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The Kansas State Dairy Association

Papers Read Before the Convention Held at Manhattan, Kansas, March 4-7, 1902.

President E. C. Lewellen's Address.

Gentlemen of the Convention:—In advance of the few remarks which I shall make at this time, I desire to express my appreciation of the honor which you have conferred upon me by choosing me to preside over your deliberations at this meeting. I am much pleased to note the interest manifested by both the dairy-farmer and the creameryman in this convention, and I feel confident that the splendid program which we offer will provide a treat for those in attendance.

In most parts of our State we find that the milk supply has been very low for the past few weeks, and at present nearly all Kansas creameries are experiencing the smallest milk receipts they have known for some time, or possibly they have ever known. Coming together at this time as we do with this fact staring us in the face it would seem that we could hardly find any cause for the hope that is within us, and yet I think we have all note with pleasure the fact that our all note with pleasure the fact that our State is gradually but surely awakening to a realization of the possibilities of itself as a dairy State. This is evidenced by the great stride taken in the establishing of a chair of dairy husbandry at this college, and by selection of an ideal man to fill it. It is further evidenced by the increased appropriations by means of which experiments can be more extensively carried on. You who were present at the convention at this place two years ago will no doubt note with pleasure the advancement made along this line since that time.

In the cloud that is now hanging over the dairy industry I fancy we can see the reflection of its silver lining, illustrated in the good resolutions that have been made by those who were short on feed this winter, to the effect that they will see that it does not occur again. In fact, the cold weather and snow of the past month has only served to show many farmers what would have been their predicament had not kind Providence favored them with an open fall and winter, thereby enabling them to keep their stock in thriving condition, and at the same time hold in reserve the little feed they had for an emergency such as we had during the month of February. This I say has shown plainly to them what might have happened, and they have made up their minds to make better provision in the future.

There is no doubt but that this season will see many acres of Kansas land planted to alfalfa as a direct result of last year's drouth. People have also had a forcible argument as to the advisability of having some succulent feed for fall use and will make greater effort to have it. Both of these facts will eventually redound to the advancement of the dairy cause.

A CAUTION.

While there can be no doubt as to the future of Kansas as a dairy State, we must not, either as creamerymen or dairy farmers, expect to find only roses along our pathway. Dairying is being pushed and is rapidly developing in other sections of the country, thereby making competition keener for this section. Only as far back as two or three years ago we sent car-load after car-load of our Kansas butter to the Pacific coast and considered it our best market. To-day we find that we have practically no market in California, and they are not content to bar us from their State, but are at the present time vying with us for what we have been pleased to call our old established trade throughout New Mexico and Arizona and adjoining territory. Ere long you will

find that our neighbors on the south of us have discovered that they can produce milk at a profit, and they will be claiming Texas and Mexican points as a market-place. I do not speak of these facts in disparagement, but rather that we all may more firmly resolve to work for the betterment and protection of our interests. To me it seems that the creameryman and the creamery patron are alike interested. In order to meet these conditions the milk-producer must aim to reduce the cost of production and the creameryman bring down to a minimum the cost of manufacturing. In this way alone can we hope to retain a desirable place among butter-producing States. We have long boasted that Kansas can produce milk as cheaply as any State in the Union, and to-day we will all probably affirm that she can do it. It, however, is not a question of what we can do, but rather of what we will do. No doubt, nine-tenths of the milk produced in Kansas to-day could be produced at a much less cost, and to my mind this is a very serious matter. If the patron will inform himself how he can produce twice the quantity he is now getting for the same money, or very likely for less money than it is now costing him, he certainly will have taken a great step toward relieving the situation. Whatever the milk-producer may be able to accomplish along this line of cheaper production the creameryman can duplicate by reason of the increased milk supply, which will be the logical result of milk being produced more cheaply.

In conversation with a California dairyman some time ago, who by the way, is a graduate of the Wisconsin Dairy School, he remarked that the alfalfa fields of California already prevented our marketing butter in that country, and that unless we Kansas people found some way to help us out on cost of production that it would only be a question of time until they could afford to undersell us on any market. Let us then be alive to the situation and begin now. The program for this convention is right in line with this idea, and I trust it will be appreciated.

AN IMPORTANT FEATURE.

Permit me at this time to call the attention of the convention to a very important feature of our program. I refer to the judging of dairy stock. That this feature might be included in the program was, I think, one of the main reasons why this place was selected for the meeting of the convention. I would urge upon you the importance of being present at these sessions, as I feel that none can afford to miss them. Our program has been arranged in a manner to allow every one in attendance an opportunity to be present at them. Do not stay away from them because you are not particularly a dairyman or dairy-farmer, but be present and hear and see the good and bad points both discussed and illustrated. Who knows but it may be the means of making you a dairy-farmer if you are not already one, or if you are one, a more enthusiastic and better one.

Those of us who have been attending the annual meetings of this association for the past ten or more years can not help but notice the difference in the trend of subjects under discussion. In earlier years it was "Churning," "Cream Ripening," "Butter Working," "Salt," "Color," "B-41," "Sterilizing," "Pasteurizing," "Packing Butter," "Mottles," "Mould," "Flavor," etc., compared at the present time with, "Individual Cow's Test," "Daily Records," "Balanced Ration," "Dairy Type," "Breeding for Dairy Purposes," "Alfalfa and Dairying for Profit," and so on. These last named and kindred subjects have not supplanted the former

ones for the reason that we have attained perfection in those formerly most discussed in our conventions, but for the very good and sufficient reason that we have realized that we are deficient on the latter subjects, and as naturally as water seeks its level and we have taken up these topics for consideration. Certainly no better place could have been selected to pursue this line of study than at this college, and I entreat every member to make the most of the opportunity.

THE OLEO BILL.

I had hoped at this time to be able to say something definite regarding the oleomargarine bill now before the Senate, but I am sorry to say I can not. Not being a politician I have failed to get an expression from our Kansas Senators as to what position they will take on the measure, although I trust we may expect as much from them as from the Kansas Representatives, i. e., a majority in favor of the bill. It is true that the bill was amended in the House by its opponents in the hope of creating dissension in the ranks of its supporters, but I feel that, with the exception of the Scott amendment referring to State rights, the bill as it passed the House should be very satisfactory to us all, and personally I think that it is better with renovated-butter amendment than without it. The avowed object of all of us in supporting this measure is to get better prices for the producer of milk, and the bill as it passed the House will, I think, secure that end. If the bill has a few friends in the Senate who are endowed with the spirit of enthusiasm to the extent that were the two who recently undertook to settle a question of honor on the floor of the Senate, it will undoubtedly pass.

Whether this bill ever becomes a law or not, I want to say a word of commendation for the noble efforts of Mr. Knight in its behalf. We who are busy every day with the ordinary cares of business, do we ever stop to consider what this long-drawn-out fight has meant to him in the way of time and effort. With the very meagre means at his command he has led this battle from the bottom up, successfully combatting all the difficulties that money could produce or ingenuity contrive. He, of course, has the ever-lasting thanks of every one interested in any way in the milk business, but would it not be a nice thing, and at the same time very appropriate, to show our appreciation in a material way? I am sure that every cow-owner, butter-maker, and creameryman would be glad to contribute to such a fund, and I believe it would be highly proper for the next National convention to inaugurate some plan whereby we could all have an opportunity of expressing our gratitude in that manner.

THE ST. LOUIS EXPOSITION.

I would like at this time to say a few words as to the importance of Kansas dairymen being alive to the good that can be done for our State by making a creditable exhibit at the coming St. Louis exposition. While I understand that one of our Kansas creamery companies made a very creditable display at Buffalo for a time at its own expense for advertising purposes, yet it is not putting it too strongly to say that Kansas was rendered most conspicuous by her absence at the Buffalo exposition. At the time I visited the exposition there a stranger would, from all appearances, have been obliged to buy a map of the United States in order to know that there was a State called Kansas. Of course, this is not to be charged to the dairymen. I remember well your unanimous expression as the Topeka convention in favor of making a creditable showing at Buffalo, and how our secretary, Mr. Borman, was selected to have charge of affairs at the other end, while we were going to give him everything he asked for, and the best we had at that. I remember also how our State legislators, who were at that time in session in Topeka, put a damper on all our ardor by informing us that Kansas would appropriate no money for an exhibit at Buffalo. I know there are those who think our State did right by economizing to that extent, but there are also those that ques-

tion the wisdom of such so-called or real economy which ever it is. It can do no good to speak of these things so far as they relate to the past exposition, but they have the same bearing on the future one. I hope that when it comes, Kansas, and especially the dairy interests of Kansas, will be found well up to the front. We have the ability to make a most creditable exhibit at St. Louis, and I hope that no obstacle may arise to prevent our doing it. Let us each resolve that we will do all we can, and I think the exhibit will be made. No doubt the exhibit made by the State of Minnesota at Buffalo has caused hundreds and hundreds of people to think of that State as producing dairy products and wheat, or "The bread and butter State," that otherwise would have been unable to tell whether her products were butter and wheat, or telephone-poles and bear skins. Once more I say, let us not lose the opportunity to do a good turn for Kansas and ourselves at St. Louis.

Silos and Ensilage.

EUCLID N. COBB.

The great value of the silo is not fully appreciated by our farmers, and in my correspondence and institute work I have found that the impression generally prevailing is that they are very expensive and that there is some mystery in their successful construction. This is not the case. There are a few simple rules to observe, i. e., an air-tight building of sufficient strength to withstand the lateral pressure, which is very great; a foundation wall such as any good building requires, and some kind of a roof. Regarding the first rule, to have the silo air-tight, it is not necessary to be air-tight when empty; any material used in building that will swell when the wet, sappy ensilage is put in the silo sufficient to close cracks is all that is necessary. Material of this kind is flooring, two by fours, and two by sixes; good stock boards will also do for the same. The two-inch stuff is used in building round silos, and the round silo is the best form to build. It is strongest and easiest to construct, and costs less money than any of the other styles of silos.

I am perhaps in a position to give as good advice in silo construction as any man in the country, having used them during the past sixteen years in several States; and I have seen all kinds of material used and all styles of construction, from a hole in the ground to the costly brick structure. I have found that great cost does not necessarily mean success in the silo. I have fed as fine ensilage from an excavation that cost only labor of removing the earth as from a silo that cost \$1,000. The few simple rules above-named can be followed in the low-cost structure just as well as in the expensive building. The cheapest form one can put up is the round silo, built of two by four pine if you are in the pine-lumber belt. If you are where hemlock is cheaper than pine, use that. If tamarack is the cheapest local lumber, use that. If spruce is your cheap building material, use spruce; or if in the coast country west of the Rockies, use redwood. It is just as good as pine, no better. If you are in any of the above localities but are shy on cash and have plenty of muscle and energy, go into the ground as deep as you wish. If the location is well drained, no walls are necessary; just run in the ensilage. But if there is danger of water, plaster on the dirt with cement if the dirt will permit; if not, lay up a thin wall and cement.

THE ROUND SILO.

To build a round silo of two by four stuff, get your lumber and have it dry and free from loose knots; see that the edges are straight, so that when the walls are up the edges will touch evenly the entire height of the silo. In a circle of fourteen feet or more it is not necessary to bevel the lumber to fit the circle; it is better not to do so, because the lumber will dry out more quickly when the ensilage is removed, which tends to prolong the life of the silo by checking decay. In case beveling is done, do not bevel the entire stick's width, only take off bevel from the center of the timbers. This will leave the other half slightly separated from its mate, giv-

ing the air a chance to dry the wood. To the novice, an empty stave silo with its staves showing daylight shining through the cracks from top to bottom, is far from an air-tight building, but one has only to tighten up the hoops snug and go ahead and fill it. A stave silo is like a leaky barrel; it only wants the hoops driven tight to make it as tight as ever. While the silo has not hot water it has something just as effective—ensilage, which is 80 per cent water or sap, and heats up to 180°; and every crack is shut tight.

TO BUILD A STAVE SILO.

To build a stave silo first decide on the size of the silo, then get the material most abundant in your locality. Any lumber that will not warp is suitable; have it dry if possible. If your silo is to be above twenty feet in height, buy lumber of two lengths. For a twenty-four foot building get fourteen- and ten-foot stuff. Or in a twenty-six foot silo, procure twelve- and fourteen-foot lengths. Get your stuff on the ground during some dry, hot days, laying it closely, like a floor. Then take an old broom or a whitewash brush and a bucket of coal-tar (this is called gas-tar and can be bought for 3 or 4 cents per gallon at gas-works) and paint the lumber, not scrimping the amount. Let it lay a day or so, and then turn up another face of the lumber and again give it the gas-tar paint. Continue till all the sides and edges are painted. Gas-tar has been found to be the best preservative of silo walls yet found, and I may add that for rough work, such as farm gates, corn-cribs, and board roofs, it is not equaled by any of our many paints. If the tar is too thick to spread easily, thin it with gasoline.

THE FOUNDATION.

While our lumber is drying we will put in the silo foundation. We must decide where to build, and the best rule is to build just as near the animals' mouths as possible to save the work of feeding. At the gable end of the barn or shed is the best place. To lay the foundation, drive a peg in the center of the ground selected for the foundation. Take a fence board; bore a hole in the end; slip over the peg. Then at half of the distance of the diameter of the silo slip a pin or bolt that will mark the ground as the board is moved around. After this mark is made, set the pin out as far as the width of the foundation trench is to be, which should be sixteen or eighteen inches. Now dig a trench eighteen or twenty inches deep; then fill it up within six inches of the top with small rocks, brickbats, or very coarse gravel. Over this pour thin cement.

After this part of the foundation is complete, start the wall six inches from the outside of the trench, leaving a six-inch jog. That jog is to fool any rat that may wish to explore the contents of the silo. He will dig down to the concrete work and then stop, not knowing enough to follow the six-inch step to the outside of the concrete. It is better to finish the narrower wall with flat rock or brick. Build it up eight or ten inches above the ground level. The dirt should then be thrown up against the wall on the outside, even with the top of the wall to turn the water from the building. The inside circle or silo bottom should be of dirt only. Many people put down costly cement floors, only to find that a large amount of ensilage is spoiled each year. We do not know the cause, but we know that the last foot or eighteen inches of ensilage on cement has a very

offensive smell and is not relished by cattle, while ensilage on dirt can be fed to the last basketful.

A SILL.

I am speaking from sixteen years' experience when I make this statement. I have fed from many cement bottoms, always with the same result. A sill is not necessary, but I always use one. To make the sill, take ten-inch width lumber one inch thick, and cut it in segments of the circle of the wall. Cut enough of these to make the sill three or four inches thick. First bed it in layer of mortar, then give it a coat of gas-tar, then lay on another course, breaking joints; nail down to the lower layer. Continue laying, tarring, and nailing till the desired thickness is reached. We are now ready for the tarred staves or two by fours. But you may wonder how to make a start, what to use for fastening hoops and silo with, and what to fasten staging to. To do all of this requires four timbers of hard wood, four by six inches in size and as high as the silo is to be. Before we put up these timbers, or we may say frame of our silo, we bore enough holes in these sticks to receive the hoops. These holes should be in pairs, and should be two and one-half inches from what will be the inside edge of the silo. The holes should be three inches apart the long way of the timber.

Now we will lay off our circle, finding one-quarter of the distance, where we stand one of these sticks and secure it by toenailing to the sill. Again we measure another quarter distance and set up another timber, continuing till we have the four up. We, at the same time, brace these pieces well with fence boards or two by fours, always keeping out of the inside of the silo. After we have braced the well, we set two by four pieces on the outside of the silo, opposite the four by six timbers, about three feet from them, or as wide as you wish to build scaffolding. We nail lumber from these two by fours to four by six pieces at intervals of about eight feet, on which the scaffold lumber is laid. A silo twenty-five feet high will require three of these stagings.

SETTING UP THE STAVES.

Now we are ready to build or set up the staves. For this work the necessary tools are three hammers and plenty of sixty-penny wire spikes—forties will do in case two by fours are scant four inches, as they often are. Now set up one of the two by fours edge against a four by six piece about every four feet; the men on the different stages will attend to nailing up to the top of the silo. Toenail the two by four stave to the sill with ten-penny wire nails. Continue setting up and nailing. If the upper half of the staves do not want to follow the circle, strike on the inside wall with a heavy hammer, maul, or back of an ax, and the right curve will come. After setting all the staves to the last three or four feet (and this space should be at the place where the doors are to be), make arrangements for doors. The doors are only the wall of the silo cut out on bevel, and the pieces thus cut out nailed together with some barrel staves, the staves giving the short pieces the necessary curve to the circle. The bevel must be on the inside of the silo, so that when doors are set in place the ensilage will press them in place. No frames for doors and no fastenings or hinges are necessary.

DOORS.

In cutting out the doors they should be numbered so they will be put in same place each time. A door eighteen inches by two feet is large enough. To cut out these places it is best to cut the side bevel piece while the two by fours are on the ground. To do this, bore a hole in the center of the two by four on the right bevel and cut with a ten-foot saw far enough to allow a larger saw to enter the cut. When the piece is cut out, tack it in place with some small nails. Now finish up the silo walls, and then the man in the silo will have to cut out the lower door in order to get out. If on the outside, he can cut his way in. The doors must be about three feet apart to be handy in taking out ensilage. The hoops for the silo should be of five-eighth-round iron; each section of hoop should be long enough to pass through two of the four by six timbers and threads should be cut six or eight inches on each end of the hoops so as to take up any shrinkage of the silo. Cast-iron washers are necessary to bear against the four by six; light washers will sink into the wood when the silo is full and pressure bears on the hoops. The hoops should be placed as follows: First one near the bottom of the silo about six inches from the sill; the next two feet higher, and each alternate hoop six inches higher than last put on. This is for eighteen-, twenty-, and twenty-five-foot in diameter silos; on smaller ones may be used fewer hoops, and even one-half-inch hoops will answer. Many people are now using Page wire fencing; the Page Company is making a special fencing for this purpose, to put on this style of hoop. The ends are passed through four by six hard wood pieces and the ends well secured by bending half way around the timber and stapling. Then holes are bored near top and bottom of these sticks for take-up rods to pass through to tighten the fencing around the silo.

ROOF.

Our silo is now ready for roof. I neglected to state in the proper place that the four by six pieces are flush with the inside wall of the silo and are a part of the wall. The roof of the silo can be built of boards put on hip-roof style or a cone-shaped roof can be put on and shingled. Metal roofing is used by many, while many use no roof. I have used silos without a roof and saw no bad results.

Up a Stump 10 MILES TO A DOCTOR Watkins' Liniment all Gone

Enough to discourage anyone. Ill health, big doctor bills, no pleasure in life; blue and discouraged. What's the matter? Simply this. You can't work well, play well or sleep well until your body is in good healthy condition, and you can't keep the body in good healthy condition if you allow disease to once get a foot-hold. It is for this reason that a bottle of

Watkins' Vegetable Anodyne Liniment is so valuable in the house. It is ready when the first sign of cold or chill is felt. A few drops then does what a doctor would charge many dollars to do later. We receive numberless letters like the following:

MANAWA, Wis., July 5, 1901.
I have used Watkins' Vegetable Anodyne Liniment for colds and cramps with very best results.
H. F. ORA.

The Best Remedy made for

Colds, Coughs, Colic, Diarrhoea, Cholera Morbus, Dysentery, Indigestion, Cuts, Burns, Bruises, etc.

An especially strong point about Watkins' Liniment from the farmers' view-point, is that it is equally good for

MAN AND BEAST.

Our agent will furnish you with any of Watkins' Remedies, or if we have no agent in your neighborhood, write to us, and we will see that you are supplied.

GIFT FOR 1902.

We offer a beautiful Cook Book and Home Doctor this year to anyone who will send us his name and address on a postal card. Filled with useful information on everything pertaining to the home. Write to-day. It is free.

THE J. R. WATKINS MEDICAL CO.,
28 Liberty St., WINONA, MINN., U. S. A.



