false impression about the newspaper robbers. They don't live in Kansas. I want to say this about the public sale business. If you think it is a benefit to the papers to run an advertisement of a public sale, you are away off. I would rather have a man advertise the year round. I would rather have fifty-two chances at his advertisement than two or three.

Mr. Hubbard: Now, we have a man in our midst who has been shot, and killed, and run over by the band wagon. I would like to hear from brother Kirkpatrick.

Mr. Kirkpatrick: I had not calculated to make any discussion upon this paper. I am glad to hear the secretary get up and try to get you to realize "where you was at" on this paper. I did not hear Mr. Goode's paper. I have been holding public sales, however, for the last six or seven years. I have adopted that plan of selling my hogs. I sell my sheep at private sale. I have no reason to complain at the result of my experience in holding public sales. Six years ago it was a little difficult to get up interest in a public sale, but the interest has grown steadily, and each sale has been better than the previous one, except the last one, which occurred this fall during what I hope is to be but a temporary depression. It is pretty hard to tell or decide which is the best way to dispose of one's stock. In England they have adopted the sale system, and I think have been following it for a great many years. They do not do the way we do over here. They do not spend so much money in the preparation for their sales. In this country it is a new business; it was a new business with me, up until six years ago, and at that time I did not have anything to guide me. I did not know how to do it, but I have been stumbling along, done the best I could and have gotten some experience. Of course, there have been some mistakes made, and there have been some sales made that would be no credit to the sellers; there is no doubt about that. There has been more suspicion than there has been cause for suspicion. There is a class of men who are always looking for a nigger in the wood pile, and naturally they are suspicious. They are not only suspicious of the man that makes the public sale, but they are suspicious of the man from whom they make a private purchase. The public plan of selling has many advantages, but, as to its abandonment, I cannot agree with those who advocate that theory. I think it gives every man the opportunity to see what he is buying, and I think that is a good thing to do. I have bought Poland-Chinas at private treaty, and have sent East for them, and sometimes I have been disappointed with my purchase and sometimes I have been pleased. I think, probably, that I was as much at fault in one or two of the cases where I had been disappointed as the gentleman who sent me the individual. I think there are so many types, so many ideals in all thoroughbreds, that it is very difficult for a purchaser to tell everything that he wants, and I think that a buyer should make his own selection. I sold a couple of rams on the same day and at the same price. One of them was sent to a man in Nebraska, and the other was sent to a Kansas breeder whom you all know. I had to go away the day they were shipped, but I had selected the two rams, and I called in my son and showed him the two, telling which one I wanted sent to the Kansas man and which to the Nebraska man. The Kansas man had written that he wanted to show his ram at a local fair. The Nebraska man had not said anything about his. He simply said he wanted a good ram. When I went back on the evening train—and the trains pass our station—I saw the rams that my son had brought down to ship, and instead of sending the best ram to the Kansas man, he had sent it to the Nebraska man. I told him he had made a mistake; that he had reversed them; that the better ram should have gone to the Kansas man, as he had given us a description of what he wanted. Well, as a result, the Kansas man wrote me a very satisfactory letter, but the letter from the other man was very discouraging to any breeder. It was a mean letter, yet he got the best ram of the two. I wrote him that if he was not suited with that one, and would give me a description of what he wanted I would ship him another, or would refund the money. He shipped that one back and I sent him another, and I have not heard from him from that day to this. That is the way it generally goes in regard to suiting customers. That is one reason why I consider the public sale system the best method. The man sees what he gets there and that settles it.

Mr. Cheney: Brother Kirkpatrick, the whole business of breeding thoroughbred stock is based upon confidence. If we have not confidence in the breeder, we cannot buy of him. Confidence is what we need. I see Mr. C. A. Stannard in the audience, who, I understand, has had remarkable success in selling Berkshire pigs at private sale.

Mr. Stannard: I don't know that I have had any greater success than any of the rest of you have had. I have always managed to dispose of everything I had at private sale. As to whether or not I have always pleased the purchasers, they can best speak for that. I have gotten some very satisfactory letters. The letters that have been disagreeable to me have been few. I have always made it my purpose to please my customers, no matter what the cost was. If I could not please them in one way, I would in another. I think that the only way to do, when you find a man you cannot suit, is to let him go. I have suited pretty nearly all my customers with the exception of a man out in Colorado. He is not very well satisfied at the present time. I offered to send him another pig or his money back, but that did not suit him, and he said he had been out the use of the hog and that would not suffice. I have not answered his last letter and do not think I shall. One thing I have done, was to advertise that I had good stuff and in good condition, and another was in sending it out in good condition, sending it out either by express or freight, whichever proved to be the best. I have been moderately successful, I guess, in disposing of my stuff at good prices, and those have been about the methods that I have used in the business.

Mr. Burton: There are two reasons, at least, why I think that the public sale should not be abandoned. In the first place, the man that advertises a public sale makes himself a target, and his neighbors and all others can ascertain whether he is a fraud or a genuine breeder; that is so much in favor of the public sale. Another thing—there are certain seasons of the year that the breeder has, perhaps, a complete supply of stock on hand; then he can issue a catalogue describing that stock, making his announcement that he is going to have a public sale, and by the time that catalogue has gotten around he will have sold several of the hogs. It would be an endless job to write each individual, to write to each of these private purchasers and describe your animal, yet if you issue a catalogue you can send it to each one of your customers for 1 cent. Some might say, "Why can't we do that the year around?" It is simply because the stock is changing. But this is not the case in a public sale. You issue a catalogue and send them to the prospective buyers; they make inquiries as to the responsibility of the man who is making the sale, and if he has anything that you think you want, you go to that sale and buy it on your judgment, and not on the price the breeder has set.

Mr. Updegraff: Before we adjourn, I would like to hear from Senator Stone, who has just come in.

Mr. Stone: I came in a little late, but I gather from what I have heard that the discussion is with regard to public sales. I went to a hog sale, down near the Kansas River. I was a little late. That was not my fault; it was on account of the Missouri Pacific Railroad, which did not run on time that day. I was too late for dinner, and I walked about half a mile through the mud. After reaching the place, I was revived with a little Missouri River water. You all know what Missouri River water will do for a fellow. There was a hog brought into the ring, and I consulted a newspaper man and a hog man as to the breeding of that animal. I was informed, after the sale was over, that that hog was probably worth $7, but they run him up, I believe, to $18. I held the first public sale in Kansas, and consider it the best method you can adopt when you have a large amount of stock to sell. Put your stock in condition, get it ready for sale, and advertise it thoroughly, and generally the man who wants anything of that kind is there at the sale. If he wants an expensive animal, he has competitors who meet him, and run the price up. On the contrary, if he does not want an expensive animal, he has a chance to get it; he meets on a level with all your customers. Of course, some sales are disappointing, on account of a great many things, and I will say this, that while I held the first sale, I have held many sales since that, and have always found that if you had good stock, and treated your visitors well, you never had any fault to find with the prices you received at your sale. I sold ten bulls at a sale of Smith & Wilson's once. They were bulls that I had catalogued for sale privately. I made an experiment that year; instead of simply having my price on my different bulls, I published those prices. I found that that was a mistake. I found that every breeder in the United States sent for my catalogue, not for the bulls but for the prices. I went to that sale with my bulls, and although they did not bring the prices I had set on them, their average was $5 higher than my retail would have been for those bulls. I have found that where stock is well managed, I mean well advertised, either cattle or hogs, or anything, and in good condition, prepared for sale, and you have got a good grade of stock, you generally get satisfactory prices. I have never yet, in all my sales, not been able to tell within a few dollars what the average of any one sale would be, before the day of sale, simply from the correspondence had, and knowing the condition of the cattle, and the mind of the buyers coming. Of course, you can sell privately, but it is a long, tedious business; it runs out through months, and at the end of that time there is not near the satisfaction that there is in the public sale. Of course, in all these things you will excuse me for not going more into detail, as I have quite a cold.

This I Will Do!

I will pay **$100 reward** for any case of colic, horse ail, curbs, splints, knotted cords, or similar trouble, that

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Tuttle's Elixir

will not cure. It is the veterinary wonder of the age, and every stable should have a bottle always on hand. Locates lameness when applied by remaining moist on the part affected.

BALTIMORE, Md., Nov, 2, 1895.

FRIEND HANSON: *I wish you would order me one case of Tuttle's Elixir. Tell Dr. Tuttle that where I have used it on my fast horses it has done all that is claimed; in fact, so far as my experience is concerned, I have failed to find anything to equal it. Yours truly,*

EUGENE LEWIS,
Secretary Riverton Live Stock Co.

Tuttle's Family Elixir cures Rheumatism, Sprains, Bruises, Pains, etc. Samples of either Elixir mailed free for three 2-cent stamps for postage. Fifty cents buys either Elixir of any druggist, or it will be sent direct on receipt of price. Particulars free.

DR. S. A. TUTTLE, Sole Proprietor,
27 Beverly Street, Boston, Mass.

The Gaited Saddle Horse.

By G. G. Burton, Topeka, Kans., read before the Kansas Improved Stock Breeders' Association, January 11, 1899.

He is purely and distinctly American. He is older than the Stars and Stripes and prouder than the American eagle. He is a thing of beauty and a joy forever. He is the beauty and glory of the equine galaxy. He is the crowning type of modern horses. He is the finished product, educated and accomplished, refined and polished, noble and good-mannered, majestic and beautiful; perfect in symmetry and conformation; high-headed, high-tailed, arch-necked, fiery-eyed; dignified and royal; armed with muscle, bone and sinew; endowed with substance, stamina and endurance; lithe-limbed, nimble-jointed and sure-footed. He is the pride of his owner and the delight of his master and the admiration of all who know him. When Richard offered his kingdom for a horse, he wanted a saddle horse.

On the tan-bark he is the chief attraction. When he comes out to make his show in the ring, the ladies pat their gloved hands and wave their white handkerchiefs, and society goes wild with enthusiasm. The men swing their hats and vie with each other in making complimentary remarks about his fine "fore-hand," "rainbow neck," "water-spout tail," "going in form," "handy at his gaits," "legs under him," "keen edge," "pulled together," "well in hand," "lofty as an eagle," "graceful as a swallow." Among them are Deweys, Sampsons, Shafters, Sigsbees, and McKinleys, and the ladies even recognize among them Hobsons.

Possibly some of our fellow breeders of other types may say that the foregoing tributes are extravagant, and that his characteristics and virtues have been highly magnified. Form his acquaintance, analyze him, see him move, and you will find that all of these qualities to him rightly belong. Yes, and more too. The foregoing outline fails to do him justice. His sphere is not confined alone to the pig-skin, but he is also an all-purpose horse and a roadster, safe and speedy. (If my memory serves me right, the most speedy horse on earth to-day was sired by a saddle horse.)

Whence comes this great horse, the embodiment of all the desired attributes of horseflesh? He is of remote origin, although new to many in the North and West. He comes from stock of ancestral wealth in blood, bone, and muscle. He is neither a novice, novitiate nor innovation. He is tried and true. He has served his country for more than a century. He went with Colonel Castleman and his Kentucky regiment to the Cuban war. He carried the chivalry of the South in the Civil War. Morgan's Raiders were mounted on him when that daring chieftain made his bold dash northward. He served his country before his country had a name. He carried Light Horse Harry Lee, and Marion, the "Swamp Fox," when these famous men of the Revolution had neither home nor country. We trace him back to the plain-gaited saddle horse of 1730. After that date we find him developing into the five-gaited saddler, or gaited saddle horse. It is a happy coincidence that just one hundred years ago, 1799, a new impetus was given the saddle horse. A wonderful thoroughbred, old Diomede, the first Derby winner of England, was brought to America and crossed on Virginia mares, saddlers, thoroughbreds and hunters—the old four-mile heaters and weight-carriers. Later on these crosses produced Peter's Halcorn, old Denmark, old Montrose, old Duluth, old Black Squirrel, and a host of other good ones.

Your time, however, will not be taken up in further tracing the origin and evolution of this comparative stranger in Kansas. He has recently come among us, and when you know him you will want him to stay. If you have never had the pleasure of seeing a pure-bred gaited saddle horse go all the required gaits, you will not regret it if you improve the first opportunity to witness such a performance. It is not everybody that knows just what constitutes a gaited saddler, and many fallacies prevail as to what he is and what he can do. Many think that driving a saddle horse spoils his saddle qualities, but the reverse is true. If properly driven he is not so liable to become choppy in his gaits, and if made to trot square in harness his rack will not degenerate into a jiggle or a pace. Contrary to a prevalent impression, a pacer is not a saddle horse, but the farthest from one. Pacing is not required as one of the regulation gaits, but a bar against any horse offered as a gaited saddler.

While the province of this paper is to

discuss the gaited saddle horse, we will take the liberty of referring to other saddlers, as there are at least four distinct classes, viz, the plain-gaited, or walk, trot, canter horse, usually called the walk-trot horse; the hunter, or cross-country horse; the gaited saddle horse, and the high-school horse.

The plain-gaited horse is required to only walk, trot and canter, but he must be an artist in these three gaits or he is of but little value as a saddler. In general make-up he is a clever fellow and very popular in New York, as he is the English style of a saddle horse. He is usually a harness horse, too, and a good roadster, and may develop into a gaited saddler if he don't fall into mutilating hands and have his tail docked. Should this misfortune befall him, he will be forever excluded from the society of gaited saddlers and high-schoolers, and left to associate with hunters, jumpers, cobs and jackasses, both long-eared, shaven-tailed, and two-legged and high-collared.

The hunter is a short-tailed, stately fellow, and his strong suit is to jump hurdles and fences and go over the bars without endangering life and limb of horse or rider. He also goes the walk, trot, canter gaits, and is quite similar to the plain-gaited saddler in general make-up. Both have docked tails and plucked manes and are sometimes called "park hacks."

The gaited saddler goes all the gaits of the hunter and the walk-trotter but he is not so reckless as to jump fences, hurdles and bars, and he is too modest to sport a short tail, and he looks breedy enough without having his mane plucked. In addition to the walk, trot and canter, he goes at least two more distinct gaits, and he often goes four more, making in all seven distinct, clear, clean, unmixed gaits. The gaits required to entitle him to recognition as a gaited saddle horse are walk, trot, canter, rack, and running-walk, fox-trot, or slow pace. He has his choice of either of the last three named for his fifth gait, but he must go the first four, and he must have the proper breeding or he can not be recorded in the National Saddle Horse Association. The slow pace, or amble, as it is sometimes called, is the least desirable of the seven gaits, and except as a ladies' saddler, is seldom chosen as the fifth gait. The running-walk and fox-trot are business gaits, and are highly appreciated for road work and long-distance rides. The walk (flat-foot) should be regular, spirited and quite rapid except when the horse is allowed to loaf for a rest after a brisk brush along the road. If a horse walks four and a half or five miles an hour he is good enough at this gait.

The running-walk, as said before, is a business gait. It is faster and easier than the flat-footed walk, and is quite similar in speed and ease to the fox-trot, but not quite so fast. It is a delightful all-day gait, and is performed with four beats, like the rack, but not so fast or lofty. In going this gait the horse's reins are rather loose and he takes some of the arch out of his neck, and if in full sympathy with his work keeps time with his step by the nodding of his head. A horse of good endurance and clever at this gait will make from six to seven miles an hour and travel from sixty to seventy-five miles a day without great fatigue to himself or rider.

The fox-trot is quite similar to the running-walk, yet it has a distinct "loose-jointed" motion and "jog" not observed in any other gait. This, too, is an all-day gait, and both are good up hill and down, and this is where a fox-trotter and running-walker make time in an all-day journey.

The trot of a gaited saddler should be quite similar to that of a harness horse, but not so extended. His legs should be kept more closely under him, and the trot should be clear, clean and unmixed. Driving improves the saddle trot and the saddle trot squares up the rack. While the trot is not the proper gait for a regular diet, it is absolutely necessary in a saddle horse. The gaited saddler goes from a flat-footed walk into all his other gaits direct, but he should return to the walk from the canter and rack through the trot, and he should make all his short turns and sharp curves on the trot if not in a walk.

The rack is probably the most fascinating gait, and if well done is the hardest on the horse. He must go at a tension and rack against the bit, and he must get action from his hocks and shoulders as well as from his knees. If he goes in form, he will carry a high head and a high tail, arch his neck and hold a vertical face. He must be pulled together and remain collected from start to finish. If he goes in a pure, clear, bold rack his feet make four-beat music the rhythm of which cannot be mistaken for that of any other gait. The rack was formerly called a single-foot gait, and this term describes the action of the feet exactly, as only a single foot strikes the ground at one time.

Now comes the canter, which is the most graceful of all gaits, and one that is quite easy for both horse and rider. There is a vast difference, however, between the canter of a gaited saddler and the gallop of an unrestrained horse or the lope of a broncho. Any horse will lope or gallop when pushed beyond his trotting or pacing speed, but the gaited saddler goes from a walk, or even from a standstill, into a graceful, enjoyable, hammock-like motion, which we call a canter. The term is inadequate to the luxurious movement, but we must consider the thing and not the name. His legs are never so well under him as when in the center and his neck is never so beautifully arched.

The high-school horse is simply the gaited saddler, finished in education, polished in manners and taught other gaits, steps and movements. When thus educated, when thus finished, he is a paragon of grace, ease and beauty, and when in motion, as suggested by Mr. True, he is poetry set to music.

Shorthorn Breeders.

The following is the program for the annual meeting of the Missouri and Kansas Shorthorn Breeders' Association, to be held at the Midland Hotel Club Room, Kansas City, Mo., February 15 and 16, 1899. First session Wednesday, February 15, at 2 p. m.:

Welcome address, John C. McCoy, president Kansas City Live Stock Exchange.

Response, Ex-Gov. George W. Glick. Atchison, Kans.

"What the Shorthorns Accomplished During 1898," J. H. Pickerell, secretary American Shorthorn Herd Book Association, Springfield, Ill.

"The Future of the Bates Shorthorn," Geo. W. Glick, Atchison, Kans.

"The Scotch Shorthorn and the Good He Has Done for the Breed," H. C. Duncan, Osborn, Mo.

"The Booth Shorthorn and His Value on Other Families," W. P. Harned, Bunceton, Mo.

"My Experience With Shorthorn Cattle," Col. W. A. Harris, Linwood, Kans

"Should the Color of the Shorthorn Add to or Detract from His Value?" C. E. Leonard, Bell Air, Mo.

"What Is the Future Outlook of the Shorthorn Breeder?" B. O. Cowan, New Point, Mo.

"What Have the Shorthorns Won in the Past in Competition with Other Breeds?" Geo. P. Bellows, Maryville, Mo.

"Care and Management of the Breeding Herd," John McDairmid, Kansas City, Mo.

"Fitting for the Show Ring, Feed and Management," A. A. Wallace, Bunceton, Mo.

"First Twelve Months of the Calf's Life," John McCoy, Sabetha, Kans.

"Private and Public Sales Compared—Which is the Better for the Breeder?" Col. S. A. Sawyer, Manhattan, Kans.

"My Impressions Among the Shorthorn Herds in North England and Scotland Last Year," George Bothwell, Nettleton, Mo.

"How Best Fit Cattle to Get the Better Price in the Sale Ring?" Col. Jas. W. Sparks, Marshall, Mo.

"Heredity," O. O. Wolf, Ottawa, Kans.

"Should the Use of Grade Bulls Be Encouraged?" N. H. Gentry, Sedalia, Mo.

"What I Saw of Shorthorns in Great Britain in 1898," S. C. Hanna, Howard, Kans.

"Texas Fever," Albert Dean, United States Bureau of Animal Industry, Kansas City, Mo.

All subjects or papers will be taken up and discussed.

SPECIAL QUESTIONS FOR DISCUSSION.

1. Shipping rates in less than car lots.
2. Should contagious diseases and their extermination be solely under the direction of a state veterinarian or a special board of experts?
3. Is it advisable to hold a public exhibition and combination sale of Shorthorns at some convenient place this coming fall?
4. If twenty dollars expended in extra care and ration of the calf during its first twelve months will add to its value, will it recompense the Shorthorn breeder to do so?
5. How best proceed, individually and collectively, to bring the once-was reputation of the Shorthorn up to that standard that we believe he is entitled to in the estimation of the general beef-breeding public?