THE SILO IN THE BARN.

Another cheap silo can be built of stock boards, flooring, or other lumber. Where a man has a large barn he may want his silo in one corner of it. The square silo then is his best form. To build this, take two-by-ten-inch planks, lay them down in square shape like a door frame, letting the corners lap, and spike them together well at corners. Then take planks two feet long and spike them at the corners so as to make the corners four inches thick. Then saw the pieces to bind across the corners. These pieces should be three feet long. Spike them well. You have now got the frame of the silo finished. These frames are to take the place of the hoops on the round silo. To start to build, pile on top of each other all of these frames just where the silo is to be built; then take lumber (flooring, stock boards or shiplap will be good) go inside of frame, stand up the boards at each corner and nail the bottom of the boards to the sill or to the bottom frame. Then raise the top frame to the upper ends of the standing boards, and nail. If you want a silo deeper than one length of lumber, let the first course of lumber reach to the center of the top two by ten frame; the other course will then have room for nailing. Now raise the next frame up within four feet of the upper one and continue to drop down three and one-half feet, three feet and two and one-half feet, and the last frames should be two feet apart. Now board up the inside, after which, if stock lumber has been used, put on a heavy grade of tarred paper, then break the joints and put on another layer of lumber. If flooring is used one thickness will answer. These silos are cheap, good, and lasting; and being in barn require no roof.

Silos, like everything else we build, may cost as much as we may feel like spending on them. One man is satisfied with a barn costing \$500, while his neighbor will spend three times as much on the same sized building. Where one has fine buildings it may be well to harmonize by having a fine silo.

THE VALUE OF ENSILAGE.

The great value of ensilage is its succulent property. I have often seen stated by our eminent authorities on feeds that the silo does not add to the value of our corn-crop or such crop as we put into it. I refer all such people to Old Brindle during the winter months when she is receiving a liberal feed of juicy, warm ensilage, while the cow belonging to the fellow who says the silo does not add value to the crop is eating dry corn-fodder and wasting fully one-half of it. Our daily milk record of individual cows shows us that value is added in September to be fully realized on in January. Ensilage is the link between one green grass period to another. It is our pastures for winter. During past grass season we have given both ensilage and blue-grass careful tests, and in every test our cows proved that ensilage was a superior food over grass, and any school-boy can easily figure what our grass pastures cost us. When an acre of good corn in the silo will feed a cow twelve months, and every day of that period finds the cow well filled and contented, can we say even that our cow is contented five months on

blue-grass pastures? Our milk record of daily yield of the herd shows that our pastures will keep cows doing well for the months of May, June, and a part of July, but that after that they would shrink rapidly if some other crop were not fed them.

AS TO THE COST.

While ensilage is valuable for the dairyman, the stockman can get as great value by feeding it to beef steers, stockers, hogs, sheep, or horses. Every kind of farm animal is fond of it, and there is no cheaper source of feed known in the corn-belt. While it is cheap, it is a great promoter of health and growth, and it is a handy feed. The great objection to ensilage in the past has been the cost of putting it into the silo; but at this time, with the low-down wagon, the corn-binder, and improved cutting-machines, we have reduced the cost in our own case from \$1.25 in labor per ton to 33 cents, and I have seen reports from several farmers who have done as well.

We have found that our cheapest ensilage is always that we put up with a cutter of large capacity and a good force of men. We never could cheapen the labor of running a limited number of men and a small cutting machine. For either fodder, green crops, or hay always get one of more capacity than you really need; you then have a machine with reserve force, and one that has heavy castings, frame, and shafting. In case you wish to crowd it you can do so, and feel safe in the strength of your machine.

FILLING THE SILOS.

To equip your wagons for hauling the corn to the cutting-machine flat racks are the best. Deck them over with boards so that the men can be free to walk about on them with nothing to stumble over. Be sure to use low-down wagons; they save much heavy lifting. We have metal wheels that fit our ordinary farm wagons, so that one set of running gears answer for both high and low wheels. To make the filling of silos easy and to insure the corn being distributed evenly in the silo, have a large funnel made of galvanized iron that is somewhat wider at the mouth than the carrier is at lower end. Have it twelve or fourteen inches in diameter, with some hooks riveted on the outside to hook the sack-carrier to. This carrier should be made of gunny-sacks sewn together, making it long enough to reach to the bottom of the silo, so that when cutting the ensilage, one man can lead this sack-carrier around the silo, saving a great amount of work with pitch-forks. Always keep the outside edge of silo four feet higher than center; do all of the tramping around the edge. It is not necessary anywhere else. When the silo is well filled, level it up or round it up well, and by running up some wet oat or wheat straw and covering ensilage four or five inches thick, it will keep well for an indefinite period; or one may begin feeding it at once if necessary.

The power for running the cutting-machine may be a tread, a sweep horse-pow-

TO CURE A COLD IN ONE DAY

Take Laxative Bromo-Quinine Tablets. All druggists refund the money if it fails to cure. E. W. Grove's signature is on each box. 25c.

I Will Cure You of Rheumatism.

No pay until you know it.

After 2,000 experiments, I have learned how to cure Rheumatism. Not to turn bony joints into flesh again; that is impossible. But I can cure the disease always, at any stage, and forever.

I ask for no money. Simply write me a postal and I will send you an order on your nearest druggist for six bottles of Dr. Shoop's Rheumatic Cure, for every druggist keeps it. Use it for a month, and if it does what I claim pay your druggist \$5.50 for it. If it doesn't I will pay him myself.

I have no samples. Any medicine that can affect Rheumatism with but a few doses must be drugged to the verge of danger. I use no such drugs. It is folly to take them. You must get the disease out of the blood.

My remedy does that, even in the most difficult, obstinate cases. No matter how impossible this seems to you, I know it and I take the risk. I have cured tens of thousands of cases in this way, and my records show that 39 out of 40 who get those six bottles pay, and pay gladly. I have learned that people in general are honest with a physician who cures them. That is all I ask. If I fail I don't expect a penny from you.

Simply write me a postal card or letter. Let me send you an order for the medicine. Take it for a month, for it won't harm you anyway. If it cures, pay \$5.50. I leave that entirely to you. I will mail you a book that tells how I do it. Address D. Shoop, Box 529, Racine, Wis.

Mild cases, not chronic, are often cured by one or two bottles. At all druggists.

er or steam. The latter is the best. At the time of cutting the crop a threshing-engine can be hired at a low cost. We have a stationary engine in the creamery building with which, by using belts and shafting, we can fill all of our silos without moving the engine. Less power is required for running the cutters with the bucket-carriers than is required when the blower style is used. There is about two-horse power difference in the large machines and somewhat less in the smaller sizes. The cutter we use cuts a ton and one-half of green fodder in six minutes, and an eight-horse engine does the work easily. The knives are sixteen inches long. We use two sets, so that we can grind one set while the other set is in use.

BALANCED RATIONS.

For the dairy herd, ensilage lacks protein, which must be supplied by feeding some form of grain rich in this nutrient. We have found cotton-seed-meal, dried brewers' grains, or bran the best for this. A thousand-pound cow should receive thirty-five or forty pounds of ensilage, five pounds of hay, and eight to ten pounds of grain in twenty-four hours. The ensilage and grain should be divided into two feeds and the hay fed at night. It is well to feed some oat straw at noon or a small amount of cut corn fodder. Six pounds of bran and two pounds of cotton-seed-meal is one grain mixture; dried brewers' grains, five pounds, with two pounds of cotton-seed-meal, another; or one may use oats in place of the bran or grains.

The beef cow, if well sheltered, will winter well on ensilage and some straw or hay. Growing animals of any breed do well on ensilage and some form of roughage—straw, hay, or fodder. Brood-sows do splendidly on it with no other feed. The poultryman can not give his poultry anything so conducive of health and eggs.

New Basis Upon Which Farm-separator Cream is Bought.

E. W. CURTIS.

It has become somewhat the custom at the various dairy conventions held in recent years, to retain a place on the program for the hand-separator discussion; and as the hand-separator proposition has not been very popular among creamerymen, at least, until quite recently, the discussions which followed have sometimes equaled in vigor and intensity the little episode in the United States Senate the other day, in which Mr. Tillman and Mr. McLauren emphasized their remarks so emphatically that one retired with a bumped head and the other with the nose bleed. It occurs to me that the "bumped head" and the "nose bleed" period in the discussion of the hand farm-separator is past.

In a brief paper of this kind it is hardly possible to advance all the arguments in favor of, or against, the use of the hand separator among creamery patrons, and I shall attempt more to study the probable effect the hand separator is having and will have on our creamery business. No discussion of the hand separator can be of value unless we recognize that its use affects two parties, the farmer and the creameryman, as both are vitally interested in the proposition. The question then resolves itself into a study of the value of the hand separator to the farmer, as well as the creameryman.

The farmer, we find, is generally in favor of the system of separating his milk at home and those who have separators usually are contented in their use, many being enthusiastic. Occasionally, however, we strike a farmer, or even a community of farmers, who have stopped using their machines and are condemning them and the system as failures. A candid observer will, however, be able to pick out the cause for this discontent. Possibly the creamery management has not been satisfactory. It may be the farmer tried to buy a cheap machine, and found that he had bought a rattletrap. These exceptions but prove the rule, are to be expected, and do not detract from the fact as stated, that the farmer who has once become familiar with the system of separating on the farm considers it unprofitable to haul the whole milk to the creamery. He gives his reasons briefly as follows:

POINTS IN FAVOR OF THE HAND SEPARATOR.

First, the burden of hauling is considerably reduced. Under the old system, the average cost of hauling the whole milk to the creamery and the skim-milk back is at least 10 cents per hundred. This is 2½ cents per pound of butter. For 2½ cents I can pay the transportation on one pound of butter from any point in Kansas, to Liverpool, England, 4,600 miles away. Putting it another way, say the average distance hauled by the farmer is five miles, and suppose the railroad companies charged the same rate for hauling a pound of butter-fat as the farmer now pays, 2½ cents per pound for five miles, then the cost of transporting that pound of butter to Liverpool, England, would be \$23, as the distance hauled is 920 times greater than the distance hauled by the farmer. If some of our dairy farmers would stop worrying about the high rates charged by the railroad companies and think more about cheapening the cost of transportation between the farm and the depot, they would undertake a problem whose solution would be of lasting benefit to themselves and their neighbors. One way of cheapening the cost of transporting butter-fat to the manufacturing plant is for the farmer to be the owner of a hand separator and have it set so as to skim a cream of high percentage of butter-fat. In this way the bulk

of raw material transported is reduced to one-tenth of the volume now hauled, and there is no skim-milk to haul home, as in the whole-milk system.

Second, the farmer finds the skim-milk from a hand separator more suitable as a calf feed, and finds that where fed in a proper manner he can raise a calf that, when a year old, will be equal if not superior to the calf that has run with the cow. There are many other advantages that go with the farm-separator, but those enumerated, with the testimony of the users, are sufficient to show us its practicability for the farmer.

THE CREAMERYMEN.

But how about the creamerymen? It may be readily seen that he can make a considerable saving in cost of building and machinery by doing away with his separator and attending milk-vats. He can get along with some less help in the creamery, and the butter-makers' occupation is reduced to simply receiving, ripening, and churning the cream. The creamery can cover a larger territory, as the cream can be hauled a longer distance than whole milk. In this way he can materially increase his output.

Are there any disadvantages to the creameryman, where the patron uses a hand separator? It is only just that we should consider both sides. Theoretically, it would seem that there would be no trouble in any way, and that a system having so many points of advantage to both farmer and creameryman could not help being a boon to all concerned. But right here is where theory and practice do not travel in the same Pullman palace.

A study of the general condition of butter-making shows us that the standard of excellence is much higher to-day than ever before. The public is more and more demanding a higher grade of butter, and some people even will prefer to go without butter than accept a quality that does not suit. I believe the standard of quality will be higher, ten years from now, than it is at the present time. The demand at present, for anything under fancy butter is limited, without a very considerable concession in price, and as time goes on this concession will have to be more and the difference in the price of fancy and under-grade creamery will gradually widen. I think these tendencies are just and right. Quality should and always will count, and the man who can produce the goods will get the price. There are always lots of people who are able and willing to pay a premium if they can get premium goods.

Does butter made from hand-separator cream have the quality. Usually I would say "Yes," but under present conditions, occasionally, "No." It seems impossible under ordinary conditions to make as high a grade of butter from hand-separator cream as from cream separated at the skimming-station. This statement is rather broad, but I believe any creameryman who has handled any quality of hand-separator cream through several summers will bear me out in this statement. The creameryman's inability to get the farmer to handle his cream in such a manner that it will arrive at the creamery sweet, seems to be the cause of the trouble; and really the farmer is paid just as much for poor cream, at most of the factories, as he would receive for cream that had been well cared for. In the struggle to get more cream and do more business we overlook the fact that we must have sweet cream in order to make butter having a high quality. In my own creamery work we have tried various expedients for getting the patron to take proper care of his cream. First we tried moral suasion, and found that it was very easy to teach most of the patrons to care for their cream so that it would arrive at the creamery in fair shape, but quite a proportion of them seem to soon find out that they get just as much money for their cream when in poor condition as when well cared for.

We have tried scoring cream when received at the creamery, sending patron notice when his cream scored less than a certain point, but without any pronounced good results. Instructing the hauler to reject poor cream raises the matter of what is poor cream, and there is usually a chance for a good healthy discussion between patron and hauler over this matter. It is evident then that, unless something is done to keep up the quality of butter made from our hand-separator cream, the entire system will fall.

ONE METHOD.

To meet this difficulty we have been experimenting since last fall with a modification of the acidity test to be used in buying cream. We are not grading cream this winter, but as soon as the season opens, we expect to buy sweet cream paying the highest price therefor, while any cream that is not sweet, we will purchase at 1 cent less than the price for sweet cream. As a guide for the station man, route-man, and butter-maker, they may use a simple test whereby they can tell at a glance if the cream is sweet or sour, and there will be no chance for dispute with the patron.

The test used is a modification of the

acidity test. A two-ounce, wide-mouth bottle not more than an inch in diameter is used. This bottle has two frosted marks around it, and it is filled up to the first frosted mark with standard one-tenth normal alkali to which a small quantity of phenolphthalein or indicator has been added. When cream is received at the skimming-station, on the route or at the creamery, where there is any doubt as to its being sweet, one of the two-ounce jars is filled with cream at the same time and from the same sample taken for composite fat test. Enough cream is poured into the jar on top of the alkali to bring the mixture up to the level of the second frosted mark on the jar. The contents of the jar are then shaken up, and all we have to do is to observe the color of the mixed cream and alkali. If the cream is sweet enough to use, the alkali will predominate and the mixture be pink. If the color disappears entirely, the cream will contain more than .3 per cent acidity, and will be too sour to use for fancy butter; but can be purchased for 1 cent less per pound of butter-fat than sweet cream. A jar of any size can be used, but it must be noted that exactly three times as much alkali as cream must be used. For instance, if it takes 17.5 cubic centimeters of alkali to fill the jar up to the first mark, we should use one-third that amount of cream, which will fill it to the second mark. A greater or less amount of cream and alkali can be used, but they must always be in this proportion if we wish to set .3 per cent acidity as the "dead line." If we wish to accept cream a little more sour, i. e., with a little higher per cent of acidity than .3 per cent we would have to use a little larger proportion of alkali to cream; and a smaller proportion on where we wish to buy cream sweeter than .3 per cent acidity.

If we will buy our skimming-station and hand-separator cream according to its quality, in this way, paying a certain price for sweet cream and a lower price for No. 2 cream, we will have made a long step in advance, and the hand separator will not be the bugbear it now is to some people. By this method of buying cream the patron speedily discovers that he is not paid as much when he is dirty and slovenly with his cream, and he is encouraged in a financial way to be clean and painstaking. A premium is placed upon cleanliness, and the premium is payable monthly, in dollars and cents, added to his cream-check.

PASTEURIZATION.

The time is coming, I believe, when we will see pasteurizing-stations in almost every village and town in the State, for pasteurizing hand-separator cream. It goes without saying that this cream would have to be received sweet in order to be pasteurized. The cream can be graded by the modification of the acidity test described, and everything under .3 per cent acidity pasteurized; over that it will have to be bought at a less price and shipped raw to the central plant where it can be made into second-grade butter. I said that the time was coming when we would see pasteurizing stations; I will say that the time has arrived, and I know of several such plants in successful operation. The rapidly with which many of our creamery companies are changing from the factory and skimming-station system to the hand separator, is astonishing. It is estimated that there are twenty companies in St. Paul and Minneapolis buying hand-separator cream; Sioux City, Iowa, has a large company; Omaha and Council Bluffs, half a dozen companies; St. Joseph and Leavenworth, one each. In our own State the Continental Creamery Company is buying considerable hand-separator cream, and a number of prominent creameries are adopting the system. In Iowa there are scores of such concerns, and the sales of hand separators in Iowa last year by the various companies, is being estimated at all the way from five thousand to ten thousand machines. One company in Nebraska sold last year alone one thousand hand separators. Within a few weeks the Elgin Creamery Company of Elgin, Ill., one of the largest creamery companies in that State, has commenced buying hand-separator cream.

It would seem then from a study of the facts that: First, the hand separator is being rapidly introduced in spite of strong opposition; second, that the average quality of butter made from hand-separator cream is not of the best; and third, that the quality of hand-separator cream can be improved by buying sweet cream and paying therefor 1 cent more than for sour cream, this grading being done by the use of a modification of the acidity test and all of the sweet cream being pasteurized.

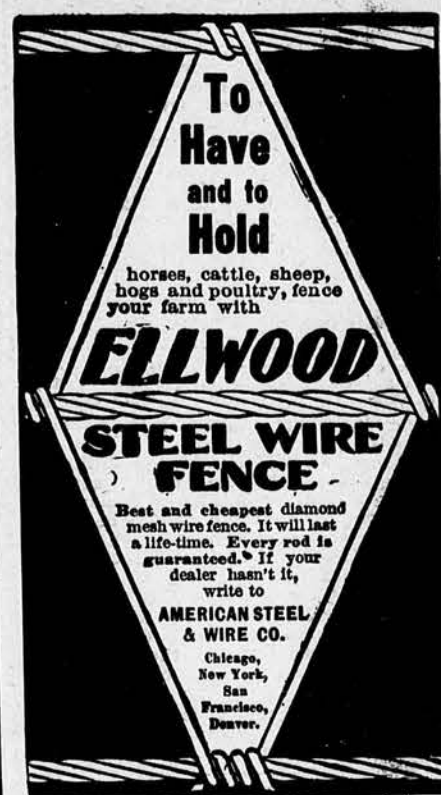
The Use of Skim-milk in Cooking.

EDITH A. M'INTYRE, PROFESSOR OF DOMESTIC SCIENCE, KANSAS STATE AGRICULTURAL COLLEGE.

This was a demonstration rather than a paper. Miss McIntyre, assisted by members of her class and equipped with the necessary gas-stove, tables, dishes, etc., gave a most interesting explanation of the processes involved in the making and cooking of the dishes named below. That the results were highly satisfactory was attested by many in the audience who proceeded at once to "sample" the product of her skill. We can not give our readers an opportunity to test these products, but we give the formula so that they may be tested at home by all who care to try them.

ABBREVIATIONS.

Quart—qt.; pint—pt.; cup—c.; tablespoon—



ful—tblspn.; teaspoonful—tspn.; saltspoon—sspn.

CREAM OF CELERY SOUP.

Celery (cut in one-half inch pieces).....3 c.
Water (boiling).....2 c.
Milk.....2½ pt.
Onion juice.....¼ tspn.
Lactic-acid species used in ripening cream,
Butter.....4 tblspns.
Flour.....4 tblspns.
Salt.....1 tspn.
Pepper.....¼ sspsn.