W. P. BRUSH, Secretary.

Dr. Bull's Cough Syrup has superior merit. Try it for a cough or cold and be convinced. There are many cough remedies on the market but Dr. Bull's Cough Syrup is the best.

SWEET POTATOES Sent out to be Sprouted on Shares

No experience required. Directions for sprouting free with order. Also Vineless Sweet Potatoes for sale and on shares.

T. J. SKINNER, Columbus, Kas.

To Kansas Breeders of Pure-bred Stock.

If you are not already a member of the Kansas Improved Stock Breeders' Association you should send $1 to the secretary, so as to be included in the membership for 1899.

Every member will receive one or more bound copies of the annual report for 1899, which contains the full proceedings, papers, addresses and discussions of the ninth annual meeting of the association. It will also contain the association breeders' directory, which contains the name and address of every member, together with the class of stock bred by each. Each member will also receive a bound copy of the Kansas Commissioners' Report of the Trans-Mississippi Exposition at Omaha.

The executive committee expects soon to announce the fact that it has completed arrangements by which every member shall receive all of the bulletins issued by the State Agricultural Experiment Station; also all the bulletins and published reports issued by the United States Bureau of Animal Industry, of Washington, D. C. These are only a few of the benefits received by members, all of which are worth several times the trifling cost of the annual dues of $1.

The Kansas Improved Stock Breeders' Association, as now organized (the other State associations having been merged into it), is one of the greatest aids to your business, as well as of untold value to the general farmer, by reason of educating him to become a more generous patron of your breeding establishment, hence the necessity for everyone interested in pure-bred stock to further strengthen the association by becoming a member.

If we are to have a representative State fair, in fact, or a Kansas State exposition, it will be due wholly to the well-directed efforts of this association during the past two years. If we are more prosperous in our business than heretofore, it is most certainly and directly traceable to the work of this association in combining their individual efforts for the general benefit of all engaged in live stock husbandry.

The association within a very short time will be ready to publish its first bound report, but would like to hear from all Kansas breeders who wish to be identified with this organization before the report goes to press.

A single copy of the report will be delivered by mail to any address for 25 cents; 10 copies, delivered, $1.50; 100 copies, delivered, $10. A limited amount of advertising space will be sold for the benefit of the association, at the rate of $10 per page. For further information address H. A. Heath, Secretary, Topeka, Kans.

Gossip About Stock.

D. Trott, Abilene, Kans., writes: "The Ash Grove Herd has had a successful season, no disease and good sales. The old Kansas Farmer brought me lots of customers. At present I have both Duroc-Jersey and Poland-China males of serviceable age, also some nice bred sows, both breeds, for sale."

Frank W. Baker, Council Grove, Kans., some time ago announced the probability of his "closing out" his Poland-Chinas, but now comes back with a new advertisement and says: "I have changed my mind and expect to continue breeding in the future and will aim at the top for quality, regardless of prices."

R. S. Cook, of Wichita, Kans., in a recent letter says we may tell the boys that he has a few extra fine, well-marked, richly-bred Poland-China males that he thinks are a credit to any herd in the United States. They are properly marked in a splendid conformation and would make fine herd-headers. Prices reasonable.

Sam W. Hill, owner of the Crescent Herd of Poland-Chinas, Hutchinson, Kans., writes that he is getting his herd in strong shape for spring trade, having 15 sows bred for spring litters. He has for ready sale 8 sows and gilts bred to those famous sires, Guy Darkness or Best Nims; also has three good boars of serviceable age for sale.

Our new advertiser of Shorthorn cattle, Mr. H. R. Little Hope, Kans., has his herd headed by Sharon Duke by Lord Shomley 3d 108788 and out of Empress 2d. Lord Shomley was a pure-bred Bates by Winsome Duke 7th 101365. The herd bull, Sharon Duke, traces through his dam to Rose of Sharon and through her sire to Imp. Young Mary. Among the young bulls which Mr. Little is offering for sale he has a number of Cruickshanks, several of which have two or three top crosses.

The Maple Lawn Herd of registered Hereford cattle, owned by E. A. Eagle & Son, Rosemont, Osage County, is reported to be doing very nicely. The owners state that their card in the Farmer has brought them a good many calls for stock, and they will have five pure-bred bulls in Kansas City for sale February 28, 1899, as per their announcement in their new advertisement this week.

A public sale of thoroughbred brood sows will be held at Rossville, Kans., February 9, consisting of 30 sows, 1 to 2 years old. These sows are safe in pig to either Tat's Chief I Know or the prize-winning yearling, Dick Wainright. Also about 40 head of shoats, all sizes, mostly the get of Tat's Chief I Know. Bids sent to Col. S. A. Sawyer, Manhattan, or care of M. F. Tatman, will be treated with the strictest confidence. M. F. Tatman, proprietor, Rossville, Kans.

J. W. Higgins, Jr., Hope, Kans., desires to say to his friends and patrons that he has recently added several sows to his already extensive herd of registered Poland-China hogs, to one of which he particularly desires to call attention, being Lady Chief I Know, sired by Chief I Know, dam by Ramble Joe, the Iowa State Fair winner, second dam Guy Wilkes 2d. Then she is safe in pig to Chief I Am, the greatest son of Chief Tecumseh 2d. Mr. Higgins aims to keep in line with the best and has now for sale some extra fine gilts by such dams as Princess Eulalia 26748, Black Romany 29608, May Tecumseh 47011 and Daisy Jubilee 48379. If you want something choice at reasonable prices write to the above address.

Wait & East, Altoona, Kans., still continue to breed Poland-Chinas in a most enterprising manner, keeping prime quality invariably in view, and making prices so reasonable that customers can afford to buy from them, as is evidenced from the fact that they have sold 16 head in the last week. They now have on hand about 300 head, which are in very thrifty condition with no disease near them. Among the most desirable things for ready sale are 6 fine spring boars, 2 of them sired by the great Missouri winner, King Hadley, 2 by the old show sire, Black Stop Chief, and 2 by Corwin I Am. They also have a number of younger boars sired by some of the same boars. Also 20 nice sows that are bred for March and April litters, which they are willing to sell to buyers on very advantageous terms, and last but not least of all, they have 150 of the finest fall pigs ever bred by them. They believe the hog business has been at the bottom and the next few years will see a general advance of prices.

The members of the Standard Chester White Record Association met in annual session at Indianapolis, Ind., January 6, 1899. The gathering was not up to the expectations of the members, but those that were present were deeply interested in the Chester White breed of hogs. The session was an interesting one. While many of the members who had been appointed on the program were not present, they had kindly forwarded their papers, and the program was a very interesting one and was freely discussed. The prospects for this breed of hogs is very encouraging. Reports indicate an increased popularity. Breeders are having good sales, at fairly good prices. They are, as a rule, increasing their supply of brood sows, preparing for a marked increase in the number of pigs for this season. The report of the secretary, W. H. Morris, Indianapolis, Ind., shows a good increase in the volume of business for the year, and this association is on a substantial financial basis, so much so that it is now giving the volumes to its stockholders, and to non-members it will in the future make a present of the volume containing the pedigrees, where 10 pedigrees are recorded in a single volume.

BROWN'S Bronchial Troches

the popular cure for

IRRITATED THROATS.

Fac-Simile Signature of John D. Brown & Son on every box.

The Home Circle.

WHEN THE SUN'S IN THE WEST.

"Life's day is too brief," he said at morn,
"I would it were ten times longer,
For great tasks wait for my strength and skill"—
At noonday the wish was stronger.

For fame was waiting for him farther on,
And hopes were nearing completeness,
And one was crowning the joys of life
With Love's own wonderful sweetness.

"Life's day is too brief for all it holds,
The working, the grasping, the moving,
Too brief"—and held her close to his heart—
"Too brief for the bliss of loving."

But to-night, white-haired, he sits and looks
At the years that lie behind him;
"I'm tired of failure and of success,"
He says as the hot tears blind him,

"Of high ambition and fame's steep path,
Such robbing of strength has grief done;
Make room, dear love, on your pillow of turf,
Life's day, thank God, is a brief one!"
—Jean Blewett.

THE AWAKENING OF AUNT LUCINDA.

A girl was walking briskly down the main street of a little country town. Her springing gait told of a generous vitality, and her cheery face was pleasant to look on. But a little cloud fell over it as she neared her destination, and her pace involuntarily slackened.

"How I wish it were over!" she murmured under her breath. "What a penance it is to go and see Aunt Lucinda!"

Then a tiny gleam came into her eyes, and she gave her head a decisive nod.

"I don't feel in the humor to stand much nonsense," she thought. "And if Aunt Lucinda begins to air her grievances in her usual fashion, she will be very likely to hear a piece of my mind."

She gave a sharp rap at her aunt's door, a rap which was promptly answered by a neat little maid, whose eyes brightened at sight of the visitor.

"Good morning, Mary," said Bessie, in her usual genial fashion. "Is Miss Barrett at home?"

"Yes, Miss Bessie," responded Mary. "Please come in."

She led the way to the room where her mistress was sitting. Miss Barrett did not rise on her neice's entrance, but sat in solemn state as Bessie went briskly forward.

"Good morning, aunt," said Bessie, kissing the cheek that was frigidly offered. "How are you this morning?"

"Oh, I don't know," responded Aunt Lucinda, with a slight groan. "I don't know how I am."

Bessie was too well used to her aunt's peculiarities to feel any astonishment at this reply. She sat down, however, wondering upon what topic it would be safe to begin.

"I can hardly believe that you have come to see me," said Miss Lucinda, in an injured tone, with a strong emphasis on the "me." "None of you care anything about me."

Bessie's face flushed slightly, but she made no reply. She had met the same accusation so many times that she was thoroughly tired of trying to justify herself.

"How is Mary getting on?" she inquired, by way of turning the conversation.

"Mary? Oh, as bad as all the rest," returned Aunt Lucinda.

She sighed heavily and fixed reproachful eyes on poor Bessie, who somehow began to feel a guilty responsibility with regard to Mary's shortcomings.

"I thought Mary seemed a very decent girl," she ventured to say.

"That is just as much as you know about it," responded Miss Barrett, with sudden energy. "She worries me, and hurts my feelings continually. But, of course, you don't care! It is nothing to you."

"She is only a child," pleaded Bessie, on behalf of the delinquent.

"She is quite old enough to know better," said Aunt Lucinda. "And after all I have done for her! But there is no gratitude in this world."

She sighed again, and Bessie uncomfortably wondered what had better be said next.

"Have you seen Lettie lately?" she ventured.

"Oh, dear, no!" answered Aunt Lucinda, looking more martyr-like than before. "It is quite three months since Letty came near me. Her mother says she is busy, but she can find time to go to your Aunt Anna's. It seems to me that you can all very easily find the way to your Aunt Anna's, but you forget where I live."

"Indeed, we don't, aunt!" said Bessie, roused to some show of self-defense. "You know Kitty was here only a day or two ago."

"Yes, and I was sorry to see how frivolous she appeared to be growing," replied Aunt Lucinda, with a shake of her head.

"The first thing she did was to ask me how I liked her new hat. I told her I had more important things than hats to think about."

"But Kitty is so pretty," said Bessie, taking up the cudgels on behalf of her sister. "She can't help thinking a little of how she looks, you know."

"'Favour is deceitful and beauty is vain,'" quoted Miss Lucinda, with a solemn shake of the head. "A girl has no business to bestow thought upon fleeting vanities."

"Most girls do," said Bessie, in her direct way. "After all, aunt, we are only young once. And if little things make us happy, why shouldn't we have them?"

"A most heathenish way of talking!" responded Aunt Lucinda. "At this very moment, Bessie, you—I regret to see—are wearing round your neck a lace scarf, which I do not suppose was bought for less than two-and-sixpence. It is not really necessary, it adds in no way to your comfort——"

"Oh, it does!" broke in Bessie, with a laugh. "It is a decided comfort to feel that I look nice."

Aunt Lucinda was horrified. That a girl—and that girl her own niece—should deliberately express the belief that she looked "nice," was contrary to all her ideas of decorum.

"In my young days, it was not customary for girls to flatteringly comment upon their own appearance," she said, icily. "But, putting that matter altogether aside, have you reflected that that half-crown might have been given to the poor?"

Bessie flushed.

"I do not want to be selfish, aunt," she said gently, "and I hope I do not forget those who are in need. But have you reflected that if nobody wore pretty things trade would suffer and the number of poor be greatly increased?"

Aunt Lucinda looked slightly nonplussed. Then—

"People can generally find a reason for doing as they like," she said disagreeably, "but I am thankful I have nothing of the kind on my conscience."

Bessie looked at the thin, angular figure and the hard, sour face. She suddenly felt sorry for Aunt Lucinda. Life, bereft of love, grace and beauty, seemed a hard thing.

But Miss Lucinda returned to the charge mercilessly.

"I met young Will yesterday with a flower in his buttonhole. Violets, if you please! I did not forget to stop and tell him what I thought about it. A clerk on a pound a week sporting buttonholes. I have no patience!"

Bessie's eyes began to look ominous. She loved her brother exceedingly, and none knew better what a good, steady lad he was.

"The first breath of spring," she said. "Will is not extravagant, aunt. It is but seldom he indulges in a little luxury, but he said the fragrance of the flowers gladdened him all day."

"Such rubbish!" cried Aunt Lucinda sharply. "I never want flowers to gladden me. I should be ashamed to talk such childish nonsense."

Bessie did not speak; but her silence, if her aunt had but known it, was pregnant with meaning.

"But, of course, it's no use my trying to talk to you," said Aunt Lucinda, her visage assuming its most mournful expression. "You take no notice of what I say. I live here all alone, and nobody cares what becomes of me."

Bessie was still silent, so Aunt Lucinda went on.

"Yes, it is an ungrateful world. Look how I sat up with you when you had the fever. And I nursed Kittie all through the measles, your mother being in bed herself at the time. But I suppose you find it convenient to forget all these things."

"No, we don't," said Bessie, her cheeks burning. "We have thanked you again and again, aunt."

She did not add, as she might have done, that a benefit repeatedly thrown in one's face becomes an intolerable burden. Aunt Lucinda never allowed her good deeds to be forgotten, and she had a complacent belief that they would ensure her a ready passport to a better world when the time came for her to leave this.

"Your Aunt Anna has never done anything for you," went on Aunt Lucinda, "and yet you all flock to her, while I can hardly get a glimpse of you. I can't think why."

"Well, I will tell you," returned Bessie, in the tone of one now determined to speak at all hazards. "It is because Aunt Anna is the most unselfish woman in the world, because her heart will never grow old, because love is the mainspring of her every word and action."

Aunt Lucinda gasped and stared at the speaker.

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"You say Aunt Anna has never done anything for us," proceeded Bessie, warming to her theme. "She has never given us money because—dear soul!—she has never had any to give us. Why good women like she often get bad husbands is to me one of the standing mysteries of life. But you know what Aunt Anna's husband was."

"Wretch!" ejaculated Miss Lucinda, with a face of abhorrence.

"Wretch indeed!" repeated Bessie, a shade of sadness stealing into her tone. "But"—defiant again—"who has ever heard Aunt Anna groan or complain about him? None of us can ever quite realize the misery of the life she has led with him, and"—her voice sinking—"mother always believed that there had been times when Aunt Annie lacked even bread to eat. But she never told the world. Aunt Anna was—and is— a heroine!"

Aunt Lucinda cowered a little. She had often been secretly ashamed of the sister who was so poor, but Bessie's words began to put things in a new light.

"He died at last," went on Bessie, "and a blessed relief it must have been to Aunt Anna. But I don't believe she ever admitted the fact, even to herself. And now she only talks of the lover of her youth."

"Oh, she has done a great deal for us," said Bessie, after a few minutes' thoughtful pause. "When you nursed us, Aunt Lucinda, she was watching by the bedside of her own dying children. She had to give them up; but though flesh and blood faltered, her heart was true to its heavenly allegiance. And she lives in sure and certain hopes of meeting them again."

Something moved at Aunt Lucinda's heart—something that had lain dormant for years. She did not speak.

"She has taught us such lessons," said Bessie, half dreamily. "And all—mind you—by the force of her example. I never remember Aunt Anna preaching to us in our lives. And oh, Aunt Lucinda"—with a sudden change of tone—"it is so good to go there. She is always so jolly."

"Jolly!" repeated Miss Lucinda, rather faintly.

"Yes. She laughs so much, you know," explained Bessie, a smile illuminating her own face at the remembrance. "And she is always so interested in everything we tell her."

"Did—er—did she like Kitty's hat?" murmured Miss Lucinda.

"Oh, immensely," replied Bessie. "Only she thought if the flowers were put rather more to the back—just a little, you know—it would be an improvement. So Kitty tried it, and it really was."

Miss Lucinda felt rather at a loss. If her sister were really the good woman just described—and Bessie's facts could not be disputed—she could not understand the interest in millinery. Heroism and artificial flowers were—to her mind—altogether incongruous.

"She always cares," said Bessie, "no matter what it is. Whatever we want to tell her, Aunt Anna is always anxious to hear. And she is such a darling to talk to! Somehow she always understands."

Bessie had softened considerably while she had been talking. But she suddenly remembered, and returned to the starting point. Her voice grew hard again.

"You wondered, Aunt Lucinda, why we liked going to Aunt Anna's better than coming here. And I said I would tell you. So I will, though I expect you'll never forgive me for it."

"Well?" said Aunt Lucinda.

She tried to speak in her usual tone, but she faltered a little, and Bessie—noting it—went on more gently:

"You always find fault with us, Aunt Lucinda. Try as we may, we can never please you. And so—some of us have got tired of trying."

Aunt Lucinda was silent. But a sudden sense of loss swept over her.

"You are mother's sister," said Bessie, "and we have tried hard to love you for the sake of the time when you, she and Aunt Anna were girls together. When mother died she told us never to forget you, so we have done our best to bring a little brightness into your life. But you would not let us."

Bessie's voice was very sorrowful now, and Aunt Lucinda cowered dumbly in her chair.

"We have wanted to come and tell you things, as we tell Aunt Anna; but you never cared to hear. When Cousin Letty last came to see you, she was proud and glad because of her engagement. She wanted you to say 'Heaven bless you, Letty, and give you happiness.' But you told her marriage was a mistake, that good husbands were scarce, and that any woman who ran the risk was a fool. So little Letty went home with a bleeding heart; she did not want to come to you again, Aunt Lucinda."

Miss Lucinda shivered. For years people had longed to tell her the truth, but had not dared. Bessie's present frankness might be a wholesome tonic, but it was very, very bitter.

"I came to you in great trouble myself a little while ago," said Bessie. "I need not now enter into the question of what it was about. Perhaps you remember, or perhaps the thing made so little impression on your mind that you have forgotten all about it. Any way, my heart was terribly sore, but you could not give me any attention. Mary had dusted the sitting room badly that morning, so you could only think and speak of her delinquencies. I had to go away again. I went to Aunt Anna."

"And what did she do?" asked Miss Lucinda, in a stifled voice.

"She cried with me," replied Bessie simply. "Just at first, you know. Then she kissed me, and bade me be of good courage, for better times were sure to come, and she made me realize that I wasn't just a plaything in the hands of a blind fate."

"Bessie," cried Aunt Lucinda, the tears running down her face, "I've been a selfish woman, but I never knew it. I want to be different. Oh, do help me!"

When—some two years later—Bessie's sweetheart was introduced to Aunt Lucinda, he quite fell in love with her.

"You have got the most charming relations, Bessie," he said, as they walked home together in the gloaming. "I thought there could not possibly be another woman as sweet and kind as your aunt Anna; but Aunt Lucinda is nearly as good."

"Yes," assented Bessie, a happy thrill in her voice, "Aunt Lucinda is nearly as good."—Household Words.

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The Young Folks.

GOOD NIGHT.

Good night! Now dwindle wan and low
The embers of the afterglow,
And slowly over leaf and lawn
Is twilight's dewy curtain drawn,
The slouching vixen leaves her lair,
And, prowling, sniffs the tell-tale air;
The frogs croak louder in the dike,
And all the trees seem dark alike;
The bee is drowsing in the comb,
The sharded beetle hath gone home;
Good night!