1. Wash and scrape the celery before cutting into pieces.
2. Cook in the boiling salted water until soft, then run through a sieve.
3. Melt the butter, remove from the fire; stir in the flour, salt, pepper, and onion juice.

4. Add the milk. Place over the fire and stir constantly until the mixture reaches the boiling point. Boil three minutes.
5. To this white sauce add the prepared celery liquid. Stir well and heat.
6. Serve hot with or without croutons.

Remarks.—The root stalk of the celery may be utilized for soups as well as the outer and tougher stalks.

CREAM OF PEA SOUP.

Peas.....1 can.
Sugar.....2 tspns.
Water.....1 pt.
Milk.....1 pt.
Onion juice.....¼ tspn.
Butter.....2 tblspns.
Flour.....2 tblspns.
Salt.....1 tspn.
Pepper.....¼ tspn.

1. Drain the liquid from the peas, add the cold water and sugar. Simmer twenty minutes or until very tender. Rub through a sieve. Reheat.

2. Melt the butter. Remove from the fire; stir in the flour, salt, pepper, and onion juice.
3. Add the milk. Place over the fire and stir constantly until the mixture reaches the boiling point. Boil three minutes.

4. To this white sauce add the pulp of the peas. Bring to the boiling point.
5. Serve hot with or without croutons.

Remarks.—Peas from the vines, too old to be used as a vegetable, may be utilized for soups.

MACARONI WITH CHEESE AND WHITE SAUCE.

Macaroni (in inch pieces).....1 c.
Water.....3 qts.
Salt.....1½ tblspns.

White Sauce.

Butter.....2 tblspns.
Flour.....2 tblspns.
Salt.....½ tspn.
Milk.....2 c.

Cheese, American Cream.

Cheese (grated).....1 c.
Buttered Crumbs.

Bread crumbs.....1 c.
Butter (melted).....¼ c.

1. Cook the macaroni in rapidly boiling salted water twenty minutes or until soft.
2. Drain in a strainer and pour cold water over immediately, to prevent the pieces from sticking.

White Sauce.

1. Melt the butter. Remove from the fire, stir in the flour and salt.
2. Add the milk. Place over the fire and stir constantly until the mixture reaches the boiling point. Boil three minutes.

Cheese.

1. Grate or cut in very small pieces.
Remarks.—Dry cheese is better than the soft fresh cheese as it grates or cuts more readily.

Buttered Crumbs.

1. Melt the butter and stir the crumbs into it with a fork.
Remarks.—Dry pieces of bread may be

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rolled and sieved and put away for use when needed.

Putting the Ingredients Together.

1. Put a layer of macaroni in the bottom of a vegetable dish, over this pour a portion of the white sauce. Over this sprinkle a layer of grated cheese.
2. Repeat this process until the materials are used.
3. Over the top spread the buttered crumbs, taking care that the top is evenly covered.
4. Bake in a moderate oven until the crumbs are brown.
5. Serve hot.

BAKED CUSTARD.

Milk (scalded).....4 c.
Eggs.....4
Sugar.....½ c.
Salt.....¼ tspn.
Nutmeg.....A few gratings.

1. Beat the egg slightly, add the sugar and salt.
2. Stir in slowly the scalded milk.
3. Pour into a buttered mould, set in a pan of hot water and bake in a slow oven until firm. This may readily be determined by running a knife through the custard; if it comes out clean the custard is done.

During baking care must be taken that the water surrounding the moulds does not reach the boiling point. Over-cooking and too great heat causes the custards to whey or separate, as eggs cook at a low temperature.

Remarks.—This recipe is for cup custards. If a large custard is to be made, add two more eggs.

The Dairy Student After He Leaves College.

PROF. D. H. OTIS.

One of the prime objects of an education is the training of the mind. In an industrial college, and especially in the short courses of an industrial college, the training of the mind is expected to go hand in hand with that knowledge that will be of use to the student in his after life. It should be remembered, however, that it is not the object of an education to turn out men experienced in every detail of his chosen work. In fact, when a student completes a certain prescribed course of study, it is called his commencement. In other words he is just ready to commence. A few days ago, several of the dairy boys expressed themselves to the effect that if they could only begin the dairy course where they will leave off the last of March they thought they would be able to get so much more out of it. That is the point, exactly. The students have reached the place where they know better how to study, and if they have learned nothing else they have been well paid for the time and money spent at college.

Does this mean that the student should keep up his studies after leaving college? Most emphatically it does. He may not pursue as many books nor recite from them in classes, but he is to study diligently the particular work in which he is engaged. The information he gains may come from books, it may come from papers, or it may come from his or other's experiences, but study he must if he is to make the most of his opportunities.

Kansas is preeminently a State of skimming-stations, and the larger number of the dairy students who seek employment, will doubtless begin their careers as skimming-station operators. To my mind, these stations offer the best opportunities that a creamery company can present to young men. From the dairy school to the skimming-station is a good "commencement," providing the student has the gumption to commence.

What can a dairy student do at a skimming-station? First, he must realize that his and the company's interests are identical. This spirit can be greatly encouraged by his working on the commission plan. His time should be devoted to developing one business only, and not trying to run a farm, a barber shop, a dray, clerking in a grocery store, etc., etc., besides running the skimming-station. This station should be a model of cleanliness, an object lesson to all who come near it. He should realize that his reputation is at stake and that he must get out among the farmers and rustle more milk, every pound of which means that much more to his income. This rustling does not mean asking for more milk in so many words, but includes intelligent suggestions on the feed and care of the dairy cow, the best way of handling skim-milk for calves, calling the attention of farmers to important articles along dairy lines in the farm and dairy papers. Visiting the cow-yard, the calf-pen, the piggery, and noting how the stock are growing, will show to the farmer that the station-operator is interested in farm work, and in return the farmer will be more interested in the amount of milk that is sent to the creamery. Again, the station-operator will do well to keep account of the number of cows each patron is milking and at the end of each month figure up the income per cow. Note the differences between patrons and find out the cause for this difference. This kind of a record, figured up promptly from month to month, would be a revelation that would be interesting and very instructive, both to the station-operator and his patrons. In my judgment the skimming-station operator should have a skimming-station map. On this map could be the name and location of every farmer within a radius of five, six, or seven miles, whatever distance is covered by that territory. Each farmer, whether a patron or not, should be visited at least once a year, information gained on how many cows are

kept, how much is realized from the milk and butter, and, if circumstances permit, suggest ways and means by which these profits might be increased. If the farmer is not a patron, show him, if possible, why it is to his advantage to become one. Information could also be gathered on the best crops to grow and the best methods to employ, in providing feed for the dairy cow, in the handling of hogs to utilize the skim-milk and other by-products of the dairy to the best advantage, and in a hundred and one ways gain information that will be useful in dealing with the various farmers and patrons, and at the same time make a broader and more useful man of the station-operator.

At least once a year the station-operator should see that a farmer's institute is held in his locality. There are very few places where a rousing institute could not be worked up if the right man is ready to push it. This institute should be well advertised. Posters should be placed in every business house in town; they should also be placed on every cross road. The country newspapers should be informed of the plans and urged to cooperate in working up interest along this line. Get successful and influential farmers interested by placing them on the program and seeing that they perform their respective duties. Interest the young people in the musical and literary part of the program.

What inducements are there for a young man to work up his business in this fashion? If he is working on commission, there is an immediate financial inducement. But no dairy student should be so short sighted as to be swayed by this alone. He should realize that he is engaged in a business in which there are great opportunities for growth and advancement. The dairy interests of our country are, today, looking for high-priced men, but each man must prove himself competent before he can expect to command that high price.

As an inducement to greater effort, on the part of the dairy student leaving this institution, I would like to present for your consideration and discussion the plan of



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A Typical Guernsey Dairy Cow.

the Agricultural College issuing a certificate to its dairy students, not at the completion of the twelve weeks' course, but upon a year's record that he makes in a skimming-station, creamery, or on a dairy farm, after leaving college. This record would involve a monthly report of the number of pounds of milk delivered by each patron, together with the number of cows kept by each, in producing this milk. The report should be mailed monthly to the department of dairy husbandry, Kansas Agricultural College, and if desired, a copy sent to the creamery company for whom the dairy student is working. At the end of the year he should send in a creamery or skimming-station map indicating the location and name of each farmer in his territory. This should be accompanied by a detailed account of his visit to each farmer. He should also get a statement from his employer, that he had kept his station or creamery clean, that he had kept his machinery in good repair, that he had been polite and accommodating to his patrons, and that he had given general satisfaction.

On the basis of these reports and statements, together with his record at the college, a certificate could be issued to the dairy student, that would mean something. When, for instance, a creamery company wanted a bright, energetic young man to fill a higher position they could look for one with a dairy certificate and feel reasonably sure they were getting what they wanted.

In the above discussion, attention has been given almost entirely to the skimming-station operator, as he at present plays by far the largest factor in the work of our Kansas dairy students. A similar arrangement could be perfected for the creamery butter-maker by arranging for him to send samples of his butter on short order to be scored, and requiring him to come up to a certain standard. For those students who return to the dairy-farms, and we hope for many of them in the near future, instead of keeping records of different herds, could keep records of individual cows in his own herd in the same manner in which the station-operator keeps track of the different herds.

I would like to see a free and open dis-

cussion of this subject. The Kansas Dairy School has no set dogmas to follow. It is our aim to do the best we know how to advance the dairy interests of the State. We are always glad for suggestions that will aid us in accomplishing this purpose.

The Station Operator—What He Is and What He Ought to Be.

F. L. HUXTABLE.

The station-operator is very much what his environments have made him. His recollections carry him back to his forge or his anvil, or to the dry goods store, or to the railway service that he may have formerly served in, or in many of our cases it carries him back to his boyhood days on the farm. He, perhaps, is a successful man in any of these occupations in which he has been reared and trained, or he may have failed at it and turned out as an operator in hopes of making of this what he has failed to make of his former occupation. Be his cause for changing what it may, we have few operators who have any recollections of early experience with the cream-separator or with the Babcock-test machine.

In fact, in the weighing of milk and taking the samples of the same, then in

ated by men looked upon as successful and found their separators running 1,000 per minute in error, they at the same time declaring that everything was running nicely. We feel that the operator of the future must needs be an engineer, not only in the sense of handling an engine where he may build a fire and turn the throttle or where he may be able to set the valve or tighten the brasses on the crank; but he must be an engineer in the handling of men. He must be a man who calculates his surroundings and his power, not only his power but the opposition he must meet. He must meet this like a man. He is lawyer, judge, and jury to decide between man and man.

In the future we will have operators who have grown up in this business, who have been reared in some of the channels of this business, and who will know more than that which is merely before their eyes momentarily. It is claimed that 98 per cent of all we know we have learned from others, or that 2 per cent of what we know is of our own development. If this be true, how greatly will the future be influenced by those who are observing the present operations of all these various things. With our own State and so many of our neighboring States carrying on a State school with 75 to 100 students in the short course each winter and 100 to 500 in the agricultural courses each season, how soon it must be that we will have operators thoroughly familiar with all these conditions. And the operators naturally will have learned, as the farmer-boy learns to do the ways of the farm, or the mechanic's son learns the way of his father, or the storekeeper's child learns of the pursuit of his father.

So we say the operator of to-day is made largely what he is by his environments, and so will be the operator of the future. But the operator of the future will have the advantage of the operator of to-day as the mechanic of to-day has the advantage of the mechanic of years gone by.

We think the day of hiring operators for \$20 to \$40 a month is past. Our idea is that an operator should be paid for just what he is and just what he does. And we are proud to say that in the past year a number of our operators have made \$90 to \$120 per month, but not without pluck and push, and we think the field is open to-day and with room for more liberal use of "gumption," as Professor Walters would say. Our operator who wishes merely to weigh in the milk and run the separator a few minutes or a few hours and then clean up his station, whether it be well or poorly done, and then to proceed to have a good time the balance of the day, or perhaps earn a few dimes on the side at some other occupation, will in the future, as in the past, continue to work for \$20 to \$30 or \$40 per month. But the operator who is willing to take his Babcock-test machine and his scales and go from farm to farm and weigh and test the produce of each and every individual cow in the herd, the one who is willing to study breeding and feeding and keep thoroughly posted in all the different branches of his business, be equally able to repair his separator, his engine, or his belts, or to repair a milk route or some patron's feelings when his test is not what the patron thinks it should be, going out with the scales and test machine and assist that patron in weeding out the cows that are there merely as boarders, be a persistent reader of dairy papers and student of his business, when the operator can accomplish all this, then will he be the man who commands wages.

He will, as our postmasters who work for Uncle Sam, as almost every traveling man upon the road has to do, receive pay according to what he does. Or in other words he will operate upon a commission basis and be a happier, a healthier, and a wealthier man.

Pasteurization and Its Relation to Kansas Dairymen.

ED. H. WEBSTER.

A gentleman stepped into a Kansas skimming-station just as the operator began skimming his milk. The receipts were evidently small, for the can under the cream spout contained the cream from the previous day's skimming. The cream was sour; but, nothing daunted, the operator ran his fresh cream into it and chucked the can of the mixture into an old dirty tub containing dirtier water, adjusted a hose, turned on the steam and went about his other work.

In the meantime the visitor took a few observations. The station was anything but clean in appearance. The machinery was not kept up in shape. Observations were, however, soon cut off by the steam from the old tub where the cream had been put. At this point the operator secured from an obscure corner a long slab, and souzing it into the cream began to stir vigorously. The visitor determined to know what was going on in the cloud

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of steam, and a question brought forth the answer, "Pasteurizing the cream."

The imagination of the visitor may have been stretched a point or two in his narration of this incident, but nevertheless, I am glad to say that this skimming-station operator had not taken the course in dairying at the Kansas State Agricultural College.

An enthusiast in pasteurization a few years ago, thought he had discovered in it a panacea for all the ills of the creamery business, and in a few short weeks, comparatively, ran his company several thousand dollars behind. To-day, by national legislation, the creameries of Denmark are compelled to pasteurize, and as a result their butter brings the highest price on the English market. The Continental Creamery Company of our own State is operating from 75 to 100 pasteurizers, and is obtaining very satisfactory results where the machines are intelligently handled.

A PROBLEM FOR KANSAS CREAMERYMEN.

These illustrations are given to show that there are two sides to this question and that it is a problem before the Kansas creamerymen worthy of their best thought and attention. If Denmark can increase the value of her products through compulsory pasteurization, there is room for some good honest reflection on our part. If in some instances men have failed in this method of making butter, we must learn how to avoid the failures, and the fact that we have upwards of 100 machines operating in Kansas brings this question of success or failure to our doors.

In order to discuss this matter in an intelligent way we must first look briefly into the principles underlying pasteurization. The object of pasteurization is to destroy the germ life in the milk so that it will keep pure and sweet for a longer period than it otherwise would. Milk drawn fresh from the cow should contain but little if any bacterial life. In this condition it would be the ideal milk for the butter-maker. He could make his starter and ripen his cream, assured that his butter would be fit for the inspection of the judge at any time.

Unfortunately, this condition is an ideal, only. From the moment the milk leaves the udder it becomes the recipient of an innumerable hosts of bacterial life, in which under the favorable conditions of heat, moisture, and food, development takes place at an enormous rate, and in a few hours the milk has become so changed from its original purity that it is anything but fit for the manufacture of fine butter.

THE DIFFICULTY OF OBTAINING PURE MILK.

Dairymen can, by using the utmost care, produce what is known as sanitary milk. The care and cost necessary to do this, unless a price of 8 to 12 cents per quart can be secured, is beyond the means of the ordinary dairyman selling his milk to a creamery. All that the creameryman can demand is that the cows be kept clean and the milking done in a cleanly way, and that the milk be cooled at once to a temperature sufficiently low that it will be delivered to the creamery perfectly sweet.

At best this gives us but a fair quality of milk, and observation taken at a large number of creameries and stations shows that there is always some milk delivered which is not what it should be. Every creameryman knows that one lot of poor milk will lower the quality of the whole day's run. In the individual creamery this defect in the milk can, to a great extent, be overcome by skimming a heavy cream, using a large quantity of starter, and ripening quickly. In our Kansas system of central churning plants and numerous skimming-stations, the problem is made much more difficult. The cream has to be subject to long hours in transit, giving the germ life of the milk opportunity to develop and destroy the flavor of our cream.

We have stated that milk, when perfectly fresh from the cow is comparatively free from germs. By quickly cooling to a low degree, from 45° to 55°, we can check this development and prolong the life of our sweet milk.

It is recognized by students of dairy bacteriology that there are species of germs which will develop and thrive at this low temperature and that they are mostly of a kind that give us off flavors of our butter. The long time from the cow to the central factory gives these germs time to get in their work. This kind of deterioration is common to the winter months. In the heat of summer we can not keep the cream sufficiently cool in shipping to stop the development of acid, and the result then is over-ripe cream and sour butter.

It is to overcome these conditions that the Kansas creamerymen are looking for a solution in pasteurization. The question is, will it help us out? We have said that

the object of pasteurization is to destroy germ life. This it will do, but it will not destroy the products of germ life. In souring of milk, lactic acid is produced. We can heat the milk sufficiently high to destroy the germ, but the acid remains and gets in its work of giving flavor to the butter-fat. We may destroy the putrefactive species which work on the casein of milk and produce some of the off flavors, but we do not destroy the products of their action. From this we must see that in order to obtain results we must use milk that is still but little affected by the action of bacteria, or in other words the foundation of successful pasteurization must be in pure milk.

The temperature of pasteurization varies from 150° to 190° F. The Danish law requires that the milk be heated to 180° F. This is true of the temperature, that the higher we heat and the longer time the heat is applied the more thorough is the work, but we must guard against a serious fault on the other side, of scorched flavor in the product. It has been found that where the higher temperatures are used we must be more particular with the quality of the milk and must cool quickly in order to escape the cooked flavor.

For any one to intelligently handle a pasteurizer he must know something of the principle of bacteriology. When we consider the fact that bacteria swarm about us on every hand in countless numbers, every particle of dust being the bearer of myriads of them, that whenever putrefaction or decay takes place bacteria are the direct cause, that they swarm in air, water, and soil, in our stables and creameries, it seems a hopeless task to attempt to get rid of them. But comparatively few of these vast numbers of minute plant life, however, affect the dairy products, so we may breathe easier. The problem before the butter-maker is to control these few kinds so that those beneficial, as the lactic-acid species used in ripening cream, can do the work properly without being



ORANGE DUKE 22476, A. G. C. C.

A Typical Guernsey Bull.

crowded out by those destructive to desired results.

DO NOT SOW THE SEEDS OF BACTERIA.

Properly applied pasteurization will aid him here. A few things must be observed, however. It matters not how much care has been taken in pasteurizing a lot of cream if, after it is done, we put it into a can which is not scrupulously clean, or if we place in that cream a dirty dipper or more cream that has not been pasteurized, the effect is the same as though we would very carefully weed a garden and then sow the seeds of these same weeds. In a little while we would again have a weedy garden. One-half the failures in pasteurization arise from the fact that the operator does not know that after finishing his work he can entirely undo all of it by introducing into the cream anything that has not been sterilized or heated to a high degree to destroy the germ life that it may hold.

One of the gains to be made by pasteurizing is in the better keeping quality of our butter. If the work is thoroughly done we destroy the undesirable germ and introduce those which produce good flavors by adding starters. This also effects the uniformity of the butter from day to day. We can control our starters, and by this means control the quality of our product. This is what makes the Danish butter so much to be desired; the uniform good quality is largely produced by pasteurization.

To conclude, the Kansas creamery interests can be helped by pasteurization, in the following way: A more uniform product can be secured. The milk or cream can be held sweet for a longer time so that it will arrive at the factories in much better condition. The heat of summer and the cold of winter will be felt by the cream to a less extent. The butter-maker can take his cream and add starter and have control of his product. The keeping qualities of the butter will be improved by destroying the germs that cause the butter to deteriorate.

The following precautions must, however be observed or the attempt will be a failure: Good milk must be used. The



WHICH?

LIGHT DRAFT or HEAVY DRAFT?

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operator must know something of bacteriology and thoroughly understand his work. The butter-maker must be a master of handling starters and ripening cream. The greatest difficulties being met with

nating breed. The demand for good butter and cheese rapidly increased, and the local dairymen had not the proper cows with which to supply the demand.

Allured by wealth, the dairyman drafts into his herd any cow regardless of her qualities. He starts with bright prospects before him, but ere long finds the profits decidedly small or wanting. He quits, declaring dairying an unprofitable business, not remembering that he got out just such as he put into his business. If you sow inferior seeds, you will get poor grain in the harvest. Just so in the dairy business.

The question arises, "What can be done? Evolve the dairy cow. But how? That question is rather a difficult one. For instance, when you want to develop some particular quality in corn, wheat, or any crop, do you select your seed regardless of these qualities? No! You go into the field and select such stalks as are hardy, free from disease and yet possess the desired quality, and consequently you get in return grain which comes nearly if not quite up to your ideal. That is what must be done along dairy lines to produce ideal herds. You may ask which is best, to breed or buy these herds. By all means breed them. This requires time, but when once established you have a sound basis for future aspirations.

It is evident that the grade has not the power to transmit to his offspring his own good qualities as does the pure blood which has for generations been bred for some particular quality; however, I should not advise the selling of grades any buying of pure bloods; first, on account of cost; second, there are not enough pure bloods in the United States to supply but a very small percentage of the needed products. In every dairy herd there are a few choice dairy-cows; by the proper selection and breeding of these cows and their offspring, we may build ideal herds.

The choice of the cow is not enough; the selection of a sire is doubly important, as he will transmit to his get the qualities of his ancestry. A knowledge of his dam and sire will not suffice; you should know his pedigree for several generations back. Nothing but pure-blood bulls should be used; and fellow dairymen, let us legislate against the use of anything else. Even then we should have a standard.

The illiterate dairyman will say, "I can not afford to keep a high-priced animal for such a few cows." Such a man sees but one side of the question, and that is to have fresh cows. In my own neighborhood I know of many private dairymen who are using bulls at the head of their herds that I would scarcely buy at any price. The result from such breeding is a lot of calves inferior both for dairy and beef purposes.

It may seem difficult to some here to determine which are choice cows; however, with modern appliances such as the Babcock test and the record sheet it is a very simple matter to find out which are and which are not your profitable cows. Many experienced dairymen have thought they could rank their cows in the order of profitability but upon testing found that they were badly mistaken.

What is a choice dairy cow? In short it is the cow that has the capacity of producing the best and greatest amount of butter-fat from the cheapest and least amount of feed, also possessing the power of transmitting her own good qualities to her offspring. As evidence of room for great improvement even in the profitable herds of Kansas, I will give the highest and the lowest record for one year of the twenty-five herds reported. One dairyman had twelve cows which averaged 309.23 pounds butter-fat per cow, total income \$37.17. Another dairyman had twelve cows which yielded 167 pounds butter-fat per cow, total income \$37.14. This shows a difference of 132.23 pounds butter-fat per cow, or \$44.03 total income.

This shows that some of our now prosperous dairymen are not realizing as much as they might from their cows. The average yield of eighty-two Kan-

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sas herds for one year was 104 pounds butter-fat per cow, while in the Eastern States we find whole herds which yield 350 pounds per cow, and many individual yields of 400 to 500 pounds butter-fat. As evidence that we can bring the standard of our dairy-cows nearly if not quite up to that of her Eastern sister, I will give you the individual records of a few grade cows of Kansas. A Holstein, owned by T. A. Borman, has an annual yield of 408 pounds butter-fat. A Jersey, owned by C. C. Lewis, has a yield of 394 pounds butter-fat. Zacona, a scrub cow, owned by Kansas State Agricultural College, produced 383 pounds butter-fat. The records of these few cows plainly show what might be done by the proper selection and breeding of the Kansas grade cow.

The Diet of a Kansas Dairy Cow.

C. G. ELLING.

As the profit of a dairy herd depends very largely upon the milk flow and the milk flow upon the feed, we see that feed plays an important part in making dairying a success. Another important factor, however, is that we should use as much as possible of the feed that is grown on the farm, because when we buy feed we pay for transportation, handling, and a margin of profit to him from whom we buy. The question then arises, "Does Kansas furnish the desired feed and a variety?"

In nearly all parts of the State, feeds which are rich in protein can be grown, and that is the element that we want. It is the basis of the value of all feed and especially desirable for the dairy cow, as carbonaceous food would tend to make her fat. Take, for example, alfalfa, the great drouth-resisting crop, which contains 10.6 per cent protein, 37.3 per cent carbohydrates, and 1.4 per cent fat. Compare it with timothy hay, which contains 2.9 per cent protein, 43.7 per cent carbohydrates, and 1.4 per cent of fat. We find that they contain nearly the same amount of carbonaceous food, but alfalfa contains over three times as much protein. So much for the theoretical side of alfalfa as a feed for a dairy cow. I think the testimony of J. W. Cunningham, of Jefferson County, which is that he would not think of going into the dairy business without alfalfa, together with various experiments of the Agricultural College, will support the practical side. Cow-peas and soy-beans have been successfully grown in various localities, and are also very rich in protein, while at the same time, these highly nitrogenous crops leave the ground in good condition.

So it is evident that Kansas furnishes a large variety of crops which are good for the dairy cow and the land. Why, then, buy concentrated feeds and thereby lessen our net income and miss an opportunity to improve the farm? The Iowa Agricultural College has made experiments which show that not only is it cheaper to raise these concentrates, but also that they have a better feeding value, pound for pound.

During the summer of 1899, the Kansas State Agricultural College soiled 10 head of cows on 2.97 acres of green alfalfa. They also consumed a little grain. After deducting the value of this there remained \$25.28 per acre as profit. Although red-clover hay does not contain as much protein as alfalfa nor does it make as large a yield, yet it is one of the best of hay feeds and can be very successfully grown in eastern Kansas, where alfalfa is not so abundant. Clover, soy-beans, and corn make an excellent ration. If timothy is grown in with clover, grain rich in protein should be increased.

Ensilage is an ideal food for a dairy cow. Why is it? Because it makes the feed more palatable by providing succulence having the same effect as June grass upon which the cows thrive best. It saves feed, as only a small amount of it is lost by fermentation. Clover does not pack so well as the heavy, juicy corn, therefore it is more liable to spoil, as it will contain too much air when not well packed. Indian corn is above all other plants the main silage crop in our country.

Mangels, like ensilage, furnish succulence and increase appetite. The yield is about twenty-five tons per acre. Roughly speaking, about twenty pounds of mangels will take the place of two pounds of grain. How to feed this is very important and probably is not done perfectly in any part of the world, yet some information has been brought out by means of experiments and proven to be good.

When the dairy cow is a calf she should receive attention in order to make her a good milk-producing cow. She should not be fed very much grain, as this would have a tendency to decrease the ability of handling a large amount of roughness. Give her plenty of roughness and only enough grain to keep her in good growing condition, thus developing a good, strong constitution. When she begins to patronize the creamery the grain ration should be increased and regularly should be regarded both in time of feeding and the amount fed. It is very important that each meal be weighed out, and will pay, not only in dollars and cents, but also in satisfaction.

Here we have two rations, one of all home products, and most of the other is bought at the average price of Manhattan. The first is: Ensilage, 40 pounds; alfalfa, 15 pounds; Kafir-corn, 3 pounds; soy-beans, 5 pounds; cost per cow per day, 6 cents.

The second is: Sorghum, 15 pounds; prairie hay, 10 pounds; bran, 3 pounds; oil-meal, 3 pounds; cottonseed-meal, 3 pounds; cost per cow per day, 12.4 cents. The latter costs more than twice as much as the former. So far, feeds have been

taken as the average over the State; but should we be satisfied with that, when Professor Hopkins, of the Illinois Experiment Station has revealed the fact that some corn, the great Kansas crop, contains 7.76 per cent of protein, while other samples contain 14.92 per cent? This difference he cited by the selection of seed. He not only took the large smooth ears and was governed by the outward appearance, but took several grains from each ear and made a cross and longitudinal section to determine the amount of white starchy substance. If this extended down nearly to the tip, he threw it away, and took only those ears in which the kernel was well filled up to the crown.

The whole subject of seed-breeding is becoming a vastly important and interesting one, and means great help to the dairymen of Kansas. Although the State has been very liberal in its appropriations to the Kansas State Agricultural College, yet it seems as though we are a little deficient in the art of seed-breeding, which has a bright and unopened field left to be explored some time in the near future.

The Ups and Downs of the Babcock Test.

DEXTER HOLLOWAY.

Twenty-five years ago, when the cream was all churned on the farm and the butter either consumed at home or traded for groceries at the country store, the parties interested did not know nor did they care how much milk was required to make a pound of butter; but as the farmer became more progressive and as soon as creameries were established, it became necessary to measure the butter-making capacity of milk. The first test to fill all reasonable requirements was invented by Dr. Babcock in 1890. There were a number of methods preceding this, but Dr. Babcock was the first to combine utility with simplicity and accuracy.

The majority of you no doubt are already familiar with the manner of operating the Babcock test, but for those who are not I will give a brief description of the test. The first step is to be sure that the milk is sweet and the temperature 60° to 70°. Then it should be thoroughly mixed by pouring from one vessel to another, as this is the only satisfactory method of mixing it. After it is well mixed, 17.6 cubic centimeters are measured out with the pipette into the test-bottle, and 17.5 cubic centimeters of sulphuric acid are added. The acid and milk are mixed by giving the bottle a rotary motion. The bottle is then whirled in a centrifugal machine for five minutes, at a temperature of 212°; then enough hot water is added to fill the bottle to the neck, and it is again whirled for two minutes, and hot water is again added; the bottle is whirled the third time for one minute, and the amount of fat is read by means of the scale on the neck of the bottle. This gives the percentage of butter-fat in the milk.

This method applies to whole milk; but cream, skim-milk, buttermilk, cheese, and condensed milk can also be tested, the same general principles being applied to all of these though the details differ in some respects.

The Babcock test has been the cause of a great deal of dispute and, perhaps some trouble, especially between creamerymen and farmers, who imagine that there is something vague and unexplainable about the Babcock test; but the farmer boys who come to the Kansas State Agricultural College, are able to understand the test with a few hours' work.

Let us take for instance the conversation of Mr. A. and Mr. B., who meet at the end of the month. As they discuss the weather, the crop prospects, and other items of interest, mention is made of the milk-check of the past month. Mr. A. remarks that his cows gave more milk last month, but for some unaccountable reason his test only averaged 3½ per cent and his check is \$3.15 per cow. Mr. B. gives him a friendly rap for keeping low-testing cows and points with pride to his 5 per cent test; but he makes no mention of the fact that his check is only \$2.30 per cow. Let us listen further and find out some of the reasons for these changes. Mr. A. gives as a reason for his increased milk yield, that five of his best cows were fresh the month before and now he says, "I know that the milk of a fresh cow should make more butter than that of a cow which has been giving milk for a time," and thus he unfairly decides that he has been cheated by the tester. Mr. B. says that he has no fresh cows, but he thinks his herd of fine Jerseys should test higher than 5 per cent. They separate, declaring that the Babcock test is a fraud.

Let us see what grounds they have for condemning the Babcock test. It has been proven many times by actual experiments, that the milk of a fresh cow will sometimes test as much as 1 per cent or 2 per cent less than when the cow is advanced in the period of lactation; thus we see that Mr. A.'s assertions are false.

In the case of Mr. B., if he would carefully test his individual cows with the Babcock test, he would perhaps find that there were a few low-testing cows in his herd, which are holding his average test down. It would pay every farmer in Kansas, who is maintaining a herd of cattle where the milk production is one factor, to buy a tester and eliminate from his herd those cows, if there be any, which are "eating their heads off." But he should not conclude that simply because a cow has a high test that she is the most profitable.

Let me give an example from the rec-

ords of the herd at the Kansas Agricultural College. Cow No. 20, for one year, yielded 9,116 pounds of milk which tested, on the average, 4.2 per cent. During the same year cow No. 11 yielded 8,475 pounds of milk, which tested on the average 5.1 per cent. Now let us look at the returns which these cows gave. Cow No. 20, with a high yield and low test, produced \$40.37 above cost of feed, while cow No. 11, with a low yield and high test, produced only \$7.60 above cost of feed. These figures may appear exaggerated to some, but they are taken from the college record.

The Babcock test, properly used and applied is one of value to any one who has a herd of cows. There are several things besides these I have mentioned that will cause variation in the test, therefore in order that we may secure a fair record for a cow we must not be content with two or three tests, but the best way is to keep a careful record for a month. When the average Kansas dairymen puts as much planning, thought, and brain work into his work, as the average business man is required to do, the possibilities of Kansas as a dairy State will be wonderfully increased.

Where Does Kansas Come In?

W. H. OLIN.

An older brother tells me that when he was a boy his text in geography placed Kansas territory in the Great American Desert. Stephen A. Douglas' Squatter Sovereignty Bill opened this tract to settlement, and that Great American Desert immediately changed its habitat, and our State was born. Kansas and that intrepid warrior for freedom whom history has christened Osawatimile Brown, precipitated the civil war. So, early in her career, the eyes of the Nation were turned to Kansas, because liberty, intelligence, and progress were made the cardinal of the Wyandotte Constitution, our State has won for herself a worthy place in history. A little more than a generation ago, Kansas reached the galaxy of States "through great difficulties." To-day she is ranking the best of them with schools, her teachers, and scientists having won for us an enviable reputation for thoroughness and progressive investigation. She has even surprised herself in her mineral resources; her earnestness and patriotism, the Twentieth Kansas has published to the world.

How wonderfully Kansas "comes in" on the count agriculturally, as follows:

The five leading wheat States in the order of importance are: Kansas, Minnesota, Dakota, California, Washington.

The five leading corn States: Illinois, Iowa, Nebraska, Missouri, Kansas.

The five cattle-producing States: Iowa, Texas, Kansas, Illinois, New York.

The five hog-producing States: Iowa, Kansas, Ohio, Illinois, Texas.

Our railroad facilities, in comparison with other States, is shown in the following list of the five States having the greatest railroad mileage, in thousand miles:

Illinois, 10.8; Pennsylvania, 10; Kansas, 8.75; Iowa, 8.5; New York, 8.5.

A few months ago I was led to present some facts to pupils in one of our public schools, showing our State's agricultural resources. As this compilation is based on Secretary Coburn's published reports, it is authoritative, and I will give a short extract: "During the last three years, the Kansas hen has given her owner more money than the whole Louisiana Purchase, which cost this Nation of ours \$15,000,000. We have twelve million bearing fruit-trees, over 13,000 acres of luscious grapes and berries, and within the last two years our bees have given us one and one-half million pounds of honey. The whole Nation is astonished at our 1900 record of over 77,000,000 bushels of wheat (only surpassed by our 1900 record of 90,000,000), 135,000,000 bushels of corn, 30,000,000 bushels of oats, 7,500,000 bushels of potatoes, 50,000 pounds of cotton, 1,500,000 bushels of flax, 18,500,000 pounds of broom corn, 5,000,000 tons of hay and fodder crops, and \$75,000,000 worth of dressed meats."

WHAT ABOUT DAIRYING?

But why did I not mention the dairy? Because, my friends, with all our natural advantages and unexcelled facilities for dairy farming, we do not "come in." The great dairy States of our Nation do not number Kansas in the list; we have no rank worthy of mention in this line; we only receive "honorable mention" when butter States are named.

What was it that enabled the Prussians to conquer all France in a little more than six months, and put Austria outside the German Union in six weeks? It was an educated soldiery. Every able bodied youth was required to receive three years' military instruction. This made the Prussians intelligent soldiers and enabled Von Moltke, King William, and Bismarck to win such victories as Sedan and Sadowia. It is only intellectual power, under proper administrative control, that has ever won any important victory or achieved any worthy result in all fields of competitive action.

That earnest student of practical and vital economics of farm importance, Professor Henry of Wisconsin, has recently made a study of the dairy industry of Europe. At Topeka, a few weeks ago, he told how Denmark became the dairy center of Europe. For centuries Holland had controlled the London butter-market. Denmark, finding her burden of governmental expense too great, began to look about to see how she could improve the condition of her people. With soil too poor to raise respectable brush, extensive crop-farming was out of the question. Seeing Holland butter everywhere in the London

REAL ENJOYMENT.

The woman who reads this will understand to the full what Mrs. Tipton meant when she says: "I am enjoying good health." It takes a person who has been made wretched by sickness to understand the joy of health.

There are very many women who suffer as did Mrs. Tipton, who might be cured as she was by the use of Dr. Pierce's Favorite Prescription. It establishes regularity, dries the drains which weaken women, heals inflammation and ulceration, and cures female weakness. It makes weak women strong, sick women well.

"It is with pleasure I recommend Dr. Pierce's medicine," writes Mrs. Nora Tipton, of Cropper (Cropper Station), Shelby Co., Kentucky. "You remember my case was one of female weakness and weak lungs. I had no appetite and would often spit blood; was confined to my bed almost half of the time and could hardly stand on my feet at times for the pains through my whole body and system. My husband had to pay large doctor bills for me, but since I have taken four bottles of Dr. Pierce's Golden Medical Discovery, four of 'Favorite Prescription' and three vials of 'Pleasant Pellets' we haven't paid any more doctor bills. It had been seven months since I stopped using Dr. Pierce's medicines and I have been enjoying good health all the time. I can never praise these medicines too highly, for I have received so much benefit. I pray that many who suffer as I did will take Dr. Pierce's medicines. I am sure they will never fail to cure when given a fair trial. Everybody tells me I look better than they ever saw me. I am sure I feel better than I ever did before."

"Favorite Prescription" has the testimony of thousands of women to its complete cure of womanly diseases. Do not accept an unknown and unproved substitute in its place.

Dr. Pierce's Pleasant Pellets are a ladies' laxative. No other medicine equals them for gentleness and thoroughness.

market, Denmark sent experts to study English butter tastes. These experts came home and established a State Dairy School for Denmark, and its graduates went all over Denmark, teaching her people how to make butter for the English market.

The result was that these Danish butter-makers, who were making the very worst butter on the London market, under the influence of their dairy guild and dairy school, soon made the very butter that best suited English tastes, and actually captured the London market. Since that time little Denmark has ranked as the dairy nation of Europe.

Denmark, in 1901, exported \$25,000,000 worth of butter. Kansas is more than five and one-half times as large as Denmark and is situated in the exact center of the Nation which forms the foundation of the world's pyramid of dairy products; with excellent transportation facilities, north, east, south, and west; and a metropolitan market within forty hours of any dairy in the State.

What is the amount of Kansas dairy export? Actually, exact figures are not obtainable either at the United States Bureau of Statistics or Secretary Coburn's office. We know, however, that it does not begin to compare with Denmark, and from the best approximation that I could make, I find, while Kansas makes and ships one pound of butter, Denmark sends out two; or, to look at it another way, the per capita production for Kansas is twenty-eight pounds, and for Denmark fifty-four pounds per year.

KANSAS DAIRY SCHOOL.

Through the good offices of energetic members of this association and the "powers that be," Kansas, at last, has a dairy school. I wish every member of this association would visit the college barn, look over a door to a small room and read these words, "College Dairy." There, gentlemen, was where your State Dairy School was born. When a committee of our State Legislature visited that room and found the number crowded in each other's way but good naturedly and earnestly seeking instruction, they went back to Topeka and told our State Legislature, "It must, and it shall be." With your kindly support, the committee prevailed upon the Legislature to provide our present efficient quarters, that persons high in authority said would be amply sufficient for twenty-five years to come. On February 4, the State Editorial Association visited our rooms and while they admired our quarters, were interested in our work, and pleased with the equipment, each one was heard to remark, "How crowded they are." Yes, gentlemen, three instructors are at present required with two assistants in dairy practice in your dairy school.