Good night! The hawk is in his nest,
And the last rook hath dropped to rest;
There is no hum, no chirp, no bleat,
No rustle in the meadow sweet;
The woodbine, somewhere out of sight,
Sweetens the loneliness of night;
The Sister Stars, that once were seven,
Mourn for their missing mate in heaven;
The poppy's fair, frail petals close,
The lily yet more languid grows,
And dewy-dreamy droops the rose;
Good night! —Alfred Austin.

ON HER MAJESTY'S SERVICE.

There was a time antecedent to trains de luxe and through communication between London and Constantinople when the career of a queen's foreign messenger was almost as adventurous as that of a war correspondent. It was imperative that he should be a good horseman, for not infrequently he would have to take long and arduous journeys in the saddle, and he needed both courage and resource to cope with the difficulties that would beset him. In 1850, for instance, Colonel Townley, who, at a time when the interminable eastern question was at one of its recurring crises, was intrusted with a dispatch of great importance for the foreign office to our ambassador at the Porte, and had to ride from Belgrade to Constantinople in the worst weather and with the roads in places almost impassable, was three days and nights in the saddle without quitting it.

Even the crossing of the channel had, earlier in the century, a spice of adventure, and on one occasion gave an enterprising messenger an opportunity for outwitting a rival Mercury. Thus, on an evening in November, at a time the chancelories in Europe were agog with anxiety regarding the situation of the day, two messengers left a certain European capital—the one a queen's messenger dispatched by our ambassador to the foreign office here with information of the first importance concerning our relations with one of the powers, and the other a messenger of the same power to its ambassador at St. James. Both were enjoined to use all possible dispatch, but the Englishman was told that if he could outstrip his rival by a few hours the time gained would be of great advantage to the state. On the road the two messengers fraternized, but the Englishman was all the while on the lookout for an opportunity to spurt ahead. No chance came until they reached Calais, when they found that a great storm was raging and that the packet was unable to cross the bar. There seemed nothing to be done, at least to the foreign courier, but to adjourn to the neighboring hotel for a night's rest and the passing of the storm, and to the hostelry they repaired; but no sooner had the Englishman seen his companion safely retired to his room than he again sallied forth, and by dint of a tempting offer of money induced the crew of a lugger to hazard the passage to Dover.

Fortune favored him, and with a twelve hours' start of his rival he hurried up to London and Downing street, worn and travel-stained, but conscious that he had "done the state some service." Nor was his enterprise unrewarded, for the delighted foreign secretary presented him with a handsome honorarium on the spot.

But though the romance of his calling has almost disappeared and his journeys to this or that capital are almost holiday trips, with the advantage that he doesn't have to pay the bill, the Queen's messenger is still an indispensable and even an important officer of the state, for there are many communications passing between our foreign office and our representatives abroad that it would not be desirable to intrust to the post. He must, for obvious reasons, be a gentleman of proved integrity and good social position, able to speak or make himself understood in the chief European languages, and he must be ready to start at a minute's notice for Paris or Peking. If he is down at the bottom of the list available for duty he may generally reckon on a short holiday, but with no certainty. Under such circumstances did Captain A—— on one occasion hie him to the sunny south; but he had scarcely arrived at Monte Carlo when the following strange and apparently insulting telegram was handed to him:

"Chief of Foreign Office to Captain A——: You are fast and dirty. Return at once."

Whatever the first part of the message might mean, it was clear that he was to return at once, and back he came to find that the message should have read: "You are first on duty. Return at once."

Under all the circumstances the emoluments of the post are not extravagant—£400 a year with an allowance of £1 per day for subsistence while on actual duty, and all traveling expenses paid. As the messenger is probably on duty rather less than half the year, allowing for the holidays, we may reckon that the allowances amount to £150 a year.—Paris Messenger.

Dr. Sven Hedin's account of his extraordinary journey across the continent of Asia is one of the most thrilling narratives of endeavor, in the face of well-nigh overwhelming odds, which has ever been written.

Dr. Hedin left his native city of Stockholm in 1893, and from that time until, in 1897, his task was accomplished by entering Peking, he was engaged constantly in a desperate struggle with the tremendous difficulties which beset his way. His successful passage through Pamir, where progress became a ceaseless battle against snow and ice and cold, and where often the only method of advancing was upon hands and knees; the thrilling ascent of the "Father of all Ice Mountains," Mus-tagh-ata; his terrible fight against thirst and exhaustion in the desert of Takla-makan—all these go to make up an almost unparalleled story of human daring, suffering, and endurance.

DR. SVEN HEDIN

(From "Through Asia." Copyright, 1898, by Harper & Brothers.)

The man to whom the agonies of starvation and exposure were but minor considerations when weighed in the balance with the cause of science, the man who, after nine days without water, paused on the brink of a stream to note his pulse before and after drinking, surely possesses the perseverance which must eventually surmount all obstacles. "Through Asia," which has been published by Messrs. Harper & Brothers, opens to the reading public the portals of a new world. It is the account of what, with the sole exception of Nansen's attainment of "Farthest North," was the most extraordinary journey of the century.

Queer Tricks of Speech.

The Cornhill Magazine has an amusing list of blunders in speech. "Is he an extremist?" asked a Roman Catholic priest of a dying man's friend. "Aye, he's right in, your reverence," replied the other. After a pause, he added, as a clincher, "Clean in, poor chap! Right up to the neck, sir!" Presently the old man went on sadly. "Me and brother Bill have worked together the past fifteen year." "On the railway?" asked the clergyman. "Aye, sir. We've worked all that time on the firmament way." A couple of schoolboys were hailed before the headmaster accused of breaking boundaries. One of them offered the usual schoolboy plea of ignorance, and said they had only traversed a few yards of the forbidden territory. The master turned to the other with the question, "And what have you to say?" The lad, who had a dangerous habit of using long words, replied, "Please, sir, Smith has made a perfectly voracious statement."

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Lincoln Could Get Angry.

"I have read several Lincoln anniversary speeches," said Mr. Charles Frederick, "and have been struck with the statement contained in some of them to the effect that Mr. Lincoln seldom got mad, and that when he did get mad he did not allow himself to get very mad. If these speakers spoke from their personal experience, it is all right, but my personal experience with him one night satisfied me he could get up a terribly good-sized case of mad at times.

"I was a boy at the time and was a messenger for the old American Telegraph Company, which in after years was absorbed by the present Western Union Telegraph. For several days there had been a number of telegrams for the President from army officers, and among them I remember two or three from General McClellan. I don't remember now why they did not come over the military telegraph lines. Well, one night I started over to the White House with a telegram that I knew came from General McClellan. It was for the President.

"In those days there was always a guard of soldiers stationed at the two avenue gates, as also at the other gates, but messenger boys were generally well known, and they were admitted day or night without any question, at least to the front door, where another soldier guard was also stationed. There was always an officer about the door, who receipted for telegrams. This night, however, I saw Mr. Lincoln coming toward the outer gate, and I thought I would personally hand him the telegram, which I did. He smiled pleasantly enough as he opened it, but a change suddenly came over him.

"'Have you the other telegrams?' he demanded of me. I replied that I had but the one, though I informed him that there had been one or two others that day from General McClellan.

"'That is what he says,' added the President, 'and what annoys me is that I have not received them.'

"Then, turning to the sentry, he said: 'Send up to the door for the officer in charge and tell him that when telegrams come here addressed to me they should and must be delivered to me. Tell him, also,' and by this time the President was very mad, 'that if he sends any more of my telegrams over to Mr. Stanton's house I'll drive him away from here. Mr. Stanton has enough telegrams of his own and should not have mine.'

"Though I was but a boy," said Mr. Frederick, "I could see that Mr. Lincoln was mad all the way through, and that, for the moment at least, he was displeased with his war minister, Secretary Stanton, and that he intended exactly what he said. The President, then directing himself to me, continued: 'Boy, tell your folks that I must have my telegrams, and that if these soldiers about the door interfere any more I'll drive every one of them away. I don't want them and never did want them about the place.'"—Washington Star.

His Mind Was Relieved.

A surgeon relates that before Santiago he (the surgeon) going to the front, came upon a young officer, sitting beside the road, trembling like a leaf and whiter than the dead men around him. At sight of the surgeon he began to talk.

"I'm a coward, I'm a coward, I'm a coward," he said; "I knew I'd run, and I did. I'm disgraced forever. I was going along all right, not thinking of anything but getting at the dashed Spaniards, yelling to my men to come on, and running ahead as fast as I could, when all of a sudden I stubbed my toe, or something, and then I can't remember being scared, but I must have been, for I came galloping back here, sick as a dog. I'm a coward, and I wish I were dead! Why don't somebody shoot me? I've got such an awful soreness right here," and he put his hand to his stomach.

The surgeon gave him a quick look and caught him as he plunged forward in a faint. Where the awful goneness was a Mauser bullet had found its billet. They carried the wounded man to the field hospital, and he chuckled all the way. "Oh, my! oh, my!" he said over and over; "I wasn't scared; I wasn't scared!" And then he would laugh delightedly: "I wasn't scared. I was hit—I was just hit. I ain't a coward after all."—San Francisco Argonaut.

He Has the Best Wishes of Many Friends

A doctor, after studying many years and devoting his entire time and attention to the cure of cancer and similar diseases, has at last perfected a cure, whereby he has effected many miraculous recoveries and has won the praises of many a poor sufferer for having saved him from a horrible death. He has written a book that will be sent entirely free to any one addressing Dr. E. Rinehart, Lock Box 221, Indianapolis, Ind.

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KANSAS POCKETBOOKS AND EXPANSION.

The question of expansion has again broken into the arena of public discussion, while the United States Senate is proceeding so deliberately in considering the treaty with Spain that its ratification during the present term has become a matter of grave doubt, and the possibility of its defeat is strongly suggested. Pending the delay, the Filippinos are apparently making good their threat to give trouble unless their independence shall be granted. Present discussion has lost the dash of enthusiasm which earlier seemed inspired by a more or less defined expectation that the vaunted imperialism would create a piece of royalty for pretty much every American who could "get in on the ground floor." The rush for power and spoil of office has not, indeed, been lost sight of, but the sober argument of dollars and cents as affecting those who must remain upon American soil, and who are likely to vex with their votes, is in the ascendant.

The producers of sugar and tobacco easily find that expansion over rich tropical countries is sure to make these articles so cheap to the American consumer that there will be left no profit on their production under the less favoring conditions which prevail here. Producers of cotton and, with them, makers of cotton fabrics have been led to apprehend that cotton may be grown under tropical suns and manufactured in "open door" countries so easily and so cheaply as to make prices to the user of cotton goods no longer dependent upon the cotton fields of the Southern States or the cotton mills of New England. Some of the iron-makers of Pennsylvania have taken alarm lest the iron mines of some of the countries over which expansion is contemplated shall turn out a product from which users of iron may be supplied more cheaply than even Pennsylvania can produce them.

It will be observed that not one of the fears yet enumerated—fears as to the pocketbook—affects any production of Kansas. This State is essentially a producer of bread, and meat, and butter, with a limited but increasing production of wool, a considerable production of lead and zinc, an output of salt sufficient to prevent putrefaction, and of gypsum enough to make the plaster of paris toys of the world. But, while the exports from the entire United States consist to the average extent of about 70 per cent of agricultural products, the exports from Kansas consist of bread and meat in a still greater proportion. It is wheat and corn, beef and pork that Kansas sends abroad in exchange for things not here produced. If the pocketbook argument is to prevail—and that is the argument now under consideration—Kansans will probably have larger balances in their favor if the market for grains and meats be left unimpaired or broadened and the sources of supply for things not here produced be so extended as to make these things available at less cost than now. Kansans are consumers of sugar. If Cuban or Philippine sugar shall become available in exchange for fewer pounds of wheat, corn, beef or pork than are now required, the farmer will have that much more wheat, corn, beef or pork to exchange for something else or to turn into cash to loan to some Eastern brother in distress. Kansans consume annually great quantities of tobacco, for which they exchange a lot of food provender. The kinds of this weed which grow in the vicinity of Havana and in the vicinity of Manila are said to be less nasty than the kinds which grow in Connecticut, in Virginia, and in the Carolinas, the difference being so great that were the less nasty article obtainable at a slight reduction from the price of the viler sort, or even at the same price, the American consumer would cease to punish his neighbors with expectorations and exhalations from any but the less nasty kinds. Whether there would be any saving of expense to Kansans by this change is a question of economics too deep for the writer. Cotton is becoming more and more the great staple for fabrics. It was once claimed that the southern United States possessed a practical monopoly of cotton production. They asked no protection and they feared no rival. The development of the cotton industry in Egypt, in India, and the production of superior grades of cotton in other tropical countries by the art of the plant breeder, supplemented by improved methods of cultivation, changed all this and the Southern sugar planter appeals not altogether in vain to his neighbor, the cotton planter, to consider what effects "expansion" may have upon the cotton-growing industry. The cotton manufacturer, who has for so long been secure in his profits from the American consumer under tariff protection against competitors in other countries, looks with alarm upon the announced "open door" policy which is heralded as the accompaniment of expansion. If this open door shall mean all that it may, will not American users of cotton goods buy where they can buy cheapest? Will not the farmer of Kansas exchange a smaller portion of his food products for his cotton goods in the open door market? Will not the surplus which has gone so steadily into the coffers of the cotton manufacturer and his money loaning neighbor now remain in the pockets of the bread and meat farmers, if a wide-open-door policy shall prevail? It is not here asserted that affirmative answers to these queries are due. To so state might be called politics. But these are some of the questions implied by arguments against expansion.

By no economic argument which has thus far come under the notice of the writer, can it by any analysis be made to appear that pocketbook considerations against expansion have any potency to turn the farmers of Kansas against expansion, as the term is used in current discussion. On the contrary, every consideration of immediate selfish interest of the people of this State points to the final acquisition of the tropical islands as desirable to the people of Kansas.

That other considerations may outweigh those of the pocketbook, is not doubted. That the Kansas producer of export bread and meat may feel a sympathy for his fellow-craftsmen in other States who produce sugar, tobacco, or cotton; that he may have consideration for his brother in the iron industry, and the cotton industry, and that these may to him seem more important than his own immediate gain, cannot be doubted. That there may be far-reaching consequences of expansion and consequences of a reflex kind in which dangers may lurk for the future, is held by large numbers of candid people. But the argument of immediate and substantial gain—an argument which is always a moving one with men of this world—this pocketbook argument as applied to the case of the farmers of Kansas seems to have but one side, and that side is in favor of expansion.

Prices of wheat took a gallant turn upwards on Monday. Closing quotations in Chicago were 1¼ cents above Saturday's closing. At Kansas City No. 2 red sold up to 72 cents, being the same as Chicago's May option for contract grade.

The long-talked-of ship canal across the narrow land which joins the two Americas, seems likely to at last be constructed. Some questions of treaties have to be disposed of; some objection will be made to Government aid to the canal company; some jealousy will be expressed of export cities which will be built up along the Gulf coast of the United States; but the Western empire needs the outlet through the Gulf to both oceans and to all parts of the world; the military and naval interests of the United States need a shorter route for battle ships from coast to coast than that pursued by the Oregon. The subsidies demanded are likely to be granted; the diplomatic negotiations will clear objections from other nations; the march of progress will have its channel through the link of the Americas, and the chief material advantages will accrue to the productive region drained by the Mississippi and its tributaries.

REPORT OF THE KANSAS COMMISSION.

The Report of the Kansas Commission to the Trans-Mississippi and International Exposition, held at Omaha, Neb., has just been published and 15,000 copies are ready for distribution to such as are interested in knowing what the commissioners did for the State, the extent of the exhibits, and the prizes, medals, and diplomas won by Kansas exhibitors. The 100-page report tells the whole story briefly and well. Kansas never did herself more credit at any of the great expositions than at Omaha, and in comparison with what was done by other States it is simply remarkable that so much was accomplished with so small a cash outlay.

The report contains the official report of the commissioners to the governor of Kansas, also a number of illustrations of the leading exhibits and the Kansas building, and describes in detail the agricultural exhibit, the dairy exhibit and scores, the horticultural display, the honey exhibit, mines and mining exhibit, the educational exhibit, the live stock exhibit, the railroad displays, and gives in detail the ceremonies attendant upon the dedication of the Kansas building, on June 22, and Kansas day exercises September 1.

The Kansas Commission consisted of Hon. G. W. Glick, Atchison, president; Hon. John E. Frost, Topeka, vice president and treasurer; Hon. A. H. Greef, secretary, Pittsburg; Hon. A. C. Lambe, Wellington, and Hon. A. W. Smith, Groveland. These gentlemen undertook the responsibility and attended to the details of the representation of Kansas at Omaha.

The commission has sent out most of the reports to the various State and county officers and members of the legislature. The State Board of Agriculture, State Horticultural Society, each have 1,000 copies, and the Kansas Improved Stock Breeders' Association has 500 copies for distribution.

To Feed Just Before Shipping--Rats.

Editor Kansas Farmer:—In your issue of January 12, a subscriber asks for information regarding the feed for fat cattle before shipping. All grain should be taken from them at least twenty-four hours before shipping. No salt should be given them, nothing but timothy hay or wild hay. Some feed fodder before shipping, but I think hay is the best. Give them all the water they need. As to how to feed in yards after arriving at market, the commission man can tell.

Last year rats found their way into our cellar. I bought cement and cemented the floor all over. First I took gravel five parts and cement one part, mixed it and moistened just enough so that it would stick together like mud does when you make a mud ball; then I spread this on the bottom of cellar thick enough so that, after it was pounded down, it was at least two inches thick. You can use any flat surface as a tool to pound with. I used a piece of oak plank 8 by 12 inches. Lay flat ways, bore a hole in middle and put a handle in it. After you lay two inches of gravel and cement, then take sand—such as is used for plastering—two parts and cement one part; mix thoroughly and wet it so that it will spread easily, and spread one inch of this sand and cement over the top of the gravel and cement and trowel it down smooth. You must not try to lay all of the gravel and cement and then put on the top coat, but finish your work as you go. Lay just enough of the foundation so that you can reach back and spread on thetop coat. If this work is properly done, you will have no more bother with rats. Any one who will try can do the work. I used the common cement that cost me $1.25 per barrel.

Lafayette, Ind. ASA MARKEL.

German Colonial School.

The following statements from a circular of the German Colonial School at Witzenhausen are of interest as showing what Germany is doing to promote the education of men who intend to engage in industrial enterprises in her colonies. Similar institutions are maintained in Belgium and Holland.

The purpose of this school is to educate young men to become practical superintendents of estates and plantations, planters, agriculturists, stock raisers, and merchants for the German colonial possessions.

The course of study, which is completed in two years, comprises the following studies: Plant culture in general, including the study of soils, climate, and fertilizers, farm management, bookkeeping, mechanics, engineering (bridge and road building, drainage, irrigation); special plant culture, animal husbandry and dairying; culture, use, and value of tropical plants; establishment of plantations; gardening; fruit culture; vegetable culture; viticulture; forestry; geology, with special reference to tropical mining; botany (physiology, anatomy, systematic, and geographical); chemistry, with laboratory practice; surveying and drafting; hygiene for tropical countries; veterinary science; colonial history and geography; a study of the people; the history of education, religion, and missionary work; colonial government, and commercial laws and relations; languages; trades (carpenters, masons, blacksmiths, harness-makers, bakers, butchers, etc.); practical work in field, garden, vineyard, forest, dairy, etc.; athletic sports of all kinds.

Pupils between 17 and 25 years of age are admitted.

Listing Wheat.

Editor Kansas Farmer:—The suggestions made by S. O. Thompson, of McPherson County, in your issue of January 12, as to drilling wheat in lister furrows 12 inches apart, is a forcible instance of intelligent adaptation of means to an end—of a system of tillage suited to soil, climate and surrounding conditions.