A few days ago an eastern gentleman interested in factory separators, who has visited all the State Dairy Schools of our Nation, told me he was surprised to see here in Kansas a dairy school equal in work and equipment to the best. "In fact," he said, "if I were blindfolded and transported to your dairy rooms, I could



not tell whether I was in the Wisconsin or the Kansas Dairy School."

Your young men are here getting that instruction that will enable them to aid in placing Kansas in our Nation's dairy column. As our State is fast settling up, farming is becoming intensive rather than extensive, pastures are becoming smaller; and ten acres are now required to yield in feed what three to four times that acreage yielded in former years. This calls for experiments in our dairy feeds; but they can not be tried on account of lack of equipment with no funds to draw upon. Many of us desire to study ensilage as a dairy feed but the college has no silo; we want to note the effect on milk, both as to quantity and quality, of certain feeds; and the characteristics in milk strain of certain breeds.

CROWDED QUARTERS.

To provide shelter for the dairy herd I notice corn-cribs and chicken-coops are utilized, and the new stock now coming in has to have temporary quarters under a hayrack. The dairy barn now on the campus, I am told will accommodate about eighty head of stock. At the present time the dairy department is trying to house forty-two cows and forty-three head of young stock. Of course the dairy-barn, which is now the chemical laboratory of the college, will be available for dairy use as soon as the new chemical building is completed. As soon as available, this barn will be full to overflowing with the present stock, leaving no place to store feed; and the plan of illustrating best methods of feeding dairy cows and caring for the calves will not only be seriously hampered but rendered well nigh impracticable, since neither calves nor feed can be gotten into our present barn quarters. Then, too, there is pasture for less than half the college herd, and the dairy department is forced to buy practically all the feed used. At the same time we are instructed to raise all the feed for our stock practicable. It seems to me this college should be able to follow its own teachings in this regard, but at present there are only fifty acres of plow-land available for the use of both farm and dairy departments. The college needs new crop and pasture-land to carry out its object-lessons that practical dairying demand.

Let us look at the personnel of your dairy students. The ten days' course numbers 10; the twelve weeks' or students' short course, 67; the second year farmers' course, 26; and the regular course students, 34; this gives in all, 137. Out of this number we find that nearly 80 per cent of the short-course students are earning their own way, and at least 50 per cent of the others are doing the same. These students are earnest workers, here to prepare for future usefulness to themselves and the State in their chosen field of work. Many of these students now seek additional instruction in dairying, desire more than the course now gives them, but can not have it because of lack of room and teaching capacity, and the college lacks the money to provide either. We assure you dairymen of Kansas that we are intensely interested in our work, and pledge ourselves to do all we can in helping you to advance the dairy interests of our commonwealth. We believe that Kansas, with her fifty million acres of rich and fertile soil, can furnish feed for many times the 800,000 milch cows she now supports.

We are ardent believers in the doctrine of driving the grain to market, but we also believe it to be a wasteful practice to permit the calves to overturn the milk-pail while enroute. We are determined to go out, and as far as we can, help you to make such good butter that a poorer quality as well as oleo and process butter can find no sale where Kansas dairy butter is on the market.

MERIT WINS.

Merit always wins. We want to do what the Kansas brick-maker said he did with his bricks. He was in competition with brick-makers from other States for furnishing the brick for a large and costly railroad depot. Each man appeared before the committee with a good brick and an eloquent plea. At last it came Kansas' turn. A plainly dressed but sturdy man arose and said, "Gentlemen, I am not a talker; I am a Kansas farmer and come from a locality where we do things, not speak them. I want my bricks to speak for themselves; I therefore propose that we pass to the pressure test at once."

The brick to be contracted for was required to be vitrified and able to withstand a fifty-ton pressure. All the bricks, save one, showed no break at fifty tons. A St. Louis representative, who had been especially interested in showing up the idiosyncrasies of Kansans as well as advancing reasons why a good quality of vitrified brick could not be obtained in Kansas, was especially loud and eloquent in the praises of his brick, as they showed no signs of crumbling until sixty tons pressure was applied. He tweaked the Kansan's nose, and, with thumbs in the arm holes of his vest, strutted back and forth and felt he had won the contract. When the Kansas brick was to be tested, this sturdy manufacturer calmly applied the sixty-ton pressure to begin with, and then 65, 70, 75, and 80 tons. The St. Louis orator was dumfounded, and as the committee told the Kansan he had the contract, the Missouri friend said, "Say, what in the name of wonder do you mix with your bricks?" "Brains, sir," calmly remarked the man from Kansas.

Let us follow Denmark's example, and under the influence of this dairy association make more butter while, like the Kansan, we "mix brains" into every pound whether it comes from the creamery or from the

farm. Let this good work be so thoroughly established that in all our State a poor pound of butter shall not be found. Then markets will seek it, and save it the labor of seeking the market.

May the dairymen of Kansas help us to show our Legislature what the State needs in the dairy school, and not cease in their efforts to gain for Kansas the best that is to be had. Let us join hands in this work for dairy improvement, and with Kansas "grit, grace, and gumption" so ably assist the department of dairy husbandry of this State institution that Kansas shall "come in" to the dairy column, and the census of 1910 shall say to our beloved commonwealth, "Go way up front and sit down."

What Shall We Do With Our Skim-milk?

J. B. GRIFFING.

Skim-milk is milk with the butter-fat removed. It is one of the most important by-products of the dairy. It has a high nutritive ratio and a comparatively large percentage of protein, which makes it very valuable as a flesh- and blood-forming feed for young animals.

Skim-milk from the creamery or skimming-station is usually pasteurized, which gives it a cooked taste and odor, and thus lowers its value both for household and feeding purposes. The pasteurizing prevents temporary souring. In this process the bacteria which forms the lactic acid and thus sours the milk are killed, but their spores or eggs survive the heat, germinating when the milk cools and soon filling the milk with bacteria. The best way to prevent this is to cool the milk rapidly with a milk-cooler and then keep it below 60 degrees by placing it in a barrel of cold water. Hand-separator skim-milk can be fed sweet and warm, and is a first-class article for kitchen use. Gravity skim-milk is slightly more nutritious than the other kinds, but often has the disadvantage of being sour.

The usual way of utilizing skim-milk on the farm is to feed it to pigs and calves, but one farmer not far from here has met with remarkable success in raising colts on it. He begins at weaning time feeding about ten quarts of skim-milk per day with a mixture of corn-meal, fine wheat-chop, and oats for grain, and a little prairie hay for roughage. He loves horses, paying much attention to the rearing of good animals, and he considers this a very profitable way to utilize skim-milk. Hog-raisers have had universal success in feeding skim-milk, especially to growing pigs. But when it comes to raising the calf, Kansas is far behind the old dairy States, for the reason that the feeder does not do all that is possible to imitate nature. For the first six months the youngster's needs should be supplied with the best substitute for its mother's milk.

The question is, "What shall we do with our skim-milk?" If it can be shown that just as good calves can be raised at much less cost by feeding it to them in an intelligent manner, the question has been partially answered, and in that way, we will make the best possible use of this dairy product.

The conclusions reached by the Kansas Experiment Station are valuable. Ten calves raised on whole milk averaged 382 pounds in weight at six months, with a cost, including labor, of \$18.50 per head. Ten calves running with the cows, weighed about 380 pounds, with a cost of \$12, the expense of keeping a cow for a year. Ten head of skim-milk calves averaged 343 pounds, with a cost of \$8.00. This experiment shows that the skim-milk calves did not weigh quite as much, but the cost of raising them was \$10.50 a head less than in the first case, and \$4 less than with the calves that ran with the cows. When these calves were fattened in the feed-lot for baby-beef, the skim-milk calves made the largest gains and consumed the smallest amount of feed during the fattening period. When they were sold they brought from \$40 to \$45 a head in the Kansas City market. The reason why the skim-milk calves came out ahead in the end is because they had already been taught to eat grain and roughness, and when the calves raised with the cows lost flesh at weaning time, the skim-milk calves were making rapid gains. There is a notable difference in the dispositions of the calves which have been handled and those which have been allowed to run with their mothers. Those raised for the dairy get used to being handled and are much more gentle.

The methods of two leading farmers on College Hill may be shown to advantage. One of them sends his cows and young calves out to pasture in the spring, and in the fall weans the calves and milks the cows, sending the milk to the creamery. From his ten cows he sells \$80 worth of butter-fat to the creamery; his yearling calves bring him \$20 per head, making a total of \$280 or

\$28 receipts per cow for the year. The other farmer has a herd of ten cows and has a separator, feeding the skim-milk to the calves. He received last year \$480 for butter, and sold the calves at the age of six months for \$145, making a total of \$625, or \$345 more than farmer No. 1. If farmer No. 2 had kept his calves until they were yearlings, the difference would have been still greater. The profit is not only in the inexpensive method of raising the calf, but in the additional gain from the butter-fat.

The best way to wean a calf is to take it away from its mother within the first twenty-four hours, and teach it to drink as soon as possible. The colostrum milk of its mother should always be fed. Sweet whole milk must be fed for at least two weeks before changing to skim-milk. The amount is variable with the size and digestive ability of the calf, but is usually about ten pounds or five quarts per day. It should always be measured or weighed and fed three times a day, two quarts in the morning, one quart at noon, and two quarts at night. It should be warmed to about blood heat.

The calf's stomach is very delicate, and the change to skim-milk should be made very slowly. The first time one pint may be given, mixed with the whole milk, the next feed one and one-half pints, the next two pints, and so on decreasing the milk accordingly.

About the time the calf is being changed to skim-milk, it will eat a little grain. It can be induced to do so by throwing a little in its mouth at feeding time. Kaffir-corn-meal or corn-meal are the best grain feeds that can be fed. Shelled corn is very good, being better than corn-chop, but, according to the experience of one of the farmers in this neighborhood, is not quite so good as corn-meal. The calf should have one-half pound per day at first, increasing gradually. The grain should always be fed dry, for when it is mixed with the milk it often does more harm than good.

A common practice among farmers who wish to raise extra good calves on skim-milk, is to feed flaxseed-meal, Blachford's calf-meal, or to put oil-meal jelly in the milk to take the place of the fat. But in an experiment at the Kansas State Experiment Station, calves fed on those feeds made little better gains than those fed Kaffir-corn-meal. In an experiment at the Iowa Experiment Station, calves fed on corn-meal made little better gains than those fed flaxseed-meal or oil-meal. These experiments show that Kaffir-corn-meal and corn-meal are the best substitutes for the fat taken out of the milk and are much less expensive than the others.

Calves should be fed a handful of hay when they begin to eat grain, and the amount should be increased until the calf is about six months old, when it will be on dry feed. Prairie hay is the best for a young calf. Alfalfa can be fed cautiously after the first month, but is injurious to very young calves. In feeding the calves they should always be locked in stanchions if possible. This is the quickest way to feed them; and if grain is fed immediately after the milk, it dries their mouths so they will not suck each others ears.

The stanchion is easily and cheaply made with two two-by-four studding for the top, fence boards along the bottom, and fencing for uprights. It should be about forty-two inches in height and twenty-eight inches from center to center of the spaces for the necks, and four and one-half inches for the neck. There should be a trough twelve inches wide and four inches deep attached to the lower part with the lower board for one of the sides. When a large number of calves are to be fed, a good method is to take the can of milk in a hand-cart or wagon along with a spring balance and four or five pails. The spring balance can be hung from some convenient projection and the proper amount can be weighed for each calf.

Another method of feeding the milk, which is almost as rapid and convenient, is to measure it out with a quart measure marked to half pints. Pails having their seams filled with solder are preferable, as those with deep seams harbor all sorts of germs which are hard to remove. What shall we do with our skim-milk? Feed it intelligently to our chickens, pigs, colts, and calves, and thus help to make dairying in Kansas a great success.

The Possibilities of a Private Dairy.

GEO. W. LOOMIS.

If a man goes into the private-dairy business with the intention of making a success of it, he should first see that his farm has the improvements necessary to carry on the business. If he has no suitable stables he should build the necessary shelter; the stables should be warm and dry in winter, and should be well ventilated. He should have wells of pure water

and ample barns for storing hay, grain, etc. Many dairymen find that the silo will materially add to the profits of their business, for the succulent food during the winter greatly increases the flow of milk.

In the private dairy the value of the hand separator can hardly be overestimated. Under the old system of setting about 20 per cent of the butter-fat was lost, but under the new system of separating only about one-tenth of one per cent of butter-fat is left in the skim-milk. Thus we see there is a great difference between the two ways of getting the cream, and it has been proven that calves thrive well on the separator skim-milk. Instances are known where calves have been fed skim-milk and no grain, and have made remarkable gains. The success of a man in the dairy business depends largely on the dairy herd. When we stop and consider that the average Kansas cow produces less than ninety pounds of butter per year, we do not wonder that so many farmers fail to see where the profits of dairying are. This condition of affairs is doubtless caused by the lack of dairy knowledge on the part of the farmer. To prove this, I will use the Kansas Agricultural College scrub herd as an example.

This herd is composed of average cows, but under the care of experienced men, this herd averaged over 270 pounds of butter in one year; thus we see what good care and management will do for the average cow. In the average herd there are probably some cows that do not produce enough butter to pay for their feed, and these cows reduce the average yield of the herd very much. For example in the Agricultural College herd, if the 25 per cent of unprofitable cows were eliminated, the average yield of butter would increase from 270 to 302 pounds per year.

The best way to detect unprofitable cows is by the use of the Babcock test and scales; by taking into consideration the amount of milk given and the test of butter-fat, we are able to find those cows not profitable. These should be at once taken from the herd and fattened for the butcher. The herd should then be graded up with some standard dairy breed, such as the Jersey or Guernsey. A man who breeds for beef part of the time and for butter part of the time will never make a success of either.

It is very necessary that the private dairymen should have knowledge concerning the food and care of his herd. He should know the nutritive value of feeds, and in what proportion to feed them, and he should learn that driving his cows with dogs, or abusing them in any way, will decrease the flow of milk and thus lessen his profits. I think at least 75 per cent of the butter produced in Kansas is made on the farms, but the average price paid for it is much less than for creamery butter. It has been found from information gathered from Manhattan grocery firms that a very large percentage of the butter received from the farmers is of poor quality. The butter often has bad flavors, or no flavor at all. This is generally caused by the acidity of the cream when churned. The only way to get the right flavor is to use an acid test and churn the cream when the right acidity is reached. Sometimes, however, bad flavors are caused by not keeping the dairy utensils clean, or by keeping the milk and cream in cellars where vegetables are stored.

It was stated by a Manhattan grocery firm, that if the farmers would only read and study a little about dairying, at least 50 per cent of the butter now in grades three and four could be classed in grade one. I think this is the only solution to the problem; the farmer must learn how to make good butter before he can make the private dairy a success. If a man knows how to care for the milk, and make the butter, there is no reason why he can not make a better article than the creamery; for he has control of all the conditions from the feed to the finished product, while the creamery has to take what it can get. If a man goes into the dairy business at all, he should go into it with the intention of making a first-class article. He should have a private brand, and should sell only first-class butter under it. If he does this, his brand will soon become a guarantee as to the quality of the product, and he can always receive a good price for it.

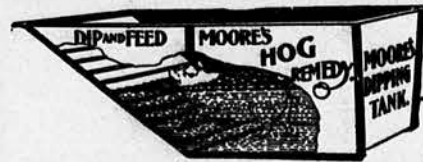
As proof that the private dairy can be made profitable, I will give a few examples of men who have succeeded in this line. A. O. Siegrist of Reno County made an average of \$73 a cow per year, and E. F. Fairchild of Leavenworth County averaged \$70.99 income per cow.

I could mention others who have averaged nearly as high. These examples show that there is vast room for improvement in the average dairy-herd.

I find from information gathered from

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butter-dealers that during the past few years the country butter has improved much in quality; and I think it will continue to improve just as fast as the farmers absorb knowledge relative to dairy matters. Taking into consideration the instruction in dairying given at the Kansas Agricultural College, and the large amount of dairy literature given into the hands of farmers, I think the time will come when the farmers of Kansas will say "the private dairy is more profitable than the creamery."

Dairying Illustrated.

EMMETTE W. SIMPSON.

Dairying during the nineteenth century has made greater progress, received more direct benefit from invention, the teachings of modern science, and the intelligent practice of skilled operators than any other branch of agriculture in the United States.

Take a look backward to when dairying was in its infancy. Imagine yourself watching an old woman or a merry dairymaid in the garb of the ancients laboriously milking a cow with one hand and in the other holding a cup, which does duty for a pail, taking only what milk is needed and leaving the strippings, which are rich in fats, to the calves. Later on, a genius accidentally discovered that shaking or slashing the cream would cause the fat globules to adhere to each other and form a mass of fat, and thus the dasher churn came into existence. At that time people knew little or nothing about the "ripeness" of cream and churned whenever butter was needed. Again, imagine the selfsame old woman churning with a dasher churn. How hard she works, moving the dasher up and down with the regularity of piston of an engine. The cream does not come, she pours hot water from a teakettle into the churn and then works more vigorously. How her back does ache!

But now it is different. Men with high ideals and aims have bred, cross-bred, fed, trained, and coaxed the cow until she reaches their ideas in form, quality of bone, flesh, shape of udder, and above all, they have made her give more milk than nature saw fit to endow her. Thus the cow became an artificial milk-giving machine and likewise a gold-mine in the hands of the skilled feeder. But feeding and handling alone are not responsible for the increase in the value of the products of the cow. They are only a factor. The centrifugal separator claims its share of credit, as it saves time and labor, and also not only separates the cream from the milk, but removes all disease germs and dust that is found in milk separated by the "gravity-shallow-pan process."

All cows are not valuable. Some eat their heads off while others have to support the unprofitable ones. An ugly cow sometimes pays for her keep, while on the other hand, a fine looking fat cow is showing her owner how to get rid of his unnecessary (?) surplus cash.

A dairy cow to be really profitable, all things considered, must produce dairy products to amount to a certain sum above the cost of feed, keep, and labor. A cow that does not average six or seven quarts of milk per day, for 300 days, or 4,000 to 4,500 pounds a year, is not considered profitable. This is a hurried old world, and Yankees have no time to wait. The hustling farmer or dairyman who lets a lively boy with a dog take his cows to and from pasture; fans them with his milk-stool, or pitchfork; or nudges them with a No. 10 boot, can never make his cows pay for their keep—neither will they help to raise the mortgage. It has been shown by experiments that kindness and grooming of cows gives a difference of 2.5 to 8.3 per cent in the yield of milk and fat. Shelter also increases the yield. Sheltered cows consume less food and make larger gains in weight than unsheltered ones. The steer prefers the open shed as he is gorged with food, and each day adds more heat-holding fat to the layer beneath the skin; thus it can withstand considerable cold. While the condition of the dairy cow is in strong opposition to this, her system being relaxed by the annual drain of maternity and the semi-daily heavy loss of nutrients drawn from her in the abundant milk flow. To be profitably managed and to yield wholesome milk a cow must be comfortably housed in a well-ventilated stable in the winter.

In such a stable, provided with abundant sunlight (for light is an effective destroyer of disease germs), she is in condition, so far as environment is concerned, to yield the highest returns for the feed given. A person who does not know the nutritive value of food-stuffs or everything about the elements in feed, should not keep cows under any circumstances, unless he has money to burn.

Many farmers complain of the dirt found in the bottom of their milk pails, crocks, and other milk-holding utensils. It often happens that the milker is the hired man, who, tired from the day's work in the field, commences the evening work as soon as he can. His coat is covered with dust, and this falls into the milk-pail. It certainly pays to make a small locker or dressing room in the stable and stock it with two pairs of white suits for milking. A complete suit will not cost more than one dollar. They make a person feel refreshed when, after a hard day's work, he dons them to do the evening milking.