It is still a question whether winter wheat has ever been injured in Kansas by cold alone. A fruitful source of injury is the evaporation from the leaves, which is only a little less for the surface exposed when a cold, dry wind blows over the field, than when the July sun pours down upon them. The more the leaves of the wheat plant are exposed to the sweep of the wind, the greater will be the evaporation, and the difference in the amount of water transpired from the plants exposed on level surfaces and those sheltered by the lister ridges must be very great. This evaporation works no harm so long as an equal amount of water is available at the roots to take the place. The trouble to the plant comes when the leaf or stem is losing water to the air more rapidly than it can be supplied by the roots. Winter-killing comes largely from two conditions too frequently met with in the wheat fields of Kansas: One, a level surface and a loose soil, sometimes in spots, sometimes all over, that in dry open winters will not maintain enough available moisture to meet the demands of evaporation from the leaf surface; the other, when the roots are encased in frozen ground, the frost hindering the movement of water through the soil to the root as fast as needed to supply the loss from evaporation. To meet the adverse conditions two things are essential: One, a moist soil, the other, all possible protection from the drying wind to lessen evaporation, thus lessening the draft of the plant upon the water in the soil. Mr. Thompson's suggestions are among the best that can be offered to meet these difficulties. The lister furrow, in which the soil has been firmed by the press wheel, retains most moisture, and the ridge lessens evaporation by giving shelter.

Twelve inches is close enough to drill wheat if it can get the start of weeds in the spring, and a spring harrowing will not only level for the reaper but check the weeds, promote growth and save moisture through stirring of the soil.

The last ten years have witnessed the introduction of many new tools better suited to our Western conditions, but we will all rise up and call the man blessed who will give us a corn and a wheat lister that will work in newly plowed land. H. R. HILTON.

Topeka, Kans.

Is Straw Good Cattle Feed?

Editor Kansas Farmer:—I wish to answer a few questions asked in last week's Farmer. Is straw good feed for fattening cattle? It makes excellent bedding but shock corn that has the smallest ears is very good feed, or Kaffir corn, when thickly listed like other corn and cut when the seed gets hard, and properly shocked, makes excellent feed for anything. I am feeding a carload of cattle on Kaffir corn twice a day with the seed on. I have never had cattle do better. They seem to like the Kaffir corn I think it is as good as alfalfa or better, and Kaffir corn can be grown where it is impossible to grow alfalfa. In fact, Kaffir corn has largely taken the place of cane or sorghum for feed and withstands the drought as well.

Partridge, Kans. ZENO THARP.

Hog Millet.

Editor Kansas Farmer:—Will you or some reader who has had experience inform us whether broom-corn millet, or hog millet, as it is sometimes called, is a success in Kansas?

Denison, Kans. JOHN HOSACK.

Seed Breeding.

Scientists have proved by observation nd experiment that "in and in" breed- g, both in the animal and vegetable ngdoms, tends to weaken offspring, nd that crossing within narrow limits genetic relationship has the opposite fect. The law of crossing was first pub- shed by Andrew Knight in 1799. Dar- in made many painstaking experiments find out just what effect crossing or lf-fertilization may have upon plants. e found that crossed cabbage plants xceeded in weight those that were self- rtilized as 100 exceeds 37; crossed let- ce plants exceeded uncrossed in height 100 exceeds 82; maize. crossed and un- rossed, showed a difference in height as 00 is to 91. Prof. L. H. Bailey has ound fully as marked results in growing lants on a large or commercial scale rom seed resulting from crossing. Other cientists have observed similar results. he study of the many adaptations hich plants have undergone in the con- truction of the flowers to promote cross- ng caused Mr. Darwin to assert that Nature abhors perpetual self-fertiliza- ion."

The cereals, wheat, oats and barley, owever, very seldom cross in nature. Whether or not these plants have be- ome so profoundly altered by long cul- ivation that they have lost their orig- nal methods of reproduction, is an un- ettled question. When artificially com- elled to cross these cereals are no ex- eption to the rule that crossing within he species greatly increases the vigor nd productiveness of the offspring. Professor Bailey says that crossing is a evitalizing process. Knight crossed sev- ral varieties of wheat; and, in the years 795 and 1796, when almost the whole rop in Great Britain was blighted, the arieties thus obtained escaped the dis- ease. Many famous scientists have con- cerned themselves with attempting to race out the relationship of modern va- rieties of wheat. Some classifications place all known varieties in four spe- cies, some in five and some in seven; while other equally authoritative classi- fications refer all varieties to one spe- cies. Alphonso De Candolle, M. God- ron, Metzger, Loiseleur-Deslongchamps, Moorcroft, Professor Hildebrand and Professor Bentham have written more or less extensively upon the origin of cultivated wheat. Dalbert, Colonel Le Couteure, Philippar, Major Hallett, Pro- fessor La Gasca, Professor Henslow and Mr. Shirreff have recorded interesting experiments in cultivating and breeding varieties of wheat. M. Monnier proved that winter wheat can be transformed into spring wheat, and vice versa, in the course of three or four generations.

Some very interesting experiments in crossing wheat have been carried on within the past thirty years by a num- ber of famous experimenters. About the year 1875 Mr. Carman, the editor of the Rural New-Yorker, began a series of ex- periments for the improvement of the cereals. Mr. Carman, by judicial cross- ing of numerous varieties with Arm- strong finally succeeded in producing va- rieties of wheat in which the spikelets were double, and increased the number of grains per head from 35 to 108. He also succeeded in hybridizing wheat and rye and continued the crossing until the progeny had been brought back to seven- eighths rye.

Very interesting experiments are at present being conducted by the Garton Brothers at Newton-Le-Willows, Lan- cashire, England, for the origination of new varieties of cereals and grasses. Va- rieties of wheat rich in gluten but de- ficient in yield have been combined with high yielding sorts, and wheats of su- perior quality produced. In breeding wheat, they have taken varieties from France, Germany, Italy, Hungaria, Rus- sia, Turkey, India and Japan and have combined them with each other and with English varieties, and by selection have been able to fix almost any desir- able quality that may have happened to show itself. The most remarkable re- sults have been obtained with the In- dian varieties. These are naturally stunted and have short heads. When crossed with the more vigorous English varieties, they become strong and pro- lific, doubling the yield in grain and length of straw. By crossing English varieties with hardy sorts of foreign origin, the size and weight of the former have been much increased. The native English wheats frequently have the fault that causes the grains to shatter out if the crop is allowed to stand on the ground until over ripe. The Messrs. Garton have completely overcome this defect by crossing the native sorts with Triticum Spelta, a hardy species indige- nous to southern Europe. The combi- nation of Hardcastle White with Paine's Defiance, Victoria d'Automne, Talavera, Squarehead and Pedigree White resulted in two very different appearing valuable types, one bearded, the other smooth, in which the grains exceeded in weight Hardcastle White by 50 per cent. A composite cross was made with the par- ents Triticum Spelta (black), White Cheddam, Mainstay, Pedigree Red, Hardcastle White, and Hungarian Red, with the result that many totally differ- ent varieties were produced from the same parents crossed in the same way. Illustrations of six of these varieties derived from the third generation of a single grain are given in the Cable of June 18, 1898, in which the differences are so great that one at first sight would think them different species.

Messrs. Garton have produced wonder- ful results with barley. They have crossed the common bere with the best two-rowed sorts and have produced a barley equal in quality to the finest Chevalier varieties with a great increase in the number of grains produced per head. They have crossed the hardy six- rowed winter barley with the finest spring varieties and have produced hardy winter sorts, ripening very early and having the best of malting qualities. Smooth varieties looking very much like wheat have been produced by the use of Hordeum aegyceras, a species native in Northern India. Hulless or naked va- rieties have been crossed with the best malting types and some very interesting thin-skinned forms produced. The weight of seeds of barley have been in- creased 20 per cent.

Messrs. Garton found it very much more difficult to work barley and oats than wheat. After many fruitless efforts they succeeded in 1885 in securing sev- eral crosses of oats. These they sowed and crossed again with varieties from China, France, Germany, and Italy. A very interesting variety of naked oats was secured by the use of Waterloo Tar- tarian, Scotch Potato, Thuringer, White Canadian, Rugenscher, and the wild, naked oat Avena nuda. The influence of the parents used seems about equally balanced except in the case of the naked species, whose influence is very predom- inant. One of the latest varieties evolved has a head 23 inches long, with hun- dreds of panicles, each panicle contain- ing from 5 to 10 seeds. Numerous win- ter types of excellent quality have also been secured by crossing the finest spring varieties with hardy winter sorts. The increase of weight per grain in some of the best breeds is 60 per cent.

If the Garton Brothers can accomplish such wonderful results in England, why cannot we in Kansas accomplish simi- lar results? The question may be asked, why cannot we purchase seed of the Gartons and thus get the results of their labors immediately. This ought to be done, but we need not expect these new breeds to do as well here in Kansas as they have done in England. They are not adapted to our soil and climate. The only sure way for us to get superior va- rieties adapted to Kansas conditions is for us to breed them here. This work has been started at the Kansas State Ag- ricultural College. It should be kept up with untiring industry for several years to come, and every aid that science can furnish should be brought to bear upon the work. We are far better equipped to begin this work than were the Gartons a dozen years ago. We have a library of hundreds of volumes which tells us of the failures and successes of others who have attempted similar lines of work. We have a chemical department that will heartily co-operate in the determination of the composition of our cereals, and an agricultural department that is will- ing to push the work as far as financial means will permit. We have a micro- scopical laboratory and a botanical de- partment that have already cost the State thousands of dollars, the facilities of which are at the command of the seed breeder. The energies of the various departments concerned in this work should be focused upon the improvement of the cultivated plants.

If a variety of wheat could be origi- nated and disseminated that would pro- duce 10 per cent better yields than we get from our present varieties, the in- crease in wealth to the farmers of our State would be more than two million dollars per annum. There are wonder- ful possibilities along the line of plant breeding, and the writer hopes to be the humble instrument for the realization of some of those possibilities.

GEO. L. CLOTHIER,
Assistant Botanist Kansas Experiment Station.

He Won the Day.

An Irishman was foreman of a jury who had to try a man for murder. Word was sent to him that he would be paid £200 if he persuaded the jury to return a verdict of manslaughter.

This verdict was returned, and the friends of the prisoner came and readily paid the money.

"Did you have much trouble in getting that verdict?" asked one.

"Faith, an' I had an awful struggle," said the son of Erin. "The rest of the jury wanted to acquit him, but, begorra, I wouldn't give way!"—Answers.

A Point of Honor.

Last June Mr. Augustine Jacquelin Smith, of New York, son of the late Mr. Augustine C. Smith, of Winchester, Va., was at the University of Virginia as the representative of Mr. C. B. Rouss at the dedication of the Rouss physical labora- tory, which the blind millionaire fcunded. While here Mr. Smith met a lady, descended from William C. Rives and bearing his name, and related how his father and the statesman had once appeared on the field of honor as mortal antagonists. Recently Mr. Smith has written an account of this affair, from which the following is taken:

"My father when at William and Mary College in 1808, had as classmates John Tyler, afterwards President of the United States; William C. Rives, afterwards United States Senator and Minister to France, and Abel P. Upsher, afterwards Secretary of State under Mr. Tyler. They were like brothers. But one day in a heated discussion between them, the purport of which I never learned, words of a not very amiable nature were ex- changed between young Rives and my father, and they went out upon the field designated by the code where wounded honor was to be vindicated. North Caro- lina was selected as the place where the battle would take place, and to that State the combatants quickly repaired. A ven- erable-looking gray-haired old gentle- man in the neighborhood of the spot chosen for the contest had been told of the suspicious assemblage, and he has- tened to the scene. He reached the ground just as the principals had taken their positions for hostile action. He pleaded for a hearing. He told of his own experience of a similar nature—of his having killed a dear friend on the field of honor for a trifling matter that might have been so easily settled but for false pride. He told of his unhappiness since, and of the never-ceasing remem- brance of the sad event and of the scene upon the field when the mortal wound had sent into eternity a young man in vigorous health and of splendid ability. He spoke, also, of the misery that came to more than one household because a dear one had been slain. As he told all this the tears rolled down the furrows of his kind-hearted but sad face. The effect may be imagined. Each face was moist- ened with the tears that could not be repressed. His story was the counter- part of the case which had brought the two young men before him who were then facing each other in hostile atti- tude. They all recognized this fact, and a halt was called. A reconciliation took place, and both principals lived many years afterwards to serve their country with distinction—Mr. Rives to become one of the most distinguished men of the time in the civil department of the re- public, and my father to serve his coun- try and State in both the military and civil service, as a colonel for years in the regular army, and after his resig- nation in order to return to the bar, which he preferred, to serve with dis- tinction in the Senate of his native State."—Richmond Dispatch.

The Soliloquy of a Ship.

I went into the battle gracefully, as became me, and when the shells came and rent my sides and burst in my very vitals, then I perished, with dignity, and with no loss of honor. The enemy had conquered. I sank. I had done my duty. I was content.

And as I lay at the bottom of the kind, warm sea—the sea that I had so loved when sailing it in the grandeur of my war paint—there came to me the touch of alien hands, the pressure of bars, the tugging of many chains. And then I was dragged, all mutilated, into the sunlight. They brought me back to a life that was less desirable than death because of the bitterness of my grief.

And there was more to come. They put aboard of me an alien crew—some of the very men, maybe, that had sent me to my doom. And they lit my fires and took me away, these men that had killed or imprisoned the masters I had loved. I, the vanquished, was to go to a con- queror's port and be pointed at and rid- iculed by a curious mob. "That," they would say, "was once the Maria Teresa." Can you think of a bitterer fate?

Do you know that those fires in my boilers burned my soul, and that my rud- der tore and strained 'neath the touch of the alien helmsman's hands? To drag me from my decent grave and make me a show-ship for the herd! Oh, pitiless!

But the sea—the ever gracious sea—was kind to its own. For when the winds howled and the surge rushed gallantly by, then I reared up my bows and defied them; and they cut me loose, as my right, and away I raced into the tempest and the black night—alone, defiant, tre- mendous!

Only the cold sky and the wheeling gulls saw me fret and stagger away across the mountainous seas, a menace to others, a torment to myself. But one thing mind, ye valorous warriors of the West: You shattered me in honest fight. You sank me. That was fair. But when you tried to take me back—to make me serve an enemy!—then I rebelled; and I defied you; and I mocked you; and the sea, which respects all honest ships, was still my friend, and helped me in my su- preme defiance and in my eternal escape. And here, where I lie against a kindly reef, secure from profaning touch, and slowly crumbling to shreds in the cease- less wash of the waves, I laugh and laugh again. You could slay me, but you could not take me prisoner.—Eustace Gaunt, in the Criterion.

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To look after renewals and to secure new sub- scribers. A good agent can earn not only good pay, but will share in the $11,500 to be divided—April 15th—among the best agents.

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Philadelphia, Pa.

Preserved Eloquence.

A group of literary men were discuss- ing the other day the rarity of spontan- eous eloquence or wit.

"I was at a dinner once in New York," said one, "and was seated next to Major Hay, who, you know, had been Lincoln's secretary. Somebody making a speech exclaimed:

"'In genuine eloquence the words come hot from the heart. No nobler speech was ever uttered in America than Lincoln's address at Gettysburg, and I am assured it was wholly spontaneous. He had not given it a thought before he rose to speak.'

"'While he was delivering it,' said Major Hay to me aside, 'I had the fifth copy of it in my pocket.'"

"I, too, remember a dinner in New York," said another, "at which all the foremost men in journalism and litera- ture were present. The speech of the evening was made by George W. Cur- tis. It sparkled with wit and apt allu- sions to the men present, evidently in- spired by the moment. Once he stopped, interrupting himself, and exclaimed:

"'I see my friend Judge D. looking at me doubtfully, but I must remind him that he, too'—going on with some bril- liant raillery that brought down peals of laughter. As we rose to go out I said to the editor of a Boston paper:

"'Who but Curtis could pour out im- promptu wit like that?'

"'Impromptu?' said the newspaper man. 'I had proofs of all the speeches given to me this afternoon to send to Boston to-night. Let us look at his.' We looked, and there it all was, word for word, even to the 'I see my friend Judge D. looking at me doubtfully,' etc.

"I knew Artemus Ward," said a third man, "when he was a reporter on a Cleveland paper. One evening in the office he told a story, apparently a mere trifle, the flash of a moment.

"'Browne,' said the chief, 'how can you say such clever things offhand?'

"'Offhand!' muttered Browne. 'I told that to myself fifteen times this after- noon!' Ten years afterward I heard him tell the same story to a brilliant London audience without the alteration of a comma."

"Even to make a good joke," remarked a listener, "work apparently is needed as well as genius."—Youth's Companion.

Horticulture.

IMPORTANCE OF HORTICULTURE.

By A. Willis, Ottawa, Kans.

In the discussion of this subject we shall assume that horticulture is important, and shall say somewhat of why it is important and of what its importance consists.

First, then, why is it important? In considering this part of the subject we will say that the study of horticulture, as of others of the fine arts, music, painting, architecture, and others, broadens the intellect and improves the mind. Horticulture is not the only study that makes man better, but it is one of the studies that does, and every effort to prove that man should be wiser and better is a link in the chain that proves the importance of horticulture; the community is so convinced of this that few men in it but would give of their means for the education of their children, and this idea has expanded until the people have crystallized this sentiment into law, lest voluntary gifts of those interested should fail to produce the amount of education needed by the young in the community; and now every man who has property must assist in the education of every child who will attend school and take the education offered. This is done in the belief that the community is better off for the assistance thus given to educate the young. This education might be given if there were no such thing as horticulture, but who has ever seen a person whose eyes have been opened by education to see the beauties of nature who will not say, "Surely, here is proof of the importance of horticulture." So we will say it is important because it furnishes one of the most powerful incentives to education, to study, and to purity of life. Who that has had his eyes opened to the beauty of the rose, for, good friends, only the educated eye can see the beauties of nature in their innermost depths, and while in this life the educated eye sees through a glass darkly, and the educated mind longs and prays for a closer union with the Being that made the rose. We know this from the fact that in horticulture, as in other arts, excellence comes from study, and year after year fact and beauty, one after another, are presented to the educated eye that others see not, other minds comprehend not. To the ox, if a rose is food it is good; if not, it is passed by without notice. To the savage, a rose is a rose, and that is all, and not much of that. To the educated in horticulture, a rose is a marvel of beauty; through it the Creator speaks in love to those who seek him. Behold the importance of horticulture to this man. Let us turn away from man to look abroad in this city and see the beautiful, beautiful trees that line its streets, and as we pass street after street, and row after row of these perfect, graceful trees present themselves to us, and on and on we go, and still these marvels of beauty in tree form are before us until we are weary of travel, and sit down and rest and think, and tell me if the importance of an art that brings into being such a scene can be measured. I tell you, my friends, the reason horticulture is important is before you. Anything is important that can present to man such an effect, and it is important because it can produce such an effect. But, so far, we have only spoken of the streets. Go to many, O, how many, homes in this city, and behold the lawns and gardens. Go to those homes this day and see in them the green and crimson and white of plant, and of flowers, and see the labor and sacrifice the inmates of those homes will make to protect these horticultural treasures from frost and unfavorable influences of weather and air. Note, too, the efforts they will make to promote health and thrift and bloom under the most unfavorable conditions, and then tell me if you will not acknowledge the importance of an art that can bring such beauty and devotion into being, and then, when you have beheld these treasures in their beauty, tell me if the fact that an art can bring such treasures into being is not sufficient to establish its importance.

We have now said something of why horticulture is important—only a little—we should be glad to say more but space forbids, so we will now speak somewhat of what its importance consists. I will say its importance consists of this: It has contributed its share to make a savage grow to be a man; it comes to our table as food, with its fruits and vegetables, and thus adds to the comforts and pleasures of living. Tell me, if we banish from our tables the fruits, fresh and preserved, canned and cooked, and if we were to have no more vegetables, and from now on our bill of fare is plain, necessary foods, would we not at once see the change, and who would not regret such a change? Banish from our streets the trees, and from our lawns and gardens all horticulture, and restore the wild sod as nature gave it, and the Indians neglected to change it; banish from your homes the plants and flowers; banish your parks, orchards and vineyards; discharge your gardeners and laborers; hoard your money; starve out of your mind the aid, the visions of beauty this art has created; blind the eye and palsy the hand that brought these beauties into being—but, friends, this thought has not yet reached the end; the picture is not yet finished; I will not finish it; the scene is too dark; it is not pleasant to think of. Now that we see something of its importance let us cherish and nurture it; let us study it; let us teach it; let us try to so understand and love it that we may, through it, draw man to its author, and from Him learn yet more and more, until we shall have gathered the treasures its beneficent author has in store for us, while, as opportunity offers, let us extend a helping hand to all who would, with us, enjoy the delights of this important and useful art.

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Willard—A beautiful, deep blood red; bunch small to medium, very compact; an excellent shipping grape; pulp tender, flavor pure, free from all foxiness, very sweet, approaching in quality the Delaware, of which it is likely a seedling. It ripens with the Delaware, just before Concord, and if any grape is likely to supersede the Delaware it would be this grape; nearly equal in quality to the Delaware and of twice its size, while the vine is a much more vigorous grower.

Sterling—Color white; bunch small; berry medium; a good shipping grape, ripening with the Concord; pulp tender, melting; flavor pure, very sweet and rich; quality, for table use, of the highest excellence. I know of no grape, of any color, superior to it in quality. The aim of grape growers has been to secure vigor, productiveness and hardiness of vine, with improved quality of fruit. This, I think, has been attained in the three varieties described. They will be offered for sale in due time.

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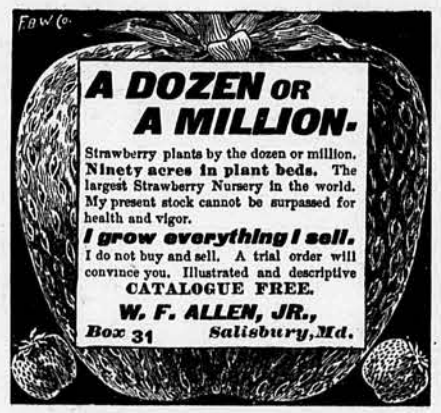

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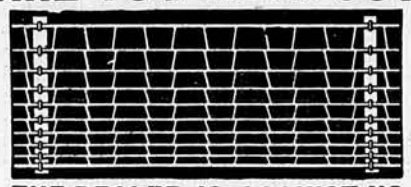
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In the Dairy.

Conducted by D. H. OTIS, Assistant in Dairying, Kansas Experiment Station, Manhattan, Kas., to whom all correspondence with this department should be addressed.

PRODUCING, RETAINING, AND CONTROLLING FLAVOR IN BUTTER.

Paper read before the Kansas State Dairy Association, November 17, 1898, by Prof. G. L. McKay, Agricultural College, Ames, Iowa.

Mr. Chairman, Ladies and Gentlemen:—I am always pleased to meet the Kansas dairymen. Your up-to-date dairy meetings, and your Western rush and energy, give us that live east of you new impetus to go back home and do a little better work. In this great Western butter belt the making of fine butter is not confined to any one factory, township, county or State. Your chances are as good in Kansas as anywhere in the West.

It is true that your climate is a little warmer in the summer months than some of the other States, but with your refrigerator machines and a little more education of your patrons in the care of milk this need not give you any trouble. I have great hopes of Kansas becoming one of our greater dairy States.

FLAVOR.

The most important single quality of butter is its flavor. This is not to be wondered at, as flavor counts from 45 to 50 per cent of the total in scoring. Everything that affects butter is of great importance to the butter maker. It is only within a few years that the theory of flavors has become partly understood. The effect of food on flavor is a question not yet settled. We do know that when cows have access to leeks, turnips, onions, cabbages, potatoes, etc., that the milk has very offensive odors which are transmitted to the butter, unless the milk or cream has been Pasteurized. The obnoxious odors seem to evaporate during Pasteurization. Some maintain that the germs or bacteria that produce the disagreeable flavors get into the milk from external sources. I am not prepared to substantiate this.

It is true that we conducted a series of experiments at the Iowa station during the winter of 1895 on the effects of food on the flavor of butter without finding any marked difference except when turnips or cabbages were fed and the butter was made from raw cream. From these and other experiments I have come to the conclusion that the food consumed by the cow does not affect the product as much as is generally supposed, and that the fine flavor of butter is largely a product of fermentation. Another quite common theory is that milk fom strippers, or from cows along in the period of lactation, is responsible for the low flavor of butter during the winter months. It is true that as the cows advance in the period of lactation.the fat globules become smaller and the milk becomes more viscous, thus rendering it difficult to churn. Frequently the food consumed by the cow is of such a nature as to produce hard butter at this period. We do not only experience great difficulty in the separation of such milk, but also in the ripening and churning. As the cow approaches parturition she is inclined to be more excitable, which in some cases affects the quality of her milk.

We succeeded in making butter at our school from the milk of cows that would average near seven months in the period of lactation that scored 97 by some of the best experts in the country. The cows were carefully looked after and the cream was ripened with a good starter. This would also indicate that flavor was a product of fermentation.

If anyone has a theory, and can demonstrate to the public that it has merit, the public will usually accept it for what it is worth. Some theories have fallen flat, as they would not stand a practical test.

ORIGIN OF FLAVOR.

I believe that the high flavor of butter, or quick aroma, is due to the breaking up of the milk sugar in the process of ripening, and is possibly the product of a series of germs.

If we churn cream sweet, no matter how well the cows are fed, the butter will lack flavor and our losses of fat will be great in the buttermilk. If cream is allowed to ripen too much we get what experts term sour butter, or what I would call almost a rotten-egg flavor. From these facts we must consider that cream ripening is a very important point in butter making. The common theory used to be that when cream assumed a smooth, granular appearance it was fit to churn, but this is not always correct. I will say, however, that when cream is ready to churn it will always have that smooth, granular appearance. I presume that some of our prominent butter makers have observed the condition of their cream when the have made some extra fine butter and found it to have a nice, smooth, granular appearance, so this has been handed down to us as a test when cream is ready to churn. I have seen cream have this same appearance when it was not near ripe enough to churn.

THE STARTER.

In natural ripening the fermentation is due to the growth of a variety of organisms that gain entrance to the milk and cream from the time the milk is drawn until the milk is churned. When cream is ripened by a starter we attempt to control the fermentation by adding a large number of bacteria of a kind that we expect will give us the desired flavor. The majority of the lactic acid species are evidently flavor-producing germs.

Professor Eckles, of our school, has made many bacterial analyses of cream when ready to churn, and he found the percentage of acid bacteria was estimated to be between 90 and 95 in the best cream. He found one case where the percentage went down to 81. This was very poor, tainted cream.

The butter that scored the highest on flavor at Topeka, at the national convention, last year, was made at our school, and the cream showed 92 per cent of acid bacteria.

Many of you have observed, no doubt, that a great many butter makers make good butter in the summer months but are not successful in the winter months. Now, there must be some reason for this. Most of the milking is done in the open air during the summer months and the germs that get into the milk are not so injurious as to flavors as those that come from the stables.

PASTEURIZATION.

Possibly the reason that Pasteurization has become so general in Denmark is that their cows are stable fed most of the year.

Professor Eckles has made a number of tests of milk coming in from different patrons, at different times of the year. The results he will publish later on in a bulletin article. Of 100 samples taken, March 5, only 12.5 per cent showed pure acid flavor; 39.5 rapid decomposition of curd. On April 8 he found pure flavor 50 per cent, impure acid 26.7, rapid decomposition of curd 23.3. On May 10, 90 per cent of pure acid flavor and 10 per cent impure. On July 13, 90 per cent of pure acid flavor and 10 per cent impure. Thus it will be seen that during those months that milking is done outdoors the cream, as well as the butter, is better.

We found that a great portion of our milk, last winter, seemed to contain bacteria that had the power to coagulate the milk without souring it.

GERMS THAT ARE NOT WANTED.

I think that, possibly, a lot of the low scoring at the national convention was due to this condition. During the time that our boys were making butter for that convention one of them, in his great desire to get an extra good starter, bought the milk from a friend of his who had a number of fresh cows and had nice clover hay for them to eat. This young man went to the place and did the milking himself, after carefully washing the udders. The milk was thoroughly aired as soon as drawn.

Every precaution had been taken to keep the milk in good condition, yet when it soured it had about as disagreeable a flavor as I ever came across. Not being satisfied with the first lot he repeated the whole experiment for another starter, but obtained about the same results. The only reason that I can give for this was that the stable where the cows were kept was a poor, badly ventilated building, with low ceilings, and the bacteria that got in the milk from the barn were undoubtedly of the putrefactive kind.

SELECTING THE STARTER.

In selecting milk for a starter, the fermentation test would come in very useful. A good starter should sour with a pleasant acid taste. It should coagulate solid without any pin holes. The amount of starter that should be used will depend somewhat on the condition of the milk received. If you have a good starter do not be afraid to use a good per cent in winter months. I would advise from 15 to 20 per cent.

TEMPERATURE.

The temperature that cream is ripened at is not a very important factor in the making of good butter. From 60° to 90° F. will give very good results. If I were going to specify any set rule, I would say 65° for summer and 75° for winter months.

It is not the temperature that you ripen at, but the degree of acidity that you ripen to that is the most important to observe.

POSSIBLE TO SCORE HIGH.

I think it possible for any butter maker who thoroughly understands his business to score from 95 up, and do it every time. In fact, I believe I could raise that one point and be within the limit.

To demonstrate this more thoroughly I will mention the Genesee salt contest which has been going on for six months in Chicago and has just closed. Many of the best butter makers in the United States have been competing. The sweepstakes went to M. W. Ashby, of Hazleton, Iowa, with an average score for the six months of 97.79 1-6. He was one of our students in the class of 1894. The second place went to C. L. Passmore, of Iola, Wis., with an average score of 97.62½. He is a nephew of Governor Hoard, so comes of dairy stock. He was a student of our school in class of 1895. Another one of our boys from the class of 1895, Louis Scaack, made an average score of 97.41⅔. Still another from class of 1894, August Johnson, of Bancroft, Iowa, had an average score of 97.18¾.

To this I might add the record of three of our boys at the National last winter, who were in the final eleven that were picked out to select the sweepstakes from.

These facts show what trained butter makers can do.

PROPER ACIDITY.

We endeavor to ripen cream so as to contain about .64 of 1 per cent of acid. This I mean for 30 per cent cream. If you are using the alkali solution, this would mean that it would take 36 c.c. of cream used. When you go to .70 of 1 per cent, you are approaching the danger line. If good starters are judiciously used I do not think that you will have any complaint about winter conditions. If you have a patron that always brings you good milk, and you find that it will sour with a pleasant flavor, you may be sure that you have the right kind of bacteria present. Milk of this kind you can put in your cream vat without separating; that is, you can use a few cans of such milk and then separate your cream heavy enough so that you will have the desired per cent of fat. We used this method in the winter months and found it to be a great benefit in helping the flavor of butter.

PURE CULTURES.

One prominent bacteriologist has said that after natural starters have been used a few times they become pure cultures. We have found the Douglass culture to make an excellent starter. Our Mr. Eckles has a culture that has given fine results. In fact, one lot of our butter that was made from Pasteurized cream, and ripened with this culture, scored perfect on flavor in England. The culture is of the acid species.

FOOD AND COMPOSITION OF MILK.

I do not wish to convey the idea that food has no influence on the composition of milk. I believe that the utmost care should be given by the patron to provide good, clean, succulent food and water during the summer months. The patron should try to get his milk to the creamery in the best condition possible. Then it is the duty of the butter maker to make the finished product. It is impossible for a workman to produce fine goods in any line of work where the raw material is faulty. Boys, keep your creamery in a condition that you will not insult the intelligence of your patrons by asking them to bring good, clean milk to a dirty creamery.

I have been in the dairy business twenty years, and have conversed with hundreds of patrons both in the East and in the West, and have never met one who did not admire cleanliness around the dairy buildings. It is always easier to lead patrons than to drive them.

SCORING.

One more point a butter maker should be posted in is scoring. I cannot understand why a butter maker that will score 98 or 99 in one contest will allow butter to go from his creamery to another contest that will score down to 90 or near that point. A butter maker should know good butter when he sees it, if he expects to make a success of butter making.

Possibly some of us at the dairy schools have been a little careless in not requiring more scoring to be done by the students.

Class of Stock Demanded From Breeders by the Dairy Interests of Kansas.

(The following discussion took place upon the delivery of the above-named address, by Prof. D. H. Otis, of Manhattan, Kans., before the Kansas Improved Stock Breeders' annual meeting. The paper in full appeared in this department last week.)

DISCUSSION.

Mr. Cook: I heartily indorse the Professor's remarks, particularly in regard to pure-bred sires. They should always use a pure-bred sire. The stock breeder of any class is away behind the times when he undertakes to breed anything but a first-class sire. It won't pay to breed anything but first-class, either in horses, cattle, hogs or anything.

Mr. Thompson: I would like to ask the Professor if he has any information along the line of the value of Devonshires.

Answer: No sir, we have no Devonshire cattle out at the college, and I know of none of them in the State, consequently we have had no experience with them.

Mr. Hubbard: Why not give us your experience, Mr. President? It is better than that given in the discussion here.

Mr. Cheney: I am afraid it will take too long to give you my experience.

Mr. Hubbard: Didn't you say you got ninety odd dollars profit on two cows this year?

Mr. Cheney: No; that was someone else. That was Maguire. Give us your experience, Maguire.

Mr. Maguire: Well, I have five ordinary good grade cows. They are good milkers, and the last two years I sold their calves for $27.50 each, and the milk and calves amounted to $99.35.

Question: From two cows?

Mr. Maguire: From two cows during the year. I milked them the whole year and they went about fourteen months between calving, but I am not counting out any feed for this. They ate corn, corn stalks, and plenty of good pasture. They did not get any alfalfa, but they ran on buffalo grass pasture, and I fed them cane during the dry part of the year.

Senator Householder: I desire to say a word on this subject. I have had just a little bit of experience upon this line, and I want to emphasize the suggestion made by the Professor, in the use of pure-bred bulls. I don't care for what purpose you are breeding cattle. I have had some experience in breeding pure-bred cattle and have been very successful in showing them at different fairs. I have handled them to a limited extent for the past few years and I want to emphasize the advice of the Professor in that we should all use pure-bred males in the breeding of stock of any kind. I also want to emphasize the fact, as the Professor says, there is another requirement, and that is feed. You may use pure-bred bulls in the breeding of milch cows and you may select the finest milch cows you have, but you will never have any first-class results unless you pay some attention to feeding. I have handled Jersey cattle, particularly a butter breed, and I believe that I have found just as many pure-bred Jersey cows that were not fit for milkers any more than a Shorthorn, even though they be pure-

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bred. Now, on the other hand, to show you the idea I have, you can make it pay, as the Professor says. A mill can not make flour without it has the wheat, neither can the cow of any breed make milk or butter without it has plenty of feed. Three years ago I went out to the country to buy a cow and I ran across a grade Shorthorn. Now, that cow was really a good cow, a good milker and a good butter-maker, but the owner did not realize that she was a very extraordinary cow. I bought this cow at a very reasonable price, in her fifth year. She gave, when I bought her, about two and a half gallons of milk per day. I fed her after my manner of feeding, and before she was fresh again I had her giving three and a half gallons per day. I dried her up about six weeks before she was fresh, but during that time I gave her a very liberal amount of feed until she was fresh. When she was fresh again she gave five gallons per day, and we then put her on the churn test. We had more help at that time and the other cows did not give us the amount that we needed, and we did not allow the milk to settle until the full amount of cream had raised, but in an even seven days milking from that cow we churned fourteen pounds and ten ounces of butter, right from the churn, and the man that I got that cow from did not know that she was more than an ordinary cow. We have her heifer, 2 years old the last of this month. She was fresh in December. She was bred to a pure-bred Jersey bull, and she is now giving four gallons of milk per day. I want to impress upon the minds of the stock breeders of this State that the two prerequisite points to be borne in mind are, first, pure-bred sires, and, next, good feeding. We must give our stock better care and protection from the cold.

Mr. Burton: I have not had very much experience along this line; it has been very limited. Almost five years ago we made a contract to furnish milk for the patients at the Santa Fe Hospital, and we started in with Holstein cows. At first we were very well satisfied with the quality and quantity of the milk, but as we worked along and became more familiar with the cows, we were dissatisfied with the quality, but not quantity, and we concluded to infuse Jersey blood in our stock, which we did, and we disposed of every Holstein cow we had with the exception of one, and in disposing of the last one we did it in this way: Dr. Green, who is inspector of the milk at the hospital, located on Jefferson and Sixth streets, came down to look at our cows, and he said to me: "When you send the milk in, don't say anything to the man that brings it, or to the cook, and put that cow's milk in with the rest, and another time leave her milk out, and I will telephone you how it comes out," and he hit it every time; and, by the way, we were furnishing from ten to fifteen gallons of milk per day. We disposed of that cow and we have used a pure-bred Jersey bull all along. We have just one of the original cows that we started in with, together with her 3-year-old calf, and those two cows today give eleven gallons of milk, but the heifer calf gives much better milk than her mother. I want a little information. The old cow will average, I think, five gallons per day the year around; when she is fresh she gives more than six gallons, and we have a de'il of a time with her to save her bag. Last year we commenced to milk her about a week or ten days before she was fresh, and we also had to use bran sacks on her bag.

Mr. Crawford: I have had a little experience along that line in the dairy business. The great trouble is in feeding too much before calving and too much immediately after, and feeding has more to do with that than anything else. I have a cow that is troubled in that way and I use that precaution. My experience is this, that a cow is very much like a bank, and if you do not put anything in you don't get anything out. That is the way it is with a bank, and I think it is the same way with a cow. If you do not put a lot of stuff into her, you don't get anything out. Sometimes it is a poor bank, and sometimes it is a poor cow, too. But I am speaking of a good cow and a good bank. In the first place, we must have a good individual, and she must be built, as Professor Otis has said, for milk. And as the Senator has said here, a few minutes ago, there are nine-tenths of the farmers that don't know their good cows from their poor ones. They will sell you a good cow just as quick as any worthless cow on their farm.

Mr. Cottrell: I just want to answer this question in regard to taking care of that cow. I have been handling record-breakers for five or six years, and the secret of that is that you want to dry them up about eight weeks before calving, and if you want to prevent that trouble with their udders, keep their bowels loose. That is the secret of the whole business.

Delegate: I would just like to ask that gentleman if he thinks it best to dry that cow up at all? Had he not better continue in milking her.

Mr. Cottrell: In regard to that, it depends upon the breed. Take any of the breeds rich in butter fat, and if you do not dry the cow up you simply cut down the next year's yield from one-fourth to one-half, and if you want to get a rich yield next year you must dry up that cow that is rich in butter fat.

Delegate: Now, about this forcing the feed. It is true that a cow is a machine; and if a man is a producer of fast horses, he knows, as everyone else does, that if he has a 2:10 horse and drives him at that rate all the time, he is going to drive him into the grave. And if this gentleman is going to force his cow, he is going to drive her into the grave; there is no two ways about it. That is one of the most delicate things we have to meet; and I do not know of any way, only just continue milking or pretty near starving her to death.

Mr. Cottrell: I have forced cows for five or six years, and have made records on cows 15 or 16 years old, and if a cow can stand forcing I never stop her.

Delegate: I have been feeding for ten years and feed everything, and have as fine a silo as there is in the State. I feed them cane, clover hay, or anything I can get hold of. I give them bran, oil meal, and corn chop. Of course, I use some judgment about changing the feed and make them eat it up clean, but I have never killed a cow with it yet.

Mr. Householder: Just one more word. In that matter I have had a little experience. I had one cow that was in show condition, from her calfhood, and she was a winner when I quit showing her. I got her from Mr. Wilhoit, in Indiana. She took the first premium in her class at the Missouri State Fair, the Iowa State Fair, Illinois State Fair, and the Nebraska State Fair, and she was yet the winning cow at 13 years of age, and had not died from full feeding. Of course, I did not feed her on corn, by any means.

Mr. Cottrell: Forced feeding on balanced rations is perfectly safe.

Delegate: This gentleman is certainly an expert feeder, or he could not have his cow giving six gallons of milk per day without overdoing the matter, or by starving her to death. I mean by this, the manufacture of that six gallons of milk per day.