Bloating after eating, indigestion, flatulence or water brash, may be quickly corrected through the use of Prickly Ash Bitters. It strengthens digestion, cleanses and regulates the bowels.

Dairying at Home and Abroad.

MAJOR HENRY ALVORD, CHIEF OF THE DAIRY DIVISION, UNITED STATES DEPARTMENT OF AGRICULTURE.

To those engaged in dairy-farming in the United States, or interested in this industry, and who have given no particular attention to dairying in other lands, it may be interesting, in some degree instructive, and perhaps encouraging, to compare the means, methods, and practices of the dairy in Europe, with those of our own country. For this purpose it may be assumed that the conditions under which dairying is conducted in America are well understood by the reader. The several breeds of cattle best adapted to the dairy, their history and characteristics, the average dairy cow and the most approved methods of housing, feeding, and caring for her, that most important and delicate operation of milking, the care of milk upon the farm, with modern appliances, the making of choice butter and the shipping of market-milk, all these matters are familiar in their detail and have been made the subject of popular publications. Issues in the Farmers' Bulletin series and other bulletins of the United States Department of Agriculture, cover this ground thoroughly. The practice and general problem of the milk-supply and milk service of large towns and cities, is less familiar and better known to a different class of men; but interesting and important as the subject is, it is not proposed for special presentation here. Cheese-making has become so nearly extinct here as a farm or domestic industry and so generally transferred to the factory, that this branch of dairying is a comparative novelty to most American dairymen of the present day. This will, therefore, be referred to in very general terms.

DAIRYING IN EUROPE.

Upon the other hand, it may be assumed that the scenes and circumstances of dairying in the Old World are familiar to comparatively few, and that the opinions of one who has recently studied them in person will be accepted kindly and at their face value.

Dairy-cattle constitute the foundation and all-important factor of the industry. And we have no dairy-cattle of our own in America; we have adopted those originated in and brought from other countries, even our "native" or "common" stock, or "scrubs," are but mongrels of the breeds of another continent. It is impossible to estimate the debt of the dairy-farmers of this country to the breeders of Ayrshires and Guernseys and Holstein-Friesians and Jerseys, in their native lands. These are the four races of cattle upon which mainly rest the present and future prosperity and progress of dairying in America. Yet we must not forget to note that the blood of the good old milking strains of Shorthorns is an excellent foundation upon which to build up profitable dairy herds. It is needless to enlarge upon the good qualities and characteristics of these special dairy breeds. But it is worth noting that all of them have improved upon our hands. It may not be that the average quality of any of these breeds as they now exist in the United States is above the average of the same race upon its native pastures; but in all of them, there are now on this continent animals superior to the best on the other side of the Atlantic. The breeding and management has been so good here that the cows imported, and their descendants, have made indisputable records as dairy performers, exceeding any known in the countries from which they came. Personal observation has convinced me that we now have dairy-cattle in the United States so good that nothing can be gained, beyond the fancy or satisfaction in new blood, by further importations from Ayrshire, or any part of Great Britain, the Channel Islands, or The Netherlands.

We may very properly inquire, however, whether there are cattle in other countries which would improve our dairy herds or be a valuable acquisition to the variety we now possess. Although others may hold different views, it is my belief that the only countries to which any attention can profitably be given in this connection, are Denmark, France, and Switzerland. The first named furnishes the best example in the world of dairying as a national specialty, of rapid development; and present high average production and excellence. Here we find the Red Danish cattle to be the standard stock, and very satisfactory business cows they are, of a pronounced dairy type. But they lack uniformity, except in color, particularly in udder development, and other dairy points; and in the showing the very best of them could not hope to compete with the best of any one of our four leading dairy breeds of this country. As dairy performers they are good, but not remarkable; the best yearly records I have seen show an average production of 8,000 to 8,800 pounds of milk per cow, in herds of eleven to nineteen animals of all ages, with an average fat content of about 3 1/2 per cent, equivalent to 290 to 325 pounds of butter per year. A very celebrated herd of seventy cows, averaged 7,150 pounds of milk a year. In Jutland, there is a distinctively dairy race, of sharply defined black and white markings, reminding one of Holland cattle in appearance and still more of Brittanies, although between these two races in size. They are very attractive cows, of rather less than medium size, and are excellent milkers. Both these races of Danish cattle may be credited with being economical producers. Yet none of them are wanted here, for superlative excellence seems to be lacking on the one hand, while on the other they appear pre-disposed to tuberculosis, and very

generally tainted with this insidious and dread disease.

France is a dairying country and possesses a large number of so-called breeds of cattle. One can hardly say "different" or "distinct" breeds, because they seem to be largely of common origin locally differentiated and belonging to geographic districts along the borders of which they blend in a perplexing way. Nearly all of them are what would be called in this country, "dual-purpose" cattle. France prides herself upon producing all her own beef and depends largely upon oxen for farm labor. With few exceptions her cattle are bred primarily for labor, to ultimately become (poor) beef, and dairy quality is at least a secondary consideration and only incidental in some of the breeds. Fine veal is a specialty in France, so that cattle which produce large, thrifty, quick-growing and easy-fattening calves, are particularly sought and are highly profitable. There are but three races of French cattle which seem to deserve consideration as dairy stock.

Near the Belgian border, in French Flanders, there is a large, rather rangy cow of a pronounced dairy type, and a generous and profitable producer of a medium quality of milk. These "Flamandes" are of a solid dark brown color, sometimes reddish and often almost black. They carry no spare flesh, have shiny coats indicative of health, are good feeders, active and docile. In size they are above the average and in some respects suggest the milking Shorthorns. These cattle very justly won the sweepstake prize for dairy animals at the live-stock show of the Paris Exposition of 1900. But it is said that although rugged enough at home, they become delicate and always deteriorate rapidly when moved away from the comparatively small district in which they had their origin or development. This accounts for the "Flamandes" being so little known elsewhere.

In Brittany are found the pretty, active, little black-and-white cattle, of marked dairy characteristics, producing often an astonishing quantity of milk for their size and rich in butter-fat. This is a true breed, a good one of its kind and an old one; its blood undoubtedly entered largely into the foundation stock of the highly prized Jersey. Yet this is a race of still smaller size, some strains really diminutive. They are too small for anything but playthings in this country. In many respects, markings excepted, they remind one more of the French Canadian Dairy Cattle, which have lately come into prominence, than of anything else in America.

Normandy has long been noted for its dairying, and the breed of cattle carrying the provincial name has a great reputation in France. The choicest of this race is the "Cotentin" strain, to be found pretty near the coast from Cherbourg well down towards Brittany. In color they are red, brown, and white, spotted and patched; from two-thirds white to brindle. The best of them are large-framed, big-boned, coarse, homely creatures—fleshy without finish or good beef form—lacking in uniformity, and generally devoid of the most highly prized dairy characteristics. They have udders of all shapes but few really good ones; yet some are capacious, and good cows average eight to ten quarts of milk a day for nine or ten months, or 5,000 to 6,000 pounds per year. It requires at least twelve quarts of milk in the winter and fourteen or fifteen in the summer, to make a pound of butter. The annual butter product is therefore 200 to 225 pounds per cow—ordinarily 100 pounds a week from twenty cows, rising at times to 125 or 130 pounds. A few specimens of this breed have reached America and found favor in some quarters. But after some time spent in Normandy and an examination of many noted herds, they were decided to be a mixed, irregular, rough-looking lot of cattle, with no indications of economic dairy quality and hardly attractive as "dual-purpose" animals. Careful comparative trials of dairy-cows made in France proved the "Normandes" to be inferior in every respect to the Brown Swiss.

The cattle of the several cantons of Switzerland noted for their dairying, differ mainly in color and name. The Bernoise, Fribourgeoise and Simmenthal cattle are all spotted and have yellows, reds, and browns mixed with white in varying degrees and an infinity of patterns. Those with red or yellow spots, usually have white muzzles and switches, while black noses and tails accompany the brown and black spots. The Schwitz breed, better known as the Brown Swiss, has been established in this country for about thirty years. All of these Swiss cattle are exceedingly coarse-boned, large-framed, and heavy. They are exceedingly heavy for their size, famous mountain climbers, but carry a great superfluity of flesh for dairy animals, hardly compensated for by their performances at the pail. The Simmenthals are the largest and by some preferred for milch stock, but unbiased judges generally give the Brown Swiss first place for dairy purposes. In America the last-named race has included cows which have

made famous records in milk and butter production, but as a whole, all Swiss cattle must be here regarded as of the dual-purpose kind, and this means that they are not expected to add much to the value of our dairy stock.

CARE OF CATTLE.

In the housing and general care of dairy cows, no foreign country shows, as a rule, in general practice, any methods or conditions better than those of America. The average conditions everywhere are bad enough, with opportunities for very great improvement. But such improvement is being made as rapidly in this country as anywhere. Nowhere else is there a better appreciation of the importance and economy of abundant room, light, air, dryness, comfort and cleanliness for cows. One hears much of the close relations between the dairy-cows and the families of their owners in Holland and Switzerland, connecting apartments, under the same roof, etc., etc.; but the stables which are seen in summer converted into conservatories and rooms for weaving and cheese-curing are the exceptional and show places. Even the best of these, when visited in mid-winter, with the cattle in place, are often found dark, close, ill-ventilated, crowded and unsanitary in many respects; although frequently kept clean. The construction of cow stables generally in the dairy regions of the Old World is of a substantial kind, but with little regard to light and ventilation, convenience of arrangement or ease in cleaning. The labor necessary to keep them in decent condition would be regarded as impossible in this country. The cow-houses of Denmark average the best of all in Europe, but they are no better in any respect than the average of those in the distinctively dairy districts of this country, and there is here far more regard for economy of labor in management. Danish stables are generally kept clean—probably cleaner than in America—but at the cost of a vast amount of very cheap labor. In other countries as well as Denmark, much attention is paid to cleaning the cow stables, but the conclusion has been forced upon me that this is done more from an appreciation of the value of all farm-manurial matter and the fixed habit of saving it, than from any knowledge or intention of cleanliness as of prime importance in dairying. This is especially shown by the fact that cows are milked in just about as careless and uncleanly a manner in Great Britain and all over Europe, as must unfortunately be confessed is the common practice in the United States. The very general use of women as milkers in all foreign dairy districts is a decided advantage; they are gentler and cleaner than men and vastly better than the average farm laborer, who does all sorts of work during the day. Much attention is being given, especially in England, to perpetuating the race of efficient milkmaids, and the popular public milking contests at the dairy shows, are useful and commendable. Many parts of Europe have the additional advantage of keeping the cows in the fields continuously the greater part of the year and milking them in the open air. This practice does much to ensure clean milk and pure products.

FEEDING.

Very skillful feeding may be observed in many of the dairying districts of foreign countries. The owners seem to know how to obtain the maximum product from their cows with the minimum expenditure of forage. From Norway to Italy, and from Iceland to Siberia, dairymen, including the poorest peasants, do not hesitate to buy concentrated cattle foods when necessary to supplement home supplies; the purchases are made judiciously and the feeding is equally so. But this skillful practice is almost all based upon "the rule of thumb," learned of sire by son, and passed from generation to generation. It is my belief that, at the present day, there is much more general knowledge of the differences and comparative value of feeds and of correct principles of feeding in this country than anywhere else, Denmark not excepted. And yet there is probably more careless and wasteful feeding in America of dairy-cattle and animals of all kinds—two-legged as well as four—than anywhere else in the world.

The care which is given to milk on the farm where produced, whether it is to go to a milk-market or to be made into butter or cheese; with the location, construction, and arrangement of dairies or milk-rooms; their equipment and management; show great variety and lack of uniformity, in every country. The good, the bad, and the indifferent are common to all. Good milk rooms, well located, thoroughly built, shaded, cool and well-kept are not hard to find in any dairy district. Construction is heavier and more durable in Europe; convenience and ease of management are common in America. Excepting Denmark and Sweden, no country compares with America in the general appreciation and use of cold water and ice in the care of milk. The almost entire absence of refrigeration in France and the general ignorance of the

value of cold in dairying, is truly astonishing. In the matter of dairy appliances and equipment, the United States is surpassed by no other country, although Denmark and parts of Great Britain stand about as well.

PRODUCTS OF THE DAIRY.

The business of transporting, caring for, and distributing milk for consumption in its natural state and for household purposes seems to be in every possible stage of development in different parts of the world. Cows or their substitutes are driven through the streets and milked at customers' doors, in British India and the West Indies. Milch goats are managed in the same way even in the best streets of Paris and of Rome. The milk service of villages and small towns is conducted in an exceedingly crude manner, yet often picturesque, in some of the oldest dairying regions of Europe. In Scotland, Holland, Denmark, and Switzerland, milk is still carried in wooden vessels and retailed from them, in towns and cities. The local milk service in similar places in this country is often poor enough, with little regard for care or cleanliness, but nowhere as crudely performed. In most of the big cities of Europe there are large market-milk establishments, admirably conducted. There are fine ones in London, better in Copenhagen, and the biggest and best of all in Berlin. Paris probably has the poorest milk service of any of the large cities. There was a time, not many years ago when a few foreign milk-supply establishments far exceeded in many respects the best of like character to be found in America. But at the present time, although some of these European milk companies do a larger business and have more extensive and costly plants, it is my belief that we have in the United States a considerable number of establishments for city milk supply which are superior in many respects. Several might be named, in several different States, which are better than anything in Europe, in their buildings and equipment, the efficiency of their management and in the purity and high average quality of milk and cream served to their customers. Nowhere in the world is the important business of milk supply and milk service making such rapid and commendable progress as in the United States.

It is well worthy of note that at a special show of perishable dairy products held as an annex to the Paris Exposition, in July, 1900, just outside the city limits—where French producers had every opportunity of exhibiting their goods in the best possible shape (although under unfavorable local conditions after reaching the exhibit), there was a large collection of natural milk and cream. But the only samples of these products, absolutely free from chemical preservatives and uncooked, which were sweet and palatable after noon of the exhibition day, were from dairies in New York and New Jersey, then eighteen days from the cow! There was also in the United States dairy exhibit natural milk and cream from a farm in central Illinois, in bottles exactly as sent daily to Chicago families, which was only very slightly acid, although twenty days old. It had kept sweet until the day before this show and even later it was better than the best normal French milk only twelve to twenty-four hours after milking. (These circumstances have been stated in substantially the same language, during a speech in the Senate of France, by a Senator who was president of the international jury on dairy products at the Paris Exposition, and by another person in a report to the National Agricultural Society of France.) The American products have been preserved solely by cleanliness and cold; but I venture the statement that no milk-supply company in Europe could duplicate this performance.

ADULTERATIONS.

In butter-making and the butter-markets of the old world, an American dairyman may find many interesting features, but very little that is really instructive and worthy of adoption here. Private dairies make choice butter in Great Britain, the Channel Islands, Belgium, Denmark, and Sweden, and to a rather less degree in parts of Germany, France, and Switzerland. In Holland butter is now so commonly adulterated and the spurious article so often passed as the genuine, that the product of that country has lost its commercial standing. In nearly all other parts of Europe laws restricting and regulating "margarine" in all its forms are strict and fairly well enforced, although there is a laxity at times in some countries.

Such was the case in France during the last exposition period. The fact that fresh Normandy rolls sell at the very highest price in the London market must be recognized, and superior butter is made elsewhere in France, in limited quantity; yet the average quality of French butter is not high as a whole. It should be classed at the best as second rate. Belgium is a grade higher, while Germany, Switzerland, and Italy are lower. Sweden and Finland may be placed still higher, and Denmark easily holds the position of honor. The high rank of Danish butter, due full as much to most remarkable uniformity as to superiority, results from the general adoption of the associated or creamery system of manufacture (upon the cooperative plan), and the active aid of the government in criticism, instruction, and the supervision, amounting almost to control. Creameries are nearly as successful in Sweden and Finland. Those in Belgium and especially in Luxemburg are of most recent origin, but meritorious in management and production. Creameries lately established upon Danish models and rapidly multiplying in Russia and in Ireland, are doing well, but their product ranks in quality next below those already mentioned. There are several hundred comparatively new creameries, mainly coopera-

tive, in France and Germany, but they are of lower grade, although showing steady improvement. In considering the world's supply of factory-made or creamery butter, the excellent and increasing product of Australia and of Canada must be mentioned, both ranking but little below Danish in quality, and Argentina and Siberia are new producing territories, which will make themselves felt in the near future.

CONDITIONS IN AMERICA.

In the United States there are many private dairies that make butter as fine as any in the world and the same is true of our best creameries. The best American creamery butter is quite the equal of the best Danish, but there is no such uniformity of product and a greater proportion of it is inferior in quality. This results from the wide extent of territory and variety in climate and local conditions which affect the 8,000 or more creameries and the still greater differences in methods and management. There is ample room for improvement, in American creameries, but the only foreign country from which they can profitably learn is Denmark. The best creameries there are models of cleanliness, good order, and systematic management. They have also taught their patrons to properly care for the milk and deliver it at the factory in prime condition. Danish creamerymen have advanced well toward perfection—the control of bacterial growth, the practice of pasteurization, and the use of artificial cultures and ferments, as well as those natural, in ripening cream, all of this tends to ensure the clean, mild, and delicate flavor, and wonderful general uniformity which characterize Danish butter. Yet these results are largely accomplished in Denmark through an attention to detail and an expenditure of labor which would appall an American creamery manager. It is not an uncommon thing for six or eight persons to be constantly employed there through a day of long hours, in turning out a quantity of butter which is ordinarily made in this country by a man and a boy, who have all their work finished daily at 3 or 4 o'clock in the afternoon.

CHEESE-MAKING.

Cheese-making is a branch of dairying in which it is impossible to draw any close comparisons between the methods and results in this country and those abroad. For the production of large quantities of cheese of uniform excellence, I believe the American factory system common to the United States and Canada, is superior to anything elsewhere and more systematically and economically conducted. The average Cheddar cheese of the Cheddar Valley itself, of Somersetshire in general, and of the best producing districts of England and Scotland are no better than those of New York and Wisconsin, or the best Canadian cheese. In variety and fancy cheese, this continent can not yet attempt to compete with the Old World. If one would learn the bottom facts about making any of the famous specialties in cheese, he must go to the locality where they originated, and where alone, often within very narrow limits, they are still made in perfection. This applies to the English Stilton, the French Roquefort, and its close kinsman the Italian Gorgonzola, the Edam and Gouda of Holland, the Gruyere and Emmenthal of France and Switzerland, the Parmesan of Italy, and the Camembert, Eric, Neuchatel, and the hundred-and-one other small, soft, and high-flavored varieties of France and other parts of Europe; including, of course, the never-to-be-forgotten Limburger.

In several foreign countries there are "fairs" and markets, some only annual or occasional, and others frequent and periodical, which afford novel scenes to an American. Although curious and entertaining, with many features which are commendable when local conditions are considered, there is little about these commercial methods or systems which could be advantageously adopted in this country. As examples of these unique dairy markets may be mentioned the great mart or butter exchange of Cork, Ireland, and the daily auction sales of butter at the Central Markets of Paris, and the market days in many little towns and villages in Normandy, when the wives and daughters of the farmers and peasants assemble by the hundred in the parks or along the streets and sell their "mottes" of butter, often aggregating several tons a day in a single village, to the representatives of those immense blending-butter factories in the Iigny district of La Manche. The cheese fairs at Frome, England, and Kilmarlock, Scotland, and the street markets at Alkmaar, Hoorn, and Utrecht in Holland, are similarly interesting in connection with cheese.

CONCLUSION.