Mr. Treadway: I would just like to add a word. I have bred Jersey cows for fifteen years past. I am discarding them now. We aim to dry our cows up from six to eight weeks before calving. Some it is almost impossible to dry up and we continue to feed them; others we have no trouble at all in drying up. We do this to prevent gathering. There is no danger at that time with bran, but where they begin to make bag, and their bags become distended, apparently beyond normal condition, begin to milk that cow once a day, and at calving time go right along, and there will be no trouble. We have practiced this for many years. I have seen the bag drop off. It did not hurt the cows, for we sold them for butchering purposes afterwards for reduced prices.

Mr. Cheney: Mr. Hubbard asked me for my experience along the dairy line, which covers a period of twenty years in the dairy business. I simply want to give you two little items that have come to my mind since I have been listening to the conversation. One of them: I sold a registered Holstein cow to Mr. Geo. Bushong, of Topeka, who reports to me that he sold five gallons of milk per day for 365 days for 5 cents a quart. The other item which I wish to give is this: I sold a cow last fall to Mr. M. E. Moore, of Cameron, Mo., who had her officially tested by an expert from the Missouri Agricultural College, and she gave, through the seven days' test which he made, 436 pounds of milk, which made 24 pounds and 10 ounces of butter. (Great applause.)

Does Milk Pay?

Do you know milk brings as much money in Nebraska, Kansas and Colorado as in Iowa, Illinois and Wisconsin, and it is the only farm product that does? Do you know that milk is the only thing on the farm that has always brought a profit every year since the war? Do you know that, ordinarily, a car of butter will bring as much as one hundred car loads of corn? Will it pay to save the freight on 99 cars? Ask the people of the dairy countries if it pays. Do you know that the farm mortgage indebtedness of one county in Minnesota was reduced from 72 per cent of the valuation of the entire county to 4 per cent in ten years? Does your present business pay so well you do not want anything better? If so, smash up the old churn, buy your butter and give your wife a rest. W. W. MARPLE.

Good Milk.

By A. Jensen, Manhattan, Kans., in his Creamery Patrons' Circular for December.

"I want to thank all my patrons for assisting me in securing fourth prize out of 130 entries at the Dairy Convention, held in Topeka, a little over a week ago. My butter scored 96 points out of a possible 100; the highest only went 97 or one point above me, the lowest score was 88 points. There will be another National Convention at Sioux Falls, S. D., in January, and I want the co-operation of all my patrons in the way of fine, clean milk, and I will guarantee to do the rest. I think it is gratifying to state that all but a few of my patrons use creamery butter, more or less, and that when you can buy farm-made butter at 3 or 4 cents less per pound on the open market. I have an excellent market for my butter, and I want to keep up the quality at all times. I prefer to see the patrons when pay-day comes, to sending out the checks, for the reason that I like to see people when they are pleased, and when not, like to know the reason why. I have no objections to sending out the checks when ordered so."

Let the Blood Flow to the Udder.

Any excitement or disturbance of the animal system always affects the milch cow. In April, 1898, the Kansas Agricultural College purchased 12 head of cows from Lincoln County, which had to be forwarded by rail for over 100 miles. Records were kept from each individual milking and it was found that, with the ride, homesickness and change of feed, it took nearly two weeks for these cows to return to their normal quantity and quality of milk. Observations since then have demonstrated that any unusual excitement or disturbance always influence the milk flow. A little knowledge of the structure of the udder will show why.

The udder is composed of cavities, or milk cisterns, and milk ducts, surrounded by muscular connective and fatty tissues. At the end of these milk ducts we find small cells which have the property of secreting and transforming nutrients from the blood into milk. These cells are most active at the time of milking, and, in fact, a large part of the milk is elaborated at this time. This necessitates a good supply of blood to the udder during the process of milking, for it is impossible for these cells to manufacture milk without fresh supplies of nutrients from the blood. Any excitement that tends to contract the muscles of the udder or turn the blood to other portions of the body will cause a decrease in flow of milk. Beating the cow with a milk stool or speaking to her in harsh language may cause the blood to flow, but not to the udder. Even feeding the cow while milking her is a bad practice, as it tends to divert the blood from the udder to the digestive tract. Every act of the milker and every surrounding of the cow should be such that the latter will give her whole attention to the secretion of milk at milking time. In other words, allow the blood to flow to the udder. D. H. O.

A Fatal Pause.

At 5 o'clock Marlborough launched the great attack. Slowly at first, but gathering momentum as they advanced, the long lines of horsemen came on. The air was full of the clangor of scabbard on stirrup. The squadrons were just stretching themselves out into a gallop as they reached the summit of the ridge, when they were smitten by the fire of the French infantry and artillery. So deadly and close was the volley that the leading squadrons went down before it, and for a few wild minutes, under the canopy of whirling smoke, Marlborough's horsemen were in fierce confusion.

That was the moment for a counter-stroke. Tallard saw it, and gave the word to his cavalry to charge. They were more numerous than the British, yet they faltered. "I saw an instant," wrote the unfortunate Tallard afterward, "in which the battle was gained if"—his cavalry, in brief, had charged. But it failed to charge. The moment of possible victory vanished, and over the crest, with bent heads and wind blown crests, the gleam of a thousand swords and the thunder of innumerable galloping hoofs, came the British cavalry.

Tallard's center was broken as with the stroke of a thunderbolt. His infantry was swept into ruins, his cavalry hurled into disordered flight, and his army fairly cut in twain. His left wing fell back, fighting desperately, but his right, the elite of his army, was hopelessly shut up in Blenheim itself. As night fell Marlborough drew his lines closely around the village. Webb, with the queen's regiment, blocked one avenue of escape, and a cavalry force—one regiment of which consisted of Scots grays—guarded the other. The French general in command of Blenheim, believing the situation to be desperate, ignobly abandoned his men and tried to swim his horse across the Danube, and was very properly drowned in the attempt.—Cornhill.

Sharples Quality.

Every farmer who keeps five or more cows can afford a hand separator. In fact, he cannot afford to be without one. Avoid all mistakes and useless expenditure by buying a

Safety Hand Separator.

They not only represent highest quality in such machines, but stand for highest quality in product as well. They skim clean, turn easy, last long and cost nothing for repairs. Send for circulars.

BRANCHES: Toledo, O. Omaha, Neb. Elgin, Ill. St. Paul, Minn. Dubuque, Ia. San Francisco, Cal.

P. M. SHARPLES, West Chester, Pa.

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Take Laxative Bromo Quinine Tablets. All druggists refund the money if it fails to cure. 25c. The genuine has L. B. Q. on each tablet.

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FOR THE FARMERS OF KANSAS.

The war with Spain has emphasized the fact that a weekly newspaper, for general news, is too slow for the up-to-date, progressive farmer. Thousands who could not take a daily have secured in

The Semi-Weekly Capital

a complete summary of the news of the war, besides all the other news of the world, especially everything happening within the borders of Kansas. The settlement of the controversy with Spain and the introduction of American government in the newly acquired territory will afford a great fund of interesting news and information. Subscribers to the Semi-Weekly Capital will receive it all at the same cost as an ordinary weekly paper. Sample copy free upon request.

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A subscription to the SEMI-WEEKLY CAPITAL now will secure the best and most complete report of the proceedings of the coming Kansas Legislature which will appear in any paper published in or out of the state.

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The Veterinarian.

We cordially invite our readers to consult us whenever they desire any information in regard to sick or lame animals, and thus assist us in making this department one of the interesting features of the Kansas Farmer. Give age, color and sex of animal, stating symptoms accurately, of how long standing, and what treatment, if any, has been resorted to. All replies through this column are free. In order to receive a prompt reply, all letters for this department should give the inquirer's postoffice, should be signed with his full name, and should be addressed direct to our Veterinary Editor, Dr. Paul Fischer, Professor of Veterinary Science, Kansas State Agricultural College, Manhattan, Kas.

What will remove a curb of several years standing? It does not cause any lameness. J. B.

Belleville, Kans.

Curb.—It would be difficult if not impossible to remove a curb as old as this. Since the curb does not lame the animal I would advise you to leave well enough alone. Proper treatment for a recently produced curb is absolute rest, supplemented with careful bandaging until the least sign of soreness or lameness has completely disappeared. Curbs are always caused by strains and can, therefore, easily be prevented by exercising care and judgment in using young horses for unaccustomed work.

We have a very fine driving horse that is curbed. We have been using him on the road, which is very muddy. The leg is swollen on each side below the joint. We have been using turpentine on it. Can it be cured? J. L. K.

Roper, Kans.

Curb.—See answer to above.

I have a 13-year-old mare that has a knot about the size of a small walnut on the right side, 6 inches from the top of the neck where the collar presses. It has a round hole, which gums over and becomes hard. The knot is neither very hard nor very soft, and has been there about three months. I have used Barber's Penetrating Oil with no effect. What is the trouble, and what can I do for it? G. Z.

Howard, Kans.

Collar Boil.—Procure from a druggist a crystal of sulphate of copper just large enough to fit snugly into the opening leading into the heart of the tumor. If necessary enlarge the opening sufficiently, with a knife, to receive the crystal and then see that it remains in place for at least 24 hours, when it may be removed, and in the course of a few days a so-called core will appear, which must then be taken out. After this, wash the raw surfaces twice daily with a 3 per cent solution of carbolic acid in water, and keep up this treatment until these surfaces have completely healed over and every trace of swelling has disappeared, and until that time use no collar on the mare.

About thirty-five days ago my large bay mare became lame in one front leg, and gradually grew worse, until now she is lame in all four legs. She seems to be sore all over and can scarcely get up when down. She it fat and eats well but is afraid to move, and has fallen twice lately in trying to back. She is a valuable mare and I should like very much to save her. Please let me know what you think the matter, and the remedy. C. F. C.

Rheumatism.—This animal has some general disease, but without a better description I could hardly prescribe intelligently. Possibly she has rheumatism, and in that case give her warm, comfortable quarters, free from draft, moderate exercise, less oats or other grain that you may be feeding, and two or three times a day you may dissolve one-half ounce of carbonate of potash in her drinking water. If the animal does not improve in the course of a week, write again and give more particulars.

What is the tuberculin test and how is it used? I had a high-grade Durham cow that appeared to have something wrong with her lungs. She coughed and grew thin on good feed. She with two others which were in the same stable refuse to get with calf. Are the other high-grade and thoroughbred cows I have likely to contract the disease? What would a test cost? O. C. M.

Harveyville, Kans.

Tuberculosis.—Your questions are easy but I am afraid the answers would be a little too long for this week's Veterinary column. I have directed that Bulletin 79 of the Kansas Experiment Station, which discusses this subject somewhat at length, be sent to your address. The cost of applying the tuberculin test would depend largely on the man who made the test for you, on whether or not you procured the necessary tuberculin from the Bureau of Animal Industry (free) and for the application of which practitioners are not permitted to collect fees, and, lastly, the cost per head would depend on the number of cattle tested. For a herd of from 40 to 50 cows 50 cents per head would not be an exorbitant fee. Where a herd of cattle, especially dairy cattle, are suspected of being tuberculous the matter of expense should always be a secondary consideration.

I have a cow that had a calf when 2 years old, but did not come in the next year, and gave milk all the time. She got with calf last February and in June became lame in one front leg. I have examined her many times but can not tell where the lameness is. Both shoulders are now swollen, the lame one more than the other. She is in good condition, eats well and will come in in about a week. What can I do for her? S. E. P.

Brookville, Kans.

Tuberculosis (?)—I would advise you to have this animal tested for tuberculosis. I have directed that Bulletin 79 of the Kansas Agricultural Experiment Station be sent to your address.

I have a young cow that has a tumor in the vagina about six or eight inches from the outside; it comes out at times and has to be put back. It varies in size, sometimes no larger than a man's hand, and at other times twice that size; when largest it is quite difficult to put back. It first appeared in November, 1897; at that time it came out some half dozen times at intervals of several days; it then stopped for about a year, during which time she dropped a calf (November 18, 1898). It then made its appearance again at intervals of from one to six days, then stopped for a month, then commenced again as before. The cow seems well and will have a calf again in April. What can be done for this? D. G. T.

Prolapsus of Vagina.—This is not a tumor, but a prolapsus of the vagina. The only cure for this would be a surgical operation, such as a surgeon only could perform. The trouble will reappear at every calving, and I would therefore advise you to discard the animal from breeding purposes.

As you invite the readers of the Kansas Farmer to consult you in case of unusual disease among stock, I take liberty to inform you that one of my 2-year-old steers has, since one month, a swelled jaw and tongue, which seems to grow worse. The steer has good appetite. Supposing that his throat was, maybe, obstructed by something, such as a cob, I caught him and looked carefully, but failed to see anything. As I handle a great many cattle, and such a thing comes for the first time to my observation, I thought to submit the case to you. Your answer through the columns of the Kansas Farmer will oblige. G. C.

Florence, Kans.

Actinomycosis.—In all probability this is actinomycosis (lump-jaw), for which the best remedy is iodide of potash in ten (10) gram doses for animals weighing 1,000 pounds. The medicine is dissolved in a pint of water and administered as a drench, once each day for one or two weeks or until the animal recovers. For animals of different weight give one gram of iodide of potash for each 100 pounds weight, daily.

Not for Her.

Here is a story credited to Rudyard Kipling by the Bookman: His father, John Kipling, went to pay a visit to an Indian rajah who was about to bring home a queen. The elder Kipling had been engaged in the decoration of the palace, and its owner showed him the gifts of stuffs and perfumes he had procured for his coming spouse. The rajah also sent for his jewel caskets and asked Mr. Kipling to assist him in selecting the gems to be included in the marriage gifts. They were of extraordinary size and value, such gems as are seldom seen except in the east, and to the artist the selection was a pleasure. Finally he lifted a wonderful diamond, one of the choicest gems in the collection, and said: "You should send this; no woman could resist it." The rajah looked up, caught it, and held it jealously to his breast. Then, slowly replacing it in the casket, he answered: "Nay, such gems be not for women."

Dr. Bull's Cough Syrup cures all throat troubles. Why wear out your throat by incessant coughing, when this reliable remedy can be bought for only 25 cents a bottle?

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By using a Waxine Pad. Saves 20 per cent. of your time and labor in ironing anything, especially starched goods. Keeps irons bright and clean, prevents starch from sticking to the irons. One pad will last from one to four months; used in steam laundries. Will be mailed to you upon receipt of 10 cents, three pads for 25 cents. Money back if you are not satisfied. Agents wanted. Address J. W. Hardt, 112 West Eighth street, Topeka, Kans.

BLOCKS OF THREE.—Two new subscriptions for one year for $2, and, in addition, a renewal for one year free to any old subscriber who sends two new subscriptions and $2 in one order. Kansas Farmer Co., Topeka, Kas.

Publishers' Paragraphs.

The "Seed and Plant Guide," issued by H. W. Buckbee, Rockford, Ill., is an especially fine one in every way, and for specialties surpasses anything we have yet received. Among the novelties for the present season is the offer of $100 for a name for an unnamed watermelon, which gave such great satisfaction last season.

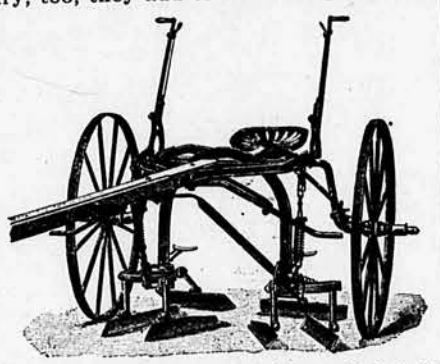
We are in receipt of an illustrated descriptive seed catalogue by another reliable, enterprising Kansas firm, Mangelsdorf Brothers Co., Atchison, Kans. They have for twenty-four years done a satisfactory business with the farmers of the West and are entitled to continued patronage of our readers. Send for catalogue and mention Kansas Farmer.

One of the most pronounced corn king seedsmen in the West is J. B. Armstrong, proprietor of the Pleasant Valley Seed Corn Farm, Shenandoah, Iowa. He has had remarkable success for a number of years as a grower and exhibitor and received some medals at the Omaha Exposition for the different varieties which he advertises. Note his advertisement in this issue and write him for detailed information about seed corn.

The Kansas Farmer is pleased to acknowledge receipt of the 1899 general catalogue from Geo. Ertel Co., Quincy, Ill., of the improved Victor incubator and brooder. This catalogue contains 164 pages of practical, interesting, and useful information regarding poultry, the best food, how to care for chicks, and artificial incubation, being a compilation from a farmers' bulletin issued by the United States Department of Agriculture.

Five Million Boxes a Year.—The verdict of the nation! During the year 1898, the people of America bought nearly 5,000,000 boxes of Cascarets Candy Cathartic, an increase of over a million boxes over 1897. Among the intelligent American public nothing succeeds like merit, and the stamp of public approval has evidently been affixed to the pure, fragrant, palatable little tablets of candy that are regulating the liver, stimulating the bowels, purifying the blood, perfuming the breath of the nation. The reason? Cascarets are honest, up-to-date, natural successors to the pills of the past, doing better work and doing it in so much nicer and more pleasant way. All our readers no doubt have used Cascarets, but if there are exceptions, we recommend them to fall in line.

Tower's Surface Cultivators have been for many years noted for excellence in destroying weeds of all kinds infesting the growing corn. When the season is dry, too, they add to the acreage of corn



as well as appearance. For a finish in cultivation all experts are agreed that such shallow tillage is desirable at all times. This, too, is in harmony with the experience of thousands of practical corn growers. An interesting treatise on Corn Culture will be mailed any one writing J. D. Tower & Bro., Mendota Ill. An illustration of the latest improved cultivator may be seen by consulting the pages of this journal.

One of the most interesting novelties yet put on the market—and a novelty of decidedly practical value—is Mr. Stahl's small-sized hot-water incubator, modeled after the famous Excelsior and called the "Wooden Hen." It takes up no more

THE "WOODEN HEN."

room than a good-sized hen, and it holds 50 eggs. It is equipped with an automatic regulator which is positive in its control of temperature, and it is in all respects a complete incubator. There are thousands of women and boys who would like to experiment with artificial incubation, but the prices of the regular sizes of standard make deter them. If the small boy—and girl, too—does not clamor for a "Wooden Hen" we miss our guess. The cost of this machine and the "Aunty" brooder could not be more profitably expended on the boy or girl who is anxious to learn how to hatch chickens by steam. On application Mr. Geo. H. Stahl, Quincy, Ill., will send you an illustrated descriptive catalogue of "the biggest little thing on earth." Mention this paper.

We are illustrating herewith the splendid new strawberry, New York, which is so famous for uniform large size that it it known where it originated as "The Big Berry." This berry is being propagated by our advertising patron, W. F. Allen, Jr., the 90-acre strawberry specialist of Salisbury, Md. It is a selected seedling

of the Bubach No. 5 which had been fertilized with the Jessie. It possesses in a high degree all the excellencies of the parent stock, being, however, more prolific and more uniform in size. The New York is a medium season berry in ripening and is singularly free from green sides and tips; it ripens uniformly. The plant is a strong, stalky plant, being the equal of the largest plants grown, and is full of health and vigor. All those who are interested in new and improved varieties of strawberries should write Mr. Allen for catalogue, which he mails free.

How's This?

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

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We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligations made by their firm.

WEST & TRUAX, Wholesale Druggists, Toledo, O.

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Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price, 75c per bottle. Sold by all Druggists. Testimonials free.

Getting an Opening.

A man had a story about a gun which he delivered himself of upon all occasions.

At a dinner party one evening he writhed in his chair for over an hour, waiting for a chance to introduce his story, but no opportunity presented itself. Finally he slipped a coin into the hand of a waiter and whispered:

"When you leave the room again, slam the door?"

The waiter slammed the door as directed, and the man sprang to his feet with the exclamation:

"What's that noise—a gun?"

"Oh, no!" replied his host. "It was only the door."

"Ah, I see! Well, speaking of guns reminds me of a little story," etc.—Liverpool Mercury.

Iowa Farms for sale, $2 per acre cash, balance ½ crop until paid. J. Mulhall, Sioux City, Ia.

"McFarland" Fence Machine $6, builds fence that beats them all for cheapness, strength and durability, 10c to 18c a rod. Circulars free. McFarland & Co., Portland, Indiana.

A POSITIVE and **PERMANENT CURE** for either *Constipation* or *Catarrh* without the use of drugs. I will furnish prescription for either of the above and guarantee treatment perfectly harmless **W. E. HUNTER, Fredericktown, Mo.**

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Turkey Raising.

Editor Kansas Farmer:—Having had ne years' experience in raising Mam-oth Bronze turkeys, and having been irly successful, I thought possibly our ethod might be of interest to some of our readers.

As the mating season is close at hand e should decide soon what he is going use for breeding stock. A question ten asked is, how many hens to mate ith one tom. We have mated from to 18 hens with one tom, and had as od a hatch when we had 18 as when we ad 4, but would not advise using so any hens, as a rule.

The next important thing is to induce e hens to lay as near the house and arn lot as possible. This can be done arranging boxes and barrels for nests the orchard or grove and out-of-way laces out of reach of stock. This should e done now, so that the hens will be-ome familiar with them before the lay-g season commences. A turkey hen sually has her nest located a week or en days before she commences to lay, nd is naturally shy of any new object. fter the turkeys begin laying, the eggs hould be gathered regularly once a day avoid going to the nest when the hen is atching you). Always leave her a nest gg of some kind, and disturb the nest s little as possible when you gather the ggs. Our plan is to set a turkey hen nd one or two common hens at the ame time, giving all the young poults o the turkey hen when they hatch. Some eople have success raising turkeys with ommon hens, but that plan has never een very successful with us. But where rkeys can be raised that way, or with n incubator and brooder, it brings the oung poults from three to four weeks arlier than the other plan, and is im-ortant when you wish to get birds up o standard weight by Thanksgiving.

Delphos, Kas. C. H. CLARK.

We are glad to hear from Mr. Clark nd hope he will come again. We wish ther breeders would do the same, giv-ng their personal experience.—Poultry ditor.

POULTRY SUPPLIES.

The Peerless brand of Crushed Oyster Shells, one Mills, Tarred Roofing, poultry foods and emedies, Poultry Netting, etc., etc. Write for rice list to T. Lee Adams, 417 Walnut street, ansas City, Mo.

THE DOMESTIC SHEEP.

BY HENRY STEWART,
World's Highest Authority on Sheep.

"The 'Domestic Sheep' should be in the ands of every sheepman in the country. The ore I look through it the more I am pleased ith it."—Hon. James Wilson, Secretary of griculture.

It treats in a practical and exhaustive man-er the **science of breeding**; what crosses are dmissible and desirable; the development of ype; the formation and management of flocks, arge and small. Sheep diseases and how to reat them. Sheep dipping and dips—their ses and abuses. The successful breeding and eeding of mutton sheep and lambs. The rowth of special summer and winter crops or sheep and their relative value. The nature, ber, growth, grades, preparation and market-ng of wool. Sheep barns, sheds, feeding de-ices, hurdles, etc., illustrated. The influence f climate, soils and environment on the de-elopment of sheep. Illustrations of the dif-erent breeds in rich half-tones of typical heep, and every other subject germane to the heep, wool and mutton industry. This new ook, of 372 pages and 165 illustrations, is an nvaluable guide to the new beginner, and a ise counsellor to the older sheepman. It is he crowning work of an eminent, life-long nd enthusiastic student of sheep life in all heep countries. Postpaid, **$1.50**; with Kan-as Farmer, both, **$2.25**.

"FEEDS AND FEEDING."

A Hand-Book for the Stockman, by Prof. W. . Henry, of the Wisconsin Experiment Sta-on. Price $2. It is a large octavo volume of 7 pages. Years of time and thousands of dol-rs in cash were spent in its preparation. Part —Plant Growth and Animal Nutrition. Part I.—Feeding Stuffs. Part III—Feeding Farm nimals. In addition to the thirty-five chap-rs enumerated in above parts there is an ap-endix containing elaborate and up-to-date ables giving the average composition of Amer-an feeding stuffs, their digestible nutrients nd fertilizing constituents, feeding standards or farm animals and a glossary of scientific erms. The volume closes with an extended ndex arranged for easy and quick reference. hroughout the work there are numerous cross eferences so that any subject may be quickly nd exhaustively studied. Of this work, Thos. haw, Professor of Animal Husbandry, Minne-ota College of Agriculture, says: "You have ade the entire live stock community your ebtor." This valuable book will be sent by repaid express to any address for $2, or with he KANSAS FARMER one year for **$2.75**.

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

Cows barren 3 years
MADE TO BREED.
Book Free. **Moore Brothers,** Albany, N. Y.

ACME PULVERIZING HARROW, CLOD CRUSHER AND LEVELER

For all soils, all work—crushes, cuts, lifts, pulverizes, turns and levels. *Cast steel* and wrought iron—therefore *indestructible.* Cheapest *riding* harrow and best pulverizer on earth. Sizes 3 to 13½ feet. Catalogue free.

SENT ON TRIAL to be returned at my expense if not Entirely Satisfactory.

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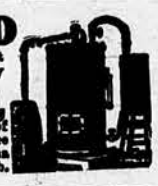
Address DUANE H. NASH, Sole Mfr., MILLINGTON, N. J., or CHICAGO, ILL.

PLEASE MENTION THIS PAPER.

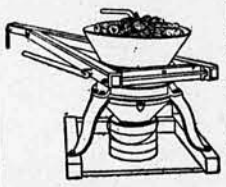
COOKED FOOD



is more than half digested. Saves that much animal energy. **The best way to cook it is with the**

IOWA FEED STEAMER,

a quick and thorough cooker for all kinds of grain and vegetables. Saves its cost in three months. Send for circulars & prices. **Omaha Hay Press Co. 103 S. 16th St. Omaha, Neb.**



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Diamond Cut Steel Burrs.

Cheapest and Best feed mill on the market. Write for prices and circulars.

ZEIGLER & DALTON, Junction City, Kas.

WE SELL DIRECT TO THE FARMER,
Hardened Steel Landside Double Board Plow, hard as glass, 16-in. $9.

Sulky Plows, $25, Riding Gang Plows, $35. 8-in. Wagon, $39. 1000 other articles. Big catalogue free. Write now and get ready for spring work.

Hard Steel CastorCoulter with Plow, $1.50 extra.

HAPGOOD PLOW CO., Box 485, Alton, Ill.
Only Plow factory in the United States selling direct to farmer.

We make Steel Windmills, Steel Towers and Feed Grinders and are selling them cheaper than the cheapest. Our productions are standards; are first-class in every respect and are sold on trial. Send us a postal and we will tell you all about them

CURRIE WINDMILL CO.,
AGENTS WANTED. **Manhattan, Kas.**

50 % Waste Saved.

If grain is fed without grinding nearly half of it is wasted. The animal can't digest it unground.

The Farmer's Friend
SWEEP FEED MILL

will do the work. **It has double cob crusher,** adjustable force feed. Burrs 30 in. in diameter. Ball Bearing. Write for circulars and prices.

KELLY & TANEYHILL, Waterloo, Ia.

Pressure between burrs in grinding is carried on chilled roller bearings.

Large inside burr revolves twice to sweep's once. Ordinary length sweep.

Sold under an absolute guarantee to do double the amount of work of any other mill of same size or money refunded. Write for circulars and prices.

DAIN MFG. CO., Carrollton, Mo.

THE UNIVERSAL REPAIR MACHINE
FOR FARMERS AND MECHANICS.

ONCE SHOWN, SELLS ITSELF.

For particulars, enclose stamp, and mention this paper. Address,

BLOOMFIELD MFG. CO.,
BLOOMFIELD, IND.
Salesmen Wanted.

The Blue Valley Sweep Feed Mills

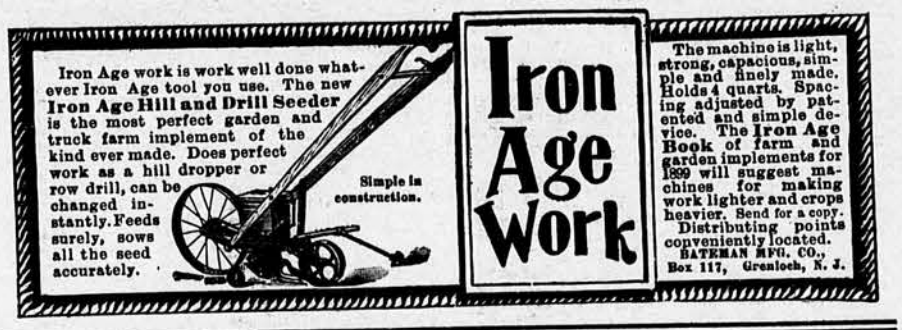
The Only Practical Mill for farmers' use. Made in two sizes. Power applied direct to grinding plates. No gears to wear, get out of order or increase the draft. The fastest grinding mill made. Grinds all kinds of grain and lasts a lifetime.

THE BLUE VALLEY MFG. CO., Manhattan, Kas.

"WE'VE DONE EXPANDED,"

is the way Judge Culberson, of Texas, sums up the "Eastern question." Well, who cares if Uncle Samuel has followed the example of Page fence.

PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.



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45 RIVER STREET.

YOU SEND No Money

Until Goods Arrive! Disc Harrows. Lever Harrows, 11-foot Seeders, Cultivators, Wagons. Write for delivery prices and Catalogue.

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STERLING, ILL.

IT PAYS

to do your own **grinding** if you have a mill that does not take the profit for repairs. A **French Buhr Mill** is the only mill to use on the farm for all kinds of grinding. Built to last. Do fine work. Large capacity. Less power. Easiest to take care of. Better get one. It will pay. Send for new book on Mills and sample meal.

NORDYKE & MARMON CO., Flour Mill Bldrs., 285 Day St., Indianapolis, Ind.

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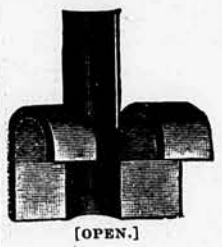

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Anchor Fence Co.,
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Makers of
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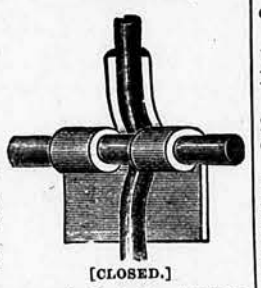

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Gold medal awarded to Anchor Fence at the Trans-Mississippi Exposition, Omaha, 1898. The best wire fence on the market.

Mention Kansas Farmer and write for full particulars.

Climate Cure

For Weak Lungs, Weak Throats, Weak Bodies.

The Health Resorts of New Mexico and Arizona

are unrivaled. Pure, dry air; an equable temperature, the right altitude, constant sunshine.

Send for descriptive pamphlets issued by Santa Fe Route Passenger Department.

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CALIFORNIA
GREAT ROCK ISLAND ROUTE

LOW RATES ON OUR PERSONALLY CONDUCTED TOURIST EXCURSIONS.

Leave Kansas City every Friday via Colorado Springs and Scenic Route.

Southern Route leaves Kansas City every Wednesday via Ft. Worth and El Paso to Los Angeles.

These Excursion Cars are attached to fast passenger trains, and their popularity is evidence that we offer the best.

Write for handsome itinerary which gives full information and new map, sent free. For complete information, rates and berth reservations, see your local ticket agent or address

E. E. MacLEOD, A. G. P. A., Topeka, Kas.
JOHN SEBASTIAN, G. P. A., Chicago

Nelson & Doyle

Room 220, Stock Yards Exchange Building, KANSAS CITY, MO.,

Have for sale at all times, singly or in car lots . . . **Registered Herefords and Short-horns.** Cross-bred Hereford, Short-horns and grades of other breeds. Bulls and females of all ages

Stock on Sale at Stock Yards Sale Barn, Also at Farm Adjoining City.

N. B.—We have secured the services of John Gosling, well and favorably known as a practical and expert judge of beef cattle, who will in the future assist us in this branch of our business.

THE KANSAS CITY STOCK YARDS

Are the Finest Equipped, Most Modern in Construction and afford the Best Facilities for the handling of Live Stock of any in the World. **The Kansas City Market,** owing to its Central Location, its Immense Railroad System and its Financial Resources, offers greater advantages than any other. It is the **Largest Stocker and Feeder Market in the World,** while buyers for the great packing houses and export trade make Kansas City a market second to no other for every class of live stock.

	Cattle and Calves.	Hogs.	Sheep.
Official Receipts for 1898	1,846,233	3,672,909	980,303
Sold in Kansas City 1898	1,757,163	3,596,828	815,580

C. F. MORSE, Vice Pres. and Gen. Mgr. **E. E. RICHARDSON,** Secy. and Treas. **H. P. CHILD,** Asst. Gen. Mgr. **EUGENE RUST** Traffic Manager.

MARKET REPORTS.

Kansas City Live Stock.

Kansas City, Jan. 23.—Cattle—Receipts, since Saturday, 4,146 cattle; calves, 22; shipped Saturday, 982 cattle; no calves. The market was steady to a shade lower. The following are representative sales:

DRESSED BEEF AND SHIPPING STEERS.

No.	Ave.	Price.	No.	Ave.	Price.
19	1,481	$5.10	13	1,353	$5.00
24	1,200	4.90	10	1,287	$4.85
1	1,440	4.75	18	1,153	4.65
1	1,110	4.25	6	1,010	4.00

WESTERN STEERS.

22	1,101	$4.70	50 Ind	1,121	$4.55
20	1,057	4.40	22	1,087	4.45
90	904	4.30	76	897	4.30
2	730	3.50	1 Jer	580	3.00

NATIVE HEIFERS.

26	572	$4.25	6	418	$4.00
23	1,004	3.85	29	857	3.75
23	899	3.60	1	700	3.50
2	870	3.50	1	790	3.35

NATIVE COWS.

2	1,135	$3.60	1	1,070	$3.50
14	955	3.45	4	1,190	3.45
12	1,048	3.40	15	988	3.10
1	730	2.25	1	900	2.00

NATIVE FEEDERS.

9	1,144	$4.70	3	1,066	$4.55
20	1,008	4.50	5	903	4.40
36	987	4.35	38	914	4.20
1	950	4.00	1	1,120	3.95

NATIVE STOCKERS.

65	598	$4.85	100	703	$4.75
13	575	4.70	2	715	4.70
2	620	4.60	37	616	4.25
8	751	3.35	1	540	3.25

Hogs—Receipts since Saturday, 9,917; shipped Saturday, 609. The market was weak to 5c lower. The following are representative sales:

70	302	$3.75	70	298	$3.70	58	280 $3.70
55	359	3.67½	59	348	3.67½	55	392 3.65
70	306	3.65	71	264	3.65	59	331 3.65
61	330	3.62½	67	224	3.62½	65	313 3.62½
62	275	3.60	70	296	3.60	61	307 3.60
85	233	3.57½	64	278	3.57½	82	242 3.57½
87	242	3.55	76	200	3.55	108	247 3.55
81	239	3.52½	26	215	3.52½	60	247 3.52½
84	230	3.50	80	228	3.50	77	191 3.50
52	232	3.47½	68	223	3.47½	55	228 3.47½
94	191	3.45	65	231	3.45	85	200 3.45
79	187	3.45	117	152	3.42½	67	224 3.42½
53	219	3.40	87	197	3.40	24	197 3.40
78	175	3.35	11	332	3.35	48	173 3.35
2	655	3.25	54	144	3.25	94	157 3.25
24	175	3.20	9	154	3.20	8	138 3.15
20	122	3.15	10	124	3.10	77	72 3.10
21	119	3.05	76	111	3.00	104	95 2.90

Sheep—Receipts since Saturday, 2,330; shipped Saturday, none. The market was slow but steady. The following are representative sales:

81 Col. lbs	79	$5.00	10 nat. lbs	86	$4.75
15 sw. lbs	70	4.65	239 west	70	4.35
97 burry lb	67	3.85	158 Col. ew	93	3.70
77 sw. sh	112	3.65	206 W. mx	108	3.55

St. Louis Live Stock.

St. Louis, Jan. 23.—Cattle—Receipts, 4,000; market steady to easy for Texans, with natives steady; native shipping and export steers, $4.50@6.00; light and dressed beef and butcher steers, $3.25@5.30; stockers and feeders, $2.75@4.30; cows and heifers, $2.00@4.75; Texas and Indian steers, $2.80@5.00; cows and heifers, $2.20@3.50.

Hogs—Receipts, 11,000; market steady to a shade lower; top price, $3.85.

Sheep—Receipts, 1,000; market steady to strong; Texas muttons, $3.50@4.25.

Chicago Live Stock.

Chicago, Jan. 23.—Cattle—Receipts, 19,000; market steady to 10c lower; beeves, $4.00@6.00; cows and heifers, $2.00@4.80; Texas steers, $3.60@5.00; stockers and feeders, $3.20@4.50.

Hogs—Receipts, 40,000; market fairly active, weak to 5c lower; light, $3.50@3.72½; mixed, $3.55@3.82½; heavy, $3.55@3.85; rough, $3.50@3.60; yorkers, $3.65@3.70.

Sheep—Receipts, 23,000; market generally 10c lower; natives, $2.75@4.20; westerns, $2.90@4.15; lambs, $3.75@4.85.

Chicago Grain and Provisions.

Jan. 23.	Opened	High'st	Low'st	Closing
Wh't—May	71⅛	72⅛	71⅛	72
July	69⅛	69⅝	69	69⅝
Corn—Jan.	.....	.....	.....	35¾
May	37¼	38	37⅛	38
July	37⅝	38¼	37⅛	38¼
Oats—Jan.	.....	.....	.....	26¾
May	27¾	28	27¾	28
July	26⅝	26½	26¼	26½
Pork—Jan.	.....	.....	.....	10 10
May	10 22½	10 35	10 22½	10 35
Lard—Jan.	.....	.....	.....	5 67½
May	5 80	5 92½	5 80	5 90
Ribs—Jan.	.....	.....	.....	4 95
May	5 12½	5 17½	5 10	5 17½

Kansas City Grain.

Kansas City, Jan. 23.—Wheat—Receipts here to-day were 292 cars: a week ago, 238 cars; a year ago, 97 cars. Sales by sample on track: Hard, No. 2, 65@66c: No. 3 hard, 62½@64c; No. 4 hard, 60½@62½c. Soft, No. 2 red, 73½c; No. 3 red, 69½c; No. 4 red, 60c; rejected, 58½@59c. Spring, No. 2, nominally 62@65c; No. 3 spring, nominally 59@63c.

Corn—Receipts here to-day were 57 cars; a week ago, 48 cars; a year ago, 167 cars. Sales by sample on track: Mixed, No. 2, 32⅞@35½c; No. 3 mixed, 32⅝@32¾c; No. 4 mixed, nominally 32c; no grade, nominally 31½c. White, No. 2, 34¼@34½c; No. 3 white, 34c; No. 4 white, nominally 33c.

Oats—Receipts here to-day were 11 cars; a week ago, 7 cars; a year ago, 32 cars. Sales by sample on track: Mixed, No. 2, 28c; No. 3 mixed, nominally 27c; No. 4 mixed, nominally 26c. White, No. 2, 29½c; No. 3 white, 28½@29c; No. 4 white, nominally 27c.

Rye—No. 2, 54c; No. 3, nominally 53c; No. 4, nominally 50c.

Hay—Receipts here to-day were 75 cars; a week ago, 84 cars; a year ago, 30 cars. Quotations are: Choice prairie, $6.75@7.25; No. 1, $6.00@6.50. Timothy, choice, $7.00@7.25. Clover, $6.50@7.00. Alfalfa, $7.00@8.00.

Kansas City Produce.

Kansas City, Jan. 23.—Eggs—Strictly fresh, 13c per doz.

Butter—Extra fancy separator, 18c; firsts, 16c; seconds, 15c; dairy, fancy, 14c; country roll, 10c; store packed, 10c; packing stock, 9c.

Poultry—Hens, 7c; springs, 7½c; old roosters, 15c each; young roosters, 20c; ducks, 6c; geese, 4@5c; turkeys, hens, 8c; young toms, 7½c; old toms, 7c; pigeons, 50c per doz.