The foregoing facts and conditions as to dairying in the Old World apply mainly to countries (and districts in them), where dairying has been for several centuries one of the leading agricultural industries, if not the principal one. American dairying has been developed wholly within one century, and all of its notable progress has been within fifty years. The comparisons made show that there is little for us to learn from foreign countries, to improve our dairying. Our cattle are far better adapted to their special work and more economical as dairy animals, than any of the European breeds not common here. As a rule, they are better housed, fed and cared for, with greater economy of labor, although in many instances foreign dairymen are exceedingly skillful feeders. The rents, which are almost universally paid for farms in all the foreign countries named, would be regarded as impossible in this country. On the other hand, hired labor for farm and dairy costs but a fraction

there of what it does here. In dairy utensils and equipment, ours are superior and our methods are more generally founded upon principles which are understood and known to be correct. Butter is more economically produced in the United States, and so far as the product of the creamery system is concerned it is of higher average quality than that of any other country except Denmark; the same can not be said, however, of the farm dairy butter of this country. Europe offers a very much greater variety of cheese, including some of unsurpassed reputation, and a much more general appreciation of this product as an article of food prevails abroad. Notwithstanding the excellence of much of the European cheese, the facilities and processes of making and curing are comparatively crude. The factory system of cheese-making as at present organized and conducted in America, exhibits greater economy, equal skill, and more intelligence. In the important business of taking milk for market and all through the different grades of milk service, the United States is well abreast of Europe. This is true not only in comparing averages, but as already stated our best establishments and most approved practices are superior to the best elsewhere, in production, quality, purity, preparation, transportation, and delivery.

While too much can not be said in praise of the industry, frugality, and thrift of most of the dairymen of Europe, a close comparison leads me to feel that the conditions of this industry in the United States are decidedly more satisfactory in almost every particular.

Choosing Dairy Cows by Type.

A. L. HAECKER, NEBRASKA STATE EXPERIMENT STATION.

The dairy-stock problem, I believe, is a most important one to the Western dairyman, for he is compelled to accept our native stock for the foundation of his herd. The great mass of cattle now used in our dairies have for many years been reared to the hardy range life, where milk production amounted only to the rearing of a calf. We have fortunately many good individuals among these hardy cows that will respond very profitably to good feeding and care, and the secret lies in our selection. Choose we must, and how to choose is the question.

The beef producers are on the right track, they know the value of blooded stock, and all over our Western prairies we can see Shorthorn and Hereford bulls. It is a grand, good thing for they will improve the stock and make better returns. As such conditions grow, the confused ideas of milk- and meat-producing stock will clear away.

Too many dairymen are feeding and milking cows which do not pay for their keep. What good does it do us if we know how to care for milk, produce the best of cream, make fine butter, and market it well, if we lose in the end by keeping poor cows. "Dairying don't pay," is said by the man whose cows don't pay, and how many we keep in our dairy herds which have neither breed nor type to perform the work we expect of them. The difference between a \$25 and an \$85 yearly average per cow is too great to give no heed. It is the difference between a sorry loss and a good profit. Cull your herds. Now is the time. Never have we had a better. Prices of dairy stock are low, and a good cow can be bought at nearly the same money as a poor one. You have but to pick your cows, and if you can tell a good one when you see her, and the fellow who owns her can not, you ought to make an excellent bargain.

The other day, while conducting a stock-judging class, some visitors entered. We were working on two grade Jersey cows, one having a large, smooth, blocky build, with poor dairy points, but she looked like what some people call a "slick cow;" the other was a small-boned dairy animal, with well-defined dairy points. Fortunately we had the butter records for several years of these two animals, and did not have to guess at what they could do as producers. To get an expression from my visitors I asked them which cow they would pick, and two chose the large, blocky cow, while one favored the dairy type.

Now the real value between these two animals was \$35 and \$135, for, while eating nearly the same amount, one averaged 150 pounds, while the other averaged 350 pounds of butter per year. These two animals were very different in type, and any one could see a marked variation if he had the two before him for comparison.

The ability to select a dairy cow by type is most important and valuable. We have, it is true, the Babcock test and scales to find the butter capacity of a cow, but we can not take these around with us in buying our cows, neither can we tell by one or two tests what an animal is worth. Therefore the practical method of selecting cattle is by type. Dealers in beef stock are compelled to use this method alone. An animal is worth according to its form and breeding. Fortunately we are able to find, very conveniently, the proper type for the dairy cow. Going on the basis that "handsome is that handsome does," and applying a few yearly experiments by a number of different types, breeds, and individuals, we can obtain a great deal of valuable information.

Judging by type is not only natural, but logical. Animals are built more or less for a purpose. The race-horse has his particular form, the draft-horse his, the laying chicken a certain type, and the meat chicken another type. We have beef types, dual-purpose or two-purpose



types, and dairy types. It is reasonable to assume that a special purpose animal will excel in the purpose for which it is intended.

We have but to look at the great dairy cows of the world to see before us a marked and pronounced type or conformation of dairy points, while the great winning beef cattle are typical and ideal representatives of the beef type. In dual-purpose, I wish to say this, however, that the breeders of such named breeds have a grand and noble aim in view, and if they reach it or can even make a good showing they have accomplished a magnificent work. I have noticed this while attending some of the prominent State fairs last fall, that many dual-purpose breeders were greatly injuring their stock by leaning to one type or the other. For example, I saw Devon and Red Polled heifers so fat that they would be good contestants in the beef class, while their udders and mammary development were nearly lost. Such cattle I do not call dual-purpose. On the other hand, some breeders are leaning toward the dairy type and carrying it so far that their animals will never amount to much as flesh producers.

I believe a dairy type should be just what it is named and if it is able to fill both requirements, then it is a magnificent animal. I believe we have a place for the dual-purpose cow, as many breeders and dairymen will be satisfied with nothing else. Market conditions may also favor such a breed in certain localities. Some men have resorted to crossing, but indiscriminate crossing, I believe, is breeding back and not to be recommended as a rule. However, I know of some breeders who are making a success of crossing dairy and beef cattle in this manner, starting with a good dairy herd of Jerseys they have used an Aberdeen-Angus bull, which marks their calves black and hornless, and gives them a fair and equal chance on the market with other stock. In this way the breeder is able to sell his young stock when at baby-beef age for a good profit, while his special purpose dairy cows are giving him good returns in the dairy. This method, of course, is a little detrimental to the building up of his herd, as he will be obliged to select new individuals from outside sources. Feed and care means a great deal, but I believe that with good animals feed and care will follow.

In conclusion, I should like to leave this thought, that the dairymen who are getting the greatest returns from their herds are keeping dairy cattle with dairy points. Cull your herds. Now is the time.

Due West—Or Around the World in 192 Days.

OBSERVATIONS TAKEN WHILE ON A TOUR AROUND THE WORLD.

J. E. NISSLEY.

Horace Greely once said, "Young man go West." Whether intentionally or otherwise, he forgot to put a limit to the injunction, and in compliance with his fatherly advice I started west on the 25th of last March, continuing westward until I returned to the place of beginning, 192 days later.

A tour around the world—do we grasp the meaning? Not a few faint wishes, not one continual round of pleasure and holiday gaiety, not upholstered parlor cars, not dainty delicacies all the way; no, no. It is the unexpected rather than the commonplace; it is disappointments, dangers, aches, pains, inconveniences; delays often, hardships not infrequent; nausea sometimes; anxiety here, distrust there, tips everywhere; and incidentally some gold, or its equivalent, the amount dependent somewhat upon the tastes and temperaments of the individual who thrusts himself or herself into this vortex of undying commotion. As a reward or penalty for so romantic a disposition, Mrs. Nissley (my traveling companion), and I were homesick five times, sea-sick frequently (that is she was), thrice above clouds, and as often beneath the waters of the sea; five hundred times imposed upon, once entertained by the nobility, twice quarantined and once taken for a newly married couple, all of which we happily survived.

To circumnavigate the globe is a rare opportunity. Into it is crowded a wide field of experience, education, and discovery; much to please the eye, broaden the intellect, and inspire the heart. Too much, indeed, to rehearse in the limited space of one short address.

THE START.

I shall never forget the day that we sailed from San Francisco—a beautiful day, and the waters of the bay and Golden Gate almost without a ripple. Ah, yes, a sense of loneliness crept over me as we slowly moved out onto the bosom of the

Pacific, and as we watched the fast receding shore of dear old America. My feeling at that time can best be expressed by stating that I was glad to go but somehow sorry to start. It does give one an odd sensation to sail from San Francisco with a knowledge of returning to the United States at New York. One of the very first novelties indulged in is practicing, as Armetus Ward puts it, the "Art of keeping inside ones berth and outside ones dinner." The former is possible, but the latter is a physical impossibility sometimes; and you never know when even the expected will happen, but happen it will whether you want it or not. Yet I love the sea, and of all the vacations, none is so genuine, so restful, so bracing, and so absolutely full of wholesome pleasure as an ocean voyage. Mark Twain describes it as "Nothing to do but to do nothing and keep comfortable."

The following verses, which I picked up in a book on the subject, is expressive of the thought I wish to convey:

A SEA SONG.

"Away with care! Away with grief!
Hurrah for life! Hurrah we're free!
Away with sorrow! Perish wrong!
Hurrah, hurrah! The Sea! The Sea!
Hurrah! The gulls are winging,
O'er boughs, the waves are flinging
The cooling, pelting, stinging,
Salt sea spray.
Yo ho, the waves are dashing,
Yo ho, the billows crashing,
Yo ho, the spray goes flashing
Down the bay."

On ship board what a miniature world! Fellow passengers from all quarters of the globe, people from everywhere and going to equally as many places; plenty to eat and to drink, books in the library and music in the parlor; waiters, porters, chambermaids, and stewards galore; punching bags, chest expanders, foot-racers, and games to keep one in a reasonably good physical condition—in fact, much transpires to occupy ones time and break the monotony—entertainments, literary musicales, and what not. Permit me to allude to one in which it was my privilege to participate—among other numbers, an address by myself giving a synopsis of our trip thus far. At that time we were making a voyage through the Red Sea. I began by saying that I considered it a rare privilege to talk on those sacred waters to an audience representing almost every country in the world, not one of whom I had ever seen before starting on that voyage, nor probably ever would see again after going ashore at Suez. Hence, I told them that I gladly accepted the privilege of inflicting the awful punishment of a speech upon so worldly, world-wide a company. The fact is that in my audience that beautiful night, as we were sailing somewhere in the vicinity that Moses made his memorable escape, I had tea-planters from the tropical island of Ceylon; an English army officer, who had been in the siege of Ladysmith, South Africa; a business man from the East Coast of Abyssinia; a preacher from China; capitalists from England and Europe; and a few other isolated wanderers like ourselves from somewhere. It was a rare privilege and I refer only to it as illustrative of the character of incidents that helped break the monotony and add pleasure of an unusual nature to ocean travel.

INCIDENTS OF THE TRIP.

Three births occurred on one of the boats upon which we traveled, consisting of three of the nicest, most sought for, and most prominently named kittens that I ever saw. I am told that a cat never leaves a boat to which it becomes attached, and that doubtless these kittens would be a permanent fixture to that ship.

One of the saddest experiences was a burial at sea of a young man, the following evening after his death, at 8 o'clock. When all arrangements had been made for it and his body properly prepared, in the presence of the captain, the chief officer, the purser, the physician, and other minor officers, and many passenger spectators, after the monstrous engines had been brought to a standstill, the body was consigned to the depth of the ocean with only a very brief service. As we looked upon that scene during the stillness of the night and in mid-ocean, with the starlit canopy of heaven as a covering and the wide, dark, rolling, deep ocean as a grave, it presented a scene that I shall never forget. The engines were again promptly put to work and the boat continued to plough towards a distant shore. Possibly the most humiliating and yet harmless, and I dare say oftentimes most useless ordeal that one is subject to on board of many of the ocean-liners, is quarantine and custom inspection just prior to disembarking. Not infrequently a person is obliged to show ones tongue, have his eyes closely scrutinized, and pulse felt, and be put through a series of examinations and cross-examinations in a way to even make Kansas courts trying jointest's cases seem tame and uneventful.

QUARANTINE.

As I said before, we were twice quarantined, but only once was it of any consequence.

Buy and Try a Box Tonight.

While you think of it, go buy and try a box of Cascarets Candy Cathartic, ideal laxative, tonight. You'll never regret it. Genuine tablets stamped C. C. C. Never sold in bulk. All druggists, etc.

sequence. It was off the coast of Beyrout, Syria, on board of the Kedvel line-boat Assuan. For forty-eight hours our boat was obliged to anchor in the bay without communication with the shore, simply because it chanced to come from Alexandria, Egypt, where a case of plague had been known to have broken out several weeks before. Of course, our tempers were somewhat ruffled and the ephets at Turkish rule and customs not highly polished, but yet we really had no other alternative than to "grin and bear it," and so far as having any appreciable effect, we might as well look pleasant as otherwise. As I now recall the circumstance, I surmise, however, it was mostly otherwise. At the expiration of the forty-eight hours, a very officious looking Turk came on board and demanded first our passport, which we fortunately had secured through the kindness of our American consul at Port Said. Then we went through the process of showing our tongues, eyes, and pulses, and lastly, as though the indignities to which we had been subjected were not enough, we were placed in the ridiculously humiliating plight of having a lot of carbolic acid and water (mostly water), squirted over our person and soiled clothing, much in the same manner as we spray fruit-trees in early spring with a preparation to prevent caterpillars, etc.

Well, after all this, he (this officious gentleman), put his signature on our passport and looking up at me said something which, through the medium of our interpreter, I learned was that his charge was 5½ plasters—about \$1.25. I paid him and tried to look pleasant. One hour later on shore I had another encounter—this time with the tax-gatherer. You know we read how the publicans of old were sitting at the receipt of customs. Well, here was one to whom tribute was due, and had to be paid before we could be at liberty to go where we wished in Syria. Once again we produced our passport, which was already beginning to look pretty well disfigured, and had the stamp tax affixed. I still have that passport. I am going to have it framed and keep it as a memento of my Palestine trip.

Speaking of customs, reminds me of our passage through the custom-house at New York. After making the circuit and after having passed through at least two dozen custom-houses practically without paying any duty, an American comes back to New York with a sort of repressed pride, to learn that before he lands in America he must pay a duty on nearly every curio, present, and little bric-a-brac that he has with him; and in company with about 2,000 others, who landed from the same boat that I did in New York, I helped to increase Uncle Sam's exchequer over \$16,000 because I was abroad and desired to carry back in my hand-bag a few little, inexpensive souvenirs. It is wrong; it is uncalled for; it is aggravation, and I shall always raise my feeble voice against so unjust a custom. I do not like it.

LAND-TRAVEL.

So much for water-travel; now briefly about local transportation. Of course, every one has heard of jinrickshas, the most universally used vehicles throughout the Orient, and especially in Japan; a two-wheeled gig, weighing probably about fifty pounds and drawn by coolies (men), whose physical endurance is simply surprising; and with what seeming ease and speed they transport you from place to place at an average rate of about five miles per hour, for which you pay 15 cen, or 7½ cents United States money. At first it is intensely interesting and novel, but by and by one tires of it and gladly accepts any other mode of getting to and fro, even though it be a sedan-chair, which, by the way, is very common in some parts of China, especially in Hong Kong. I remember one afternoon we rode almost continually in one of these chairs carried by two men with poles suspended from the shoulders. This is a slower method than the jinrickshas, and produces a painfully distressing sensation by virtue of the swaying motion of the men carrying it. Then there is the ox cart of Ceylon, the camel of Egypt, and the donkey of Palestine; all in their native surroundings are as common as the horse and carriage in our own country, and one accepts the accommodation with perfect ease in the absence of anything else available.

In making a tour around the world, one naturally meets a great many people of all nationalities and descriptions, and a close study of their habits and customs is indeed very interesting.

Of the Orientals, the Japs are without a doubt further advanced in almost every line than any of the other Eastern races. This is true in education, in art, in trade, in government, in dress, and in health. They are progressive, strenuous, and exceedingly clever. Quite a few speak the English language with considerable ease and intelligence. The Chinese are less artistic, less tasty, more untidy in dress and person, with less regard for cleanliness and health, and in consequence given to more plagues and diseases. In old Shanghai their quarters are abominably filthy, their places of abode shockingly crowded, and their general appearance one of abject poverty and misery.

In the more pronounced tropical climate such as Singapore, Ceylon, and India, there seems to be a general spirit of idleness and shiftlessness among the natives. The dress (of those who pretend to dress at all), is very scanty indeed, their needs limited, and the incentive to labor almost entirely eliminated from their general make-up. The Malays, the Cingalese, the Indians, and the Egyptians are of a very dark



Mrs. Francis Podmore, President W. C. T. U., Saranac Lake, New York, Owes Her Health to Lydia E. Pinkham's Vegetable Compound. Read Her Letter.

"DEAR MRS. PINKHAM:—For several years after my last child was born I felt a peculiar weakness, such as I never had experienced before, with severe pains in the ovaries and frequent headaches.

"I tried the doctor's medicines and found it money worse than wasted. A friend who had been cured through the use of Lydia E. Pinkham's Vegetable Compound advised me to try it. I did so, also your Sanative Wash, and I must say I never experienced such relief before. Within six weeks I was like another woman. I felt young and strong and happy once more.

"This is several years ago, but Lydia E. Pinkham's Vegetable Compound is my only medicine. If I ever feel bad or tired a few doses brings instant relief."—MRS. FRANCIS PODMORE.

\$5000 FORFEIT IF THE ABOVE LETTER IS NOT GENUINE.

When women are troubled with irregular, suppressed or painful menstruation, weakness, leucorrhoea, displacement or ulceration of the womb, that bearing-down feeling, inflammation of the ovaries, backache, bloating (or flatulence), general debility, indigestion, and nervous prostration, or are beset with such symptoms as dizziness, faintness, lassitude, excitability, irritability, nervousness, sleeplessness, melancholy, "all-gone" and "want-to-be-left-alone" feelings, blues and hopelessness, they should remember there is one tried and true remedy. Lydia E. Pinkham's Vegetable Compound at once removes such troubles. Refuse to buy any other medicine, for you need the best.

brown complexion, and rather well featured; in fact, some of the better class and better dressed are quite handsome. The diet of all these people is very simple, consisting largely of rice in some one of the many forms in which it is prepared. Rice and cury, that is boiled rice with a sort of mustard and chili dressing, is one of the dishes that even tourists are fed on almost all the while. And I am frank to confess that while at first I rather detested it, after a month's continued ration on it I finally got so that I really relished rice and cury, and called for it every day. Fruits, of course, are in abundance almost everywhere. The pineapple and banana are probably the most conspicuous. Through India, however, the mango, a native fruit, in appearance somewhat like a popou, and in taste probably like a common specie of the muskmelon, is very much eaten by foreigners, who, when once accustomed to it, eat it with about the same relish as we would strawberries in this country. Through Egypt and Palestine we had a large and luscious variety of grapes and cherries, as well as watermelons and peaches; and an endless variety of all sorts of fruit through every portion of Europe.

LANGUAGES.

There is practically little difficulty in so far as language is concerned; the English language will take one around the world very comfortably indeed. Of course, a knowledge of German and French will add to the convenience, but is not at all a necessity. It is very surprising with how small a vocabulary of a foreign tongue one can get along with, even in traveling among the natives, and to what extent one can communicate through the medium of signs and gestures.

True, there are a number of amusing episodes as a result of ones too venturesome disposition, and in not being able to understand foreign languages and signs. In one point in China, we spent three hours to get a certain place that we afterwards learned should not have taken to exceed twenty minutes, while the rain was just pouring down, and thus affording us not a very delightful pleasure trip, and the expense was increased possibly ten fold.

On the wall in the dining-room of the Hotel De Capital, Rome, was displayed

quite conspicuously, the sign, "Defender Defumer." Many were our surmises as to what the words meant, ranging in a possibility of "terms cash," "wines extra," "ladies' tables," "tips accepted," etc., etc.; and we afterward learned that, interpreted, it meant, "no smoking." On many of the German railway coaches were the signs, "Herren," "Fraulin," "Nicht Rauchen," meaning that the various compartments were for gentlemen, ladies, and "no smoking." Singular how one soon learns the various terms; especially after being ejected from one compartment for trespassing as perchance in going into "Fraulin" compartment, which is for ladies exclusively—those that are accompanied by gentlemen are not admitted.