Vegetables—Navy beans, $1.35 per bu. Lima beans, 4½c per lb. Onions, red globe, 60@65c per bu.; white globe, $1.00 per bu. Cabbage, home grown, 40@50c per doz. Celery, 45c per doz. Pumpkins, $1.00 per doz. Squash, 75c per doz. Turnips, home grown, 15@25c per bu.

Potatoes—Home grown, 30c per bu.

THE STRAY LIST.

HOW TO POST A STRAY.

THE FEES, FINES AND PENALTIES FOR NOT POSTING.

BY AN ACT of the Legislature, approved February 27, 1866, section 1, when the appraised value of a stray or strays exceeds ten dollars, the County Clerk is required, within ten days after receiving a certified description and appraisement, to forward by mail, notice containing complete description of said strays, the day on which they were taken up, their appraised value, and the name and residence of the taker-up, to the KANSAS FARMER, together with the sum of 50 cents for each animal contained in said notice. And such notice shall be published in the FARMER in three successive issues of the paper. It is made the duty of the proprietors of the KANSAS FARMER to send the paper, *free of cost*, to every County Clerk in the State, to be kept on file in his office for the inspection of all persons interested in strays. A penalty of from $5 to $50 is affixed to any failure of a Justice of the Peace, County Clerk, or proprietors of FARMER for a violation of this law.

Broken animals can be taken up at any time in the year.

Unbroken animals can only be taken up between the first day of November and the first day of April, except when found in the lawful enclosure of the taker-up.

No persons, except citizens and householders, can take up a stray.

If an animal liable to be taken up, shall come upon the premises of any person, and he fails for ten days, after being notified in writing of the fact, any other citizen and householder may take up the same.

Any person taking up an estray, must immediately advertise the same by posting three written notices in as many places in the township, giving a correct description of each stray, and he must at the same time deliver a copy of said notice to the County Clerk of his county, who shall post the same on a bill-board in his office thirty days.

If such stray is not proven up at the expiration of ten days, the taker-up shall go before any Justice of the Peace of the township, and file an affidavit stating that such stray was taken up on his premises, that he did not drive nor cause it to be driven there, that he has advertised it for ten days, that the marks and brands have not been altered; also he shall give a full description of the same and its cash value. He shall also give a bond to the State of double the value of such stray.

The Justice of the Peace shall within twenty days from the time such stray was taken up (ten days after posting) make out and return to the County Clerk, a certified copy of the description and value of such stray.

If such stray shall be valued at more than $10, it shall be advertised in the KANSAS FARMER in three successive numbers.

The owner of any stray may, within twelve months from the time of taking up, prove the same by evidence before any Justice of the Peace of the county, having first notified the taker-up of the time when, and the Justice before whom proof will be offered. The stray shall be delivered to the owner, on the order of the Justice, and upon the payment of all charges and costs.

If the owner of a stray fails to prove ownership within twelve months after the time of taking, a complete title shall vest in the taker-up.

At the end of a year after a stray is taken up, the Justice of the Peace shall issue a summons to three householders to appear and appraise such stray, summons to be served by the taker-up; said appraisers, or two of them, shall in all respects describe and truly value said stray, and make a sworn return of the same to the Justice.

They shall also determine the cost of keeping, and the benefits the taker-up may have had, and report the same on their appraisement.

In all cases where the title vests in the taker-up, he shall pay into the County Treasury, deducting all costs of taking up, posting and taking care of the stray, one-half of the remainder of the value of such stray.

Any person who shall sell or dispose of a stray, or take the same out of the State before the title shall have vested in him, shall be guilty of a misdemeanor and shall forfeit double the value of such stray and be subject to a fine of $20.

FOR WEEK ENDING JANUARY 12, 1899.

Cherokee County—S. W. Swinney, Clerk.

PONY—Taken up by J. W. Hamilton, in Pleasant View tp., December 29, 1898, one black mare pony, 5 years old, weight 800 pounds, scar on left fore foot; valued at $20.

Greenwood County—Perry Clemans, Clerk.

TWO COWS—Taken up by C. C. Huntington in Eureka tp. (P. O. Eureka), two red cows, 5 years old, no marks or brands; valued at $25 each.

Elk County—J. A. Benson, Clerk.

COW—Taken up by Charles Martin, in Liberty tp. (P. O. Fall River, Greenwood county), on December 15, 1898, one black cow, weight about 700 pounds, crop and underbit out of each ear, branded D. G. on left hip; valued at $20.

FOR WEEK ENDING JANUARY 19, 1899.

Crawford County—F. Cunningham, Clerk.

COW—Taken up by J. G. Walters, in McCune, Osage tp., November 15, 1898, one pale red cow, 2 years old, white face, slit in under side left ear, crumply horns, poor in flesh; valued at $15.

Nemaha County—A. G. Sanborn, Clerk.

STEER—Taken up by Clarence Howard, in Centralia, Home tp., November 10, 1898, one red yearling steer, medium size, little white on tail and belly, dehorned; valued at $20.

Wilson County—C. W. Isham, Clerk.

STEER—Taken up by J. L. Lewis, in Fall River tp. (P. O. Fredonia), December 17, 1898, one red and white spotted steer, 3 years old, dehorned, no marks or brands; valued at $25.

FOR WEEK ENDING JANUARY 26, 1899.

Chase County—M. C. Newton, Clerk.

COW—Taken up by John Man, in Elk, Diamond Creek tp., January 7, 1899, one red cow, figure 2 brand, both ears cropped; valued at $15.

Lyon County—H. E. Peach, Clerk.

STEER—Taken up by W. H. Phillips, in Reading tp. (P. O Emporia), one red steer, 2 years old, notch in left ear; valued at $25.

Texas! Texas!

The Missouri, Kansas & Texas Railway Company will sell low rate round-trip tickets on November 15, December 6 and 20, with final limit of return to twenty-one days from date of sale. An excellent opportunity for home-seekers, tourists and investors to view for themselves the great resources of the State. For further information, address Geo. A. McNutt, D. P. A., 1018 Union Ave., Kansas City, Mo.

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FOR SALE CHEAP—Light Brahma cockerels, $1.00 each, if taken soon. Wm. Plummer, Osage City, Kans.

WANTED—To sell every FARMER reader a bill of our seeds. Large vegetable packets at 4 cents; low price in bulk. Sample packet of your own selection for 2-cent postage stamp, with catalogue. Catalogue is free. Address A. A. Berry Seed Co., Clarinda, Iowa.

WANTED—Manager in each locality for branch office; $60 per month salary; inclose stamp. Mundt's Medicine Co., Dept. 14, Freetown, Ind.

WANTED—To trade 160 acres of land in Clark County, Kansas, and 120 acres of land in Hancock County, Iowa, for young draft horses. M. F. Dillon, Ordway, Colo.

FOR SALE—Barred and White Plymouth Rocks. Cockerels, $1 each; pullets, 75 cents each; white guineas, 50 cents each; M. B. turkeys, $2 each; peafowls, $5 per pair. S. F. Glass, Marion, Kans.

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ROSE POULTRY FARM—J. M. & C. M. Rose, Elmdale, Kans., breeders of Light Brahmas. Yard, 92¼ cockerels; females 92 to 94½. B. P. Rocks, yard, 91½ cockerels; females 90 to 92½. W. C. B. Polish, 92½ cockerel; hen 93 and 94. S. C. B. Leghorn, yard No. 1, 93½ cockerel, first prize at Sedgwick, Cottonwood Falls '98, and Topeka '99; females 92½ to 94. Yard No. 2, headed by cock 94½ as a cockerel last year; pullets 92¼ to 94. We have some fine Light Brahma cockerels for sale. Eggs $1.50 per sitting of fifteen.

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TOPEKA, KANSAS.
Eggs in season, $1.50 per sitting. Residence and yards south of Highland Park.

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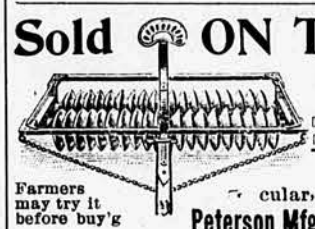

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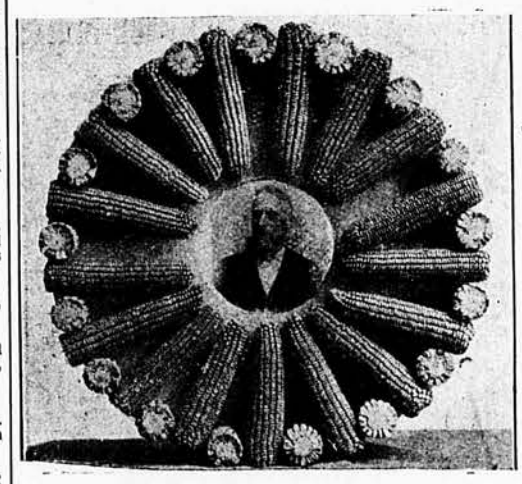

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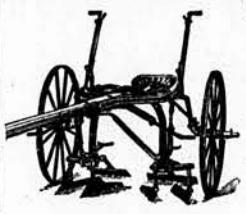

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Both Riding and Walking—a Complete Success.
They "Cultivate shallow," "Pulverize ground fine," "Preserve moisture," "Keep ground cleaner," "Handle easier," "Draw lighter," Kill more cockleburs, morning-glories, barn-grass, and raise more corn than any other cultivator made.
A bonanza to farmers. A tool that pays the rent.
Send for Treatise on Corn Culture, and discount to introduce, where we have no agent.
J. D. TOWER & BRO., 14th St., Mendota, Ill.

Notes on Weeds.

Press Bulletin Kansas Experiment Station.

Our common weeds may be divided into three categories:

(1) Weeds of cultivated soil, including tame grass pastures.

(2) Weeds of native pastures. These are coarse plants, native in the grass land, but not eaten by stock. These plants do not usually become troublesome unless the land is overstocked. In that case the weeds are better able to compete with the grass and increase more rapidly. Mowing pastures helps to keep down such weeds, but the best remedy is to take off the stock for a season or two and allow the grass to recuperate.

(3) Weeds of waste places, dooryards, fence rows, and similar neglected spots. Weeds which confine themselves to such localities do little actual harm other than being unsightly. But, unfortunately many weeds of the first category find a refuge here, and are propagated from year to year. For this reason, it is best to have no "neglected spots" upon the farm.

WEEDS OF CULTIVATED SOIL.

It is to this category that our most troublesome weeds belong. About half of our bad weeds are native and include the cocklebur, sand-bur, sunflower and ragweeds. A few are native farther west and are introduced in Kansas, as the bull-nettle, snow-on-the-mountain, and prickly nightshade. Most of the remainder are introduced from Europe, not directly, but at various times in the past, through the Eastern States.

Many of our weeds have excellent facilities for the distribution of their seed. Some are tumble-weeds, which break off near the ground at maturity and roll before the wind, scattering their seeds as they go. The common tumble-weed, the sand-hill tumble-weed and the Russian thistle are examples. Some have tumbling fruit clusters, as tickle-grass; some have tufts of hair on the fruits, as thistle and prickly-lettuce; some have fruits or seeds which attach themselves to animals, as cocklebur, sand-bur, beggar-ticks, devil's claw. Many seeds are small and are blown along with the dust or upon the surface of the snow. Some are eaten by birds or other animals and escape digestion, or are carried about in the mud upon their feet. These various methods serve to scatter seeds from field to field or from farm to farm. One of the most important agencies for distribution over wide areas is man. Seeds of weeds are carried along with those of grass, grain, or vegetables. Great care should be taken when importing seed to avoid introducing weeds in this way. Buy seed of responsible parties who will guarantee it to be pure or at least free from the seeds of noxious weeds. Railroads are great carriers of seed, often in the bedding in cattle cars. Ground planted to imported seed should be watched and strange weeds eradicated before they have had time to spread.

Many of our annual weeds have the power to exist as dwarfs. Species which normally grow three or four feet high may occur as dwarfs not more than an inch or two in height. In this way they escape notice and elude the vigilance of the farmer, and yet produce seed for a succeeding crop.

To illustrate how weeds tend to occupy new soil, a plat of bare soil ten feet square was laid off, and the seedlings counted and removed at intervals as they appeared. During four years 70,825 seedlings were removed. Of these, 17,792 were purslane and 28,303 were bull-nettle. A great number of other plants which apparently had an equal chance were present in small numbers or not at all.

Many of our worst weeds have the power to produce an enormous number of seeds. Estimates based upon a partial count of the seeds on a single plant of each kind showed the following: Purslane, 69,000; red-root, 85,000; pigweed purslane, 155,000; yellow foxtail, 113,600; sand-hill tumble-weed, 357,600; water hemp, 945,000.

As to duration, weeds may be annual, living one year, as the cockle-bur; biennial, living two years, as the burdock; or perennial, when they live more than two years, as the ox-eye daisy and the bind-weed. The perennials may produce a crown without spreading underground, as the ox-eye daisy and plantain, or they may spread under ground by creeping stems or roots. These creeping parts throw up plants at the extremity, or, especially where the creeping part is a root, at intervals along their entire length. Plants of the latter kind are often very difficult to eradicate when once well started because plowing them or cutting the creeping parts tends to increase rather than diminish the number of plants.

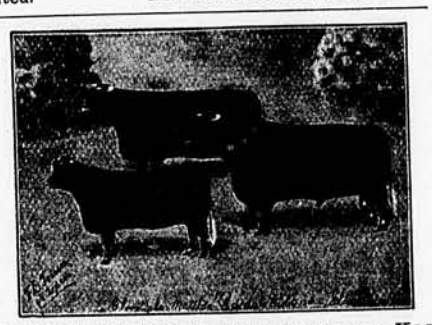
Bind-weed is one of the worst weeds of this class that we have. The best way to eradicate a patch of this is to mulch it thoroughly with straw or hay, thus preventing the appearance of green leaves to gather nourishment for the roots, in which case the latter must sooner or later die. Two full seasons of careful mulch should be sufficient. At least the stragglers could be dug out easily after such treatment. Perennial weeds which form a crown and biennial weeds can be eradicated by cutting off below the crown. The dandelion cannot be killed by this method because it produces buds upon the cut root. Annuals can be eradicated or at least kept within control by careful cultivation. Proper rotation of crops will subject all the fields of a farm successively to the cultivator.

CEDAR HILL FARM.

Golden Knight 108086 by Craven Knight, out of Norton's Gold Drop, and Baron Ury 2d by Godoy, out of Mysie 50th, head the herd, which is composed of the leading families. Young bulls of fine quality for sale; also offer a choice lot of grade bull and heifer Shorthorn spring calves.
C. W. TAYLOR, Pearl, Dickinson Co., Kas.

SPRING VALLEY HEREFORDS.

Lincoln 47095 by Beau Real, and Klondyke 42001, a the head of the herd. Young stock of fine quality and extra breeding for sale. Personal inspection invited. ALBERT DILLON, Hope, Kas.



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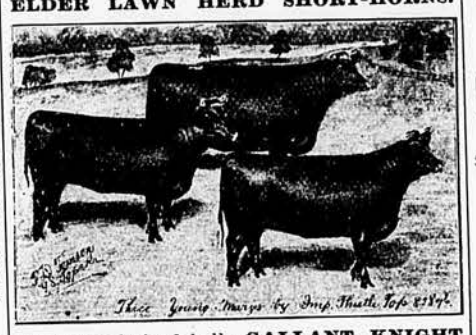
Leading Scotch and Scotch-topped American families compose the herd, headed by the Cruickshank bulls, Glendon 119370, by Ambassador, dam Galanthus, and Scotland's Charm 127264, by Imp. Lavender Lad, dam by Imp. Baron Cruickshank. Young bulls for sale. C. F. WOLF & SON, Proprietors.

ELDER LAWN HERD SHORT-HORNS.



THE Harris bred bull, GALLANT KNIGHT 124466, a son of Gallahad, out of 8th Linwood Golden Drop, heads herd. Females by the Cruickshank bulls, Imp. Thistle Top 83876, Earl of Gloster 74523, etc. Size, color, constitution and feeding qualities the standard. A few good cows for sale now bred to Gallant Knight.
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T. K. TOMSON & SONS, DOVER, KANSAS.

SHORT-HORN CATTLE.

I have combined with my herd the Chambers Short horns and have the very best blood lines of the Bates and Cruickshank families. Herd headed by Baron Flower 114352 and Kirklevington Duke of Shannon Hill 126104. The Cruickshank Ambassador 110811 lately in service.
Best of shipping facilities on the A. T. & S. F. and two branches of Mo. Pac. Rys. Parties met by appointment. B. W. GOWDY, Garnett, Kas.

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CURES
Rheumatism, Neuralgia, Sciatica,
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ITALIAN BEES.

Bred from queens imported from Italy. Full colonies; two, three and four frame nucleus shipped anywhere and safe arrival guaranteed. We ship Bees any time from March to November. Queens, hives and supplies generally.
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The cheapest source of Protein for a Balanced Ration.

Will produce richer milk and more of it; a more rapid growth and development of Cattle and Hogs, and better meat for market purposes than any other feed on the market. Highly recommended by Prof. H. M. Cottrell, of Manhattan Agricultural College. For information and prices address
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descriptive of the agricultural and mineral resources of Western Canada will be sent to all applicants free.
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BE HUMANE and remove the horns of your herd and that of your neighbor's herd BY USING THE KEYSTONE DEHORNING KNIFE
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The picture at the left represents one of the Naval Heroes in the Battle of Santiago. The Hero has many friends and more admirers, and if you study the picture carefully the faces of many of them can be found. See if you can name the Hero and find his friends. Find as many as you can, and mark them by tracing with pen or pencil the outline of each face, or some mark that will make your answer plain and neat. Cut out the picture and mail with your full name and address to the Problem Department of THE CHICAGO HOUSEHOLD GUEST.

SEND NO MONEY

Do not enclose any money with your answer, but mail at once. If four or more are marked correctly, you will be entitled to a Prize, as hereinafter set forth. To the person or persons finding and marking correctly all the faces hidden in the picture, we will give

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

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FOR SALE—Soy or soja beans from northern-grown seed, thoroughly acclimated. References: Hume bank, or any business man in Hume, Mo. E. N. Chastain, Hume, Mo.

BLACK AND HONEY LOCUST PLANTS (Including freight and boxing), 18 to 24 inches, $3.25 per 1,000; 10 to 15 inches, $2.75 per 1,000. J. E. Mellecker, Spearville, Kans.

"ORIZEL"—The Aztec Legend, by LeRoy Leach. Second edition. Illustrated. Gold title. Imitation leather, 15c The Oracle Co., Wood Lake, Neb.

TO EXCHANGE—A daughter of Hadley Jr., dam by Klever's Model, for ten bushels of alfalfa seed on track. F. W. Baker, Council Grove, Kans.

FOR TRADE—A grain farm in Ottawa County, Kansas, of 320 acres, 250 acres in cultivation, 150 in wheat, for a good dairy farm near Topeka, or some good farm in northeast Kansas. Address Box 128, Bennington, Kans.

SHEEP FOR SALE—Sixty full-blood Oxfords, 170 one-half and three-quarter Oxfords, 50 Merinos. Will sell entire flock on account of my age and health. J. F. Bayless, Yates Center, Kans.

VITA-NOVA protects trees from insects and fungus diseases and insures perfect fruit and foliage. For $1.00 we will send sufficient for twenty-five trees. WILLIAMS BROS., Danville, Pa.

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WANTED—A good, enterprising, reliable farmer or stockman in each county to handle our goods; $5 to $10 per day to right party. Address with stamp for full particulars, Live Stock Remedy Co., St. Louis, Mo.

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HEREFORD BULLS FOR SALE—Choice ones that are good enough to go any place; also some fine Hereford heifers. Address A. A. Berry, Clarinda, Iowa.

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BLACK LANGSHANS EXCLUSIVELY—A fine lot of cockerels on hand. Correspondence and inspection solicited. James Bottom, Onaga, Kans.

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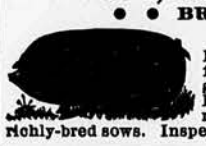

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