RAILWAY TRAVEL.

This reminds me of the railway travel, which forms a considerable portion of a trip around the world. Japan has railroad facilities almost the whole length of the island. There trains are slow, cars small, engines inferior, and on a whole in keeping with the service of this country probably fifty years ago. On the island of Ceylon there is a very creditable railway system with usually an Englishman at the throttle and the conductor of the same nationality, but aside from that, native Cingalese employees. I remember on a trip from Colombo to Kandy, Ceylon—a distance of nearly 100 miles—a very good dining-car service. The compartments are called "Refreshment Cars," and judging from the list of all kinds of drinks furnished I am of the opinion that the cars are properly named. Through India heavier trains, coaches, and engines are operated than any where else in all the East, and the time faster, too; but the heat in one of those coaches on the plains during the day is almost unbearable, and travel seems to be heavier at night. Many of the coaches are so arranged as to shut out the sun by darkening the windows, and there is an ingenious contrivance whereby water is circulated by means of a matted window, that gives some relief during the day. Night travel is very pleasant and comfortable, as the nights seem comparatively cool.

Everywhere, except in our own country, there is first, second, and third class fares, ranging from ¼ cents to 3 cents per mile,



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THE OLD RELIABLE

and about 80 per cent of all travel is third class, the accommodations of which are rather poor and crowded. In some portions of Europe a fourth class of compartments are used, consisting, you might say, of plain box cars, with no seats. These are patronized mostly by farmers in carrying their produce to market at an exceptionally low rate.

DAIRYING.

To make an address before this body on the subject in hand and not refer to dairying as it came under my observation during the tour, would indeed be a most flagrant misuse of the time allotted me.

Of course, dairying is not a very highly developed industry in the far East, and the absence of good butter and milk is painfully apparent, making one often wish for something different than goat's milk and buffalo's butter, which constitute probably nine-tenths of all delicacies (if such they be), in this line.

Cows (genuine cows), are very scarce in Japan, China, India, and Egypt, but as soon as the European continent is reached they become notoriously conspicuous. I remember that when sitting at the window of my hotel-room in Naples one morning, I noticed below on the street a small herd of cows with one or two attendants. Presently a lady came for some milk, and there in her presence and in the crowded thoroughfare the cows were milked, but only in such quantity as the customer then wanted. This we saw many times repeated as the cows slowly and with a seeming sense of importance surging through the crowd, stopped now here and now there. I think it a most admirable plan for milkmen who are inclined to be dishonest. But I am told that exceptionally unscrupulous ones have been known to dilute the milk with water, that is kept in a receptacle up in the large, loose sleeves worn by the milkers, and that in milking, an equal amount of water and milk is thus brought down and into the pail. Verily the milkman in foreign countries as well as with us, is a very much abused individual. Unjustly so, doubtless. But I did not delve into the wherefores and whys of this novel method of milk-delivery sufficiently to say whether it is the outgrowth of an abject necessity or the natural solution of a system that has attained the highest degree of efficiency attainable.

A SWISS DAIRY.

I had a very pleasant experience in visiting a creamery called in its native parlance, "moelkerie," at Luzerne, Switzerland; known as the "Gallagher Moelkerie." The name is very significant, as it virtually means a milk-factory, not a creamery where butter only is made, but a place where milk is centered and sold in every conceivable form from new milk to part skimmed, full skimmed, cream, curd, buttermilk, etc. Butter as well as cheese of every description is made, hence these "moelkeries" are nothing more or less than milk-markets.

This particular business was conducted by an old gentleman and two sons, one of whom goes twice a day over one of the milk-routes for the milk. It was my privilege to accompany him in one of these trips last July. The outfit consisted of a span of horses, heavy, fat, and well kept; a skeleton wagon with a very low bed hung between the front and hind axle; four large wood-jacketed cans, holding about twenty to twenty-five gallons each; a yard-stick with which to measure the milk, because they do not weigh or test it; and a few minor utensils.

It was about 5 o'clock in the morning, just as the sun was beginning to peep over the eastern peaks of the Alps, when we started out of Luzerne. The air was rather cool, the roads splendid although crooked, and in about one hour, after having passed through several little villages, we arrived at the further end of the route and began picking up the milk, which was in readiness and waiting at those quaint little Swiss farms, dotted here and there along the way at intervals of from 300 to 400 yards apart. Those located off the route would bring it to the line in dog-carts, many of which were in waiting all along, the large, faithful Saint Bernard dogs lying down in their harness resting. At 8 o'clock we returned to Luzerne with about 1,600 pounds of milk, representing the product of at least twenty-five dairies—that is one milking, as all milk is gathered up twice a day. This factory has six routes, the product of which, as I have intimated before, is sold and consumed entirely in Luzerne, and surrounding towns. The price paid at that time (July) was approximately \$1.40 per hundred. In answer to my inquiry I learned that land upon which these dairies are kept is worth \$800 to \$1,000 per acre; the taxes are low and interest about 4 per cent. A man owning a farm of five acres makes a very comfortable living on it with his cows and fruits. Of course, he does it, not by virtue of a very large income, but because of scrupulously economizing. I wonder whether we Americans, we Kansas dairymen, could not get a lesson from their example.

I will not take the time to speak of the dairy industry in Germany, Denmark, and Holland. Suffice it to say in passing, that I enjoyed and was very much interested in them. Let me say a few words in conclusion.

CONCLUSIONS.

After all, this old world is not very large when a novice like myself can circumnavigate it and do a considerable amount of sight-seeing in 192 days. Phineas Fogg, of whom Julius Verne has written, accomplished the feat in eighty days, while Nelly Bly returned to her place of beginning in sixty-seven days. Of course, both Nelly and Phineas had the

advantage of me one day on account of traveling eastward, gaining a day instead of losing one, as I did, in crossing the 180th degree of longitude. If I should ever attempt it on a wager, as they did, I would doubtless travel in the same direction, and I do not know but what I will right here offer to go Nelly six better and make it in sixty-one days. It may be interesting to you to know how I do it, and so I will disclose the scheme, relying upon your confidence not to give it away. From Topeka to New York would take one day and twenty hours; New York to South Hampton, five days and twenty-two hours. Then, instead of sailing from there south via Gibraltar and the Mediterranean to Port Said, requiring ten days under the most favorable circumstances, I would take the train at South Hampton and go by rail via London to Dover, ferry across the narrowest point of the English channel to Calais, France, thence taking one of the fast express trains direct to Brindisi in the extreme southern portion of Italy, reaching there fifty hours after starting from Southampton. Here I would expect to board one of the fast mail steamers of the P. & O. line that plies on the Mediterranean between that point and Port Said, Egypt—only nine days and twenty hours from Topeka. At this point begins the slow and tedious journey of sixteen hours through the Suez canal, and instead of wasting all that valuable time, I should take the train again and go by rail to Suez, the southern terminus of the canal, in four hours; or to be exact and not get our time confused, just ten days after starting from Topeka. Here I would take a through boat that was dispatched at least twelve days before from London to Hong Kong, and make that long voyage from Suez to Hong Kong via Colombo, Ceylon and Singapore, without change of boats in twenty-three days, and adding the ten days that had been previously occupied, I would then be thirty-three days on the tour. The Pacific mail, Oriental and Occidental line of steamers have through boats from Hong Kong to San Francisco in twenty-six days. This, in addition to the thirty-three days that I already had, would land me in San Francisco fifty-nine days after starting from Topeka, and we all know that I could reach Topeka in three days, which, with the time that we have just named, would figure up a total of sixty-two days, and if any of you have ever read Phineas Fogg's miraculous adventures in making this feat, you will remember that he returned as he supposed on Saturday evening, when in reality it was only Friday evening, thus turning a hopeless defeat into a glorious victory. He had failed to take into account the day that was gained while crossing the 180th degree of longitude, thus winning his wager. Hence deducting that one day from the sixty-two before named would complete the tour in sixty-one days, as per my original proposition. Now, if any of my hearers should be venturesome enough to make a wager and win on this schedule, I will consent to use 50 per cent of the amount so won. As a matter of fact, this is no fish story, but actually just about what could be done if great care was taken in making up an itinerary for such a trip. Even allowing for a few contingencies it still would be within the sphere of a quite reasonable possibility.

No, the world is not very large. Fast and luxurious railway trains rushing madly across our continents; and the commodious, elegant, and comfortable ocean greyhounds that plough the waters of all our seas, really make us closely allied with those in the Orient, and neighbors with all Europe and the islands of the sea.

To be exact, our trip around the world ended at the Santa Fe depot, Topeka, Kansas, where it was begun 192 days and fifteen minutes before.

It was the first time in my life that I positively kept on continually going away from home until I reached home again. With our faces turned toward the setting sun we pressed forward with nothing but the Pacific, the Indian, and the Atlantic Oceans, and several minor bodies of water, and a few comparatively small stretches of land between us and our goal. That is looking ahead. Looking back, at one time it was even within sight. The tour has been one grand holiday. Many places of interest and beauty came to our notice, some that we left reluctantly, desiring more of their charms and enchantments than what our rather hurried tour would permit. Yet after all, after all is said and done, one comes back home with the feeling whether "East or west home is the best," and probably no one is so well equipped to realize that, as he who has been banished, as it were, from home for a period of six months.

Butter for European Markets.

PROF. G. L. M'KAY, IOWA STATE AGRICULTURAL COLLEGE.

I am always pleased to meet a Kansas audience. You people are setting a pretty lively pace for others to follow. You have the largest creamery in the world, I believe, and ship cream a longer distance to the central plant than any place I know of. Last summer when visiting the largest creamery in Denmark at Hesiya or Trifolium I met the secretary and manager, who was quite an egotistical fellow and he told me as much as three times in thirty minutes that they had the largest creamery in the world, that we did not make good butter in the United States, that Denmark made the best butter in the world, and that they made the best butter in Denmark. I finally told the gentleman that the world was a pretty large place. I asked him what amount of butter they did make. I then told him that we had

PAT'S PHILOSOPHY.

The Sound Sense which is Sometimes Obscured by the Sparkle of Irish Wit.

Irish wit is very often unconscious. The Irishman serves up a dish of humor with a garnishing of wit. Beneath the lightest sallies of the strongest brogue, one often finds a depth of philosophy worthy of a sage.

When the Irish hod carrier fell from the ladder with his load of bricks, and was picked up by his sympathetic fellows: "Did the fall hurt ye, Pat?" said one to the half-conscious man. "Faith," came the whispered answer, "it's not the fallin' that hurt me, but the stoppin'."

It sounds like an Irish "bull," but it isn't. It is profound philosophy. How



many a man who has fallen into bad habits realizes that it's the stopping that hurts. How many a good liver who has suddenly been brought up short by an aggravated case of stomach disease realizes that it's the stopping that hurts. The falling is easy enough and the sensation pleasant. That downward route marked by the lunches of lobster or welch rarebit, washed down with a stimulating drink, was a very pleasant one to travel. But to come hard up against Nature's punishment of dyspepsia, which stops all pleasures of eating and drinking, is the thing that hurts.

THE WAY TO HEALTH

is paved with good intentions. When there is an over-full feeling after eating, with bloating and belching, the discomfort leads the man to say, "I must do something for this 'stomach trouble.' " But after a time the discomfort passes off and he does nothing. Sometimes he does worse than nothing by taking something to "settle the stomach," which, by giving temporary relief, encourages him to greater delay in taking the proper treatment for the diseased stomach. Palliative pellets, powders and tablets may relieve for a time, but they won't cure. They can't cure. Suppose you saturate the garbage in a barrel with cologne; there will be a sweet odor in place of a foul one until the strength of the cologne is used up, then the foul smell is worse than ever, and though perfumes may change the odor of garbage, they can't arrest the decay. Underneath the perfume decay goes along unhindered. It's so with the foul and diseased stomach. The things that "set-

tle the stomach" and correct for the time acidity, heartburn, etc., have no effect on the disease which is progressing steadily toward the chronic stage.

HAVE YOU REACHED IT?

Have you reached that point where you've had to stop eating what you liked? Are you living on toast and tea, or oatmeal—crackers and milk, coveting the good things you don't dare eat? Do you go to the table dreading the penalty of the meal and its after suffering? You can be cured so that you can eat anything you want, eat it with appetite and digest it properly. Here's the proof: "I was a great sufferer with dyspepsia for over two years, and I was a complete physical wreck," writes Mr. Preston E. Fenstermacher, of Egypt, Lehigh Co., Pa. "Had many torturing, gnawing, and aching pains—I think about all that a dyspeptic has or ever could have. I also suffered much with constipation. I tried many different medicines, which were recommended to cure the trouble, but these only made me worse and my condition was more sluggish and weak than before. My stomach was in such a weak condition that the least and easiest kind of food to digest would get sour in my stomach, and I had such a weak and debilitated appearance that it seemed as if I had hardly any blood in my whole body. Muscles were soft and flabby, circulation poor and slow. Suffered greatly from cold hands and feet. At last I came across an advertisement of Dr. Pierce's. I read it through and thought to myself this firm must have some sympathy with suffering humanity. I wrote to them for a question list blank, which I filled out and returned to them, stating my symptoms and pains. To my great surprise I received by return mail the best and most substantial advice that I ever before read. This advice gave me the greatest confidence in the World's Dispensary Medical Association, even so great that I at once left off all former remedies and tried Dr. Pierce's Golden Medical Discovery and 'Pleasant Pellets.' I used about eight vials of the 'Pellets' and ten bottles of the 'Discovery,' which brought me back to my former state of health."

TO BE KEPT IN MIND.

Let every person who has some slight disorder of the stomach keep this in mind: What hurts the stomach hurts the whole body, and every part of it. The body is sustained by food when digested and converted into nutrition. But when the stomach and other organs of digestion and nutrition are diseased, the food eaten can not be properly digested, the nutrition of the body falls, with the natural result of weakness. Hence, the loss of flesh, the run-down condition, the "weak" heart, sluggish liver, "weak" kidneys and other diseases which are a direct result of the diseased condition of the stomach.

Dr. Pierce's Golden Medical Discovery cures diseases of the stomach and other organs of digestion and nutrition. It enables the perfect digestion and assimilation of food, and therefore the proper nourishment of the body. By its use lost flesh is regained, weakness gives place to strength, and the body is built up with sound flesh and solid muscle.

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excellent satisfaction. The manager of this same house told me last summer that some of the finest butter they have ever received came from the Hazlewood Company of Iowa. When going through England and meeting butter-dealers and examining butter from different countries, I found that the American butter as a whole had a very poor reputation in the English market.

EUROPEAN PRICES.

Of course we can excuse ourselves and make the claim that we do not send our best butter abroad as the prices are thought to be better at home. This is not strictly true. I understand some of our best creameries in some cases netted from 2 to 3 cents per pound more for butter they

a creamery in the western part of the United States, in Kansas, that made one-third more butter than they did. He looked at me in amazement and I presume he thought I was telling him an improbable story. I referred to no other than the Continental Creamery.

Now in taking up the question of butter for foreign markets, I believe your large plants such as you have here are able to compete with any country when you send your best goods. I had the pleasure last summer of recommending the butter of the Continental Creamery Company to the house of Andrew Clemens & Son, of Manchester, England. I understand the Continental Creamery made a number of shipments to this firm and that the butter gave

exported than if they had sold it at home. There are certain seasons of the year when it would be a great benefit to us if our butter had the reputation it should have in the English market. From late reports, our butter sells on an average half a cent per pound lower than the Canadian butter, from 1 to 1 1/2 cents lower than Australian butter, and from 2 to 3 cents per pound lower than butter from Holland and Sweden, saying nothing about Danish selected and French rolls, which sell the highest in the English market.

The dairymen of this country have made great mistakes in sending over all the inferior grades to that market. Not many years ago our cheese ranked much higher than the Canadian cheese, but to-day the supremacy of the Canadian cheese is recognized everywhere. This has been brought about by the Canadians sending nothing but their very best, while some of our creamerymen, who wanted to get rich too fast, sent over skim-milk cheese, filled cheese, and other poor grades branded as American finest cheese until now the English people look upon our dairy products with suspicion. I was pleased to see the amendment attached to the oleomargarine bill by Congress, stating that process butter should be branded as renovated butter. This butter has been sold on the English market as finest American butter. I have nothing against process butter, but believe it should be sold on its merits.

The English market is a very peculiar market. In competing with goods sold there we meet the best from all the leading countries of the world. This is thoroughly demonstrated to the visitor as soon as he steps into the market, and observes the display of foreign products. We might well take a lesson from our beef friends. Go into the London market and note the display from Swift and Armour Company, and you will soon realize that they are not sending over their poorer grade of beef, but the finest that this country can produce. They are using business methods and are building for the future trade.

QUALITY COUNTS.

Meats are cut up in the English butcher shops, labeled, and sold according to quality, ranging in price from 4 cents to 24 cents per pound. Butter and cheese are sold very much the same. Englishmen take great pleasure in having good food. They do not go into a shop and ask for a pound of anything, but they make their selection and pay according to the quality. This means that fine goods sell at extremely high prices, while poor grades sell at ruinously low prices.

Notwithstanding that goods are sold in that market largely according to the quality, reputation goes a long way in creating a demand and fixing the price. Not many years ago the Irish butter led the market, but while the Irishman slept on his laurels the Danes came up with more advanced methods and surpassed him. Now the Irishmen are working with renewed vigor to regain their lost position, and this year they were successful in carrying off the prizes at the leading shows. It is not the sending over of a few fancy shipments of butter that will build us a reputation in that market, but the regular shipments of uniform quality.

We should ship to English market five times as much butter as we do. Little Denmark ships more than ten times as much butter to the English market as we do, and Holland, notwithstanding the large amount of cheese made there, ships twice as much butter to England. Russia sends three times as much butter as we do, and the far distant countries of New Zealand and Australia surpass us in their dairy exports to England. Many of these countries have their representatives located in England looking after the markets and keeping the manufacturers at home posted on all the requirements. The inspection and branding of the butter by Secretary of Agriculture Wilson was a move in the right direction. I believe it will greatly help our butter in the foreign markets. There seems to be a feeling among the people in England that they are being imposed upon by fraudulent dairy goods.

RUSSIAN BUTTER.

Some maintain that the Danish butter is not what it used to be, and go so far as to accuse the Danes of buying Russian butter and rebranding it as Danish butter before shipping it to England. I believe that Russia will yet crowd the Danes for first place in the English market. The Russian government is spending enormous quantities of money to aid the dairy business of their country. They are engaging the best Danish experts to come and instruct them in the art of butter-making. I examined a lot of butter in England that had been sent from Siberia. Some of it was of excellent quality, but taking it as a whole, I found that it was very irregular. Quite recently the Russian government entered into a contract with a commercial house at Riga, a port to the south of St. Petersburg, to establish a direct line of steamers to London. These are to be equipped with special refrigerating plants, and weekly trips will be made from Riga laden mostly with cargoes of butter. The Russians hope to very largely supply the London market.

When the Danes ship butter to England, samples of it are kept at home to be scored at about the same time the butter would arrive in England. If there are any defects in the butter they know it and are prepared to do better in the future. All this work is carried on at the expense of the government. The Australians and New Zealanders have their complete system of refrigerator lines for carrying dairy products and frozen meats to the English market. The Canadian govern-

ment has aided their steamship lines by subsidies, so they can lay down their perishable products in the foreign markets, in the best possible condition.

When I visited Montreal before sailing, I found large quantities of United States dairy products waiting to be shipped abroad from that port. So complete is their refrigerating system that the boat on which I crossed maintained a temperature in the storage department of 16 degrees. Milk taken on at Montreal kept sweet almost the entire voyage without being pasteurized.

EUROPEAN REQUIREMENTS.

What is required for that market is good, clean, mild flavored butter with very little salt and very little coloring added. It is not necessary that the cream should be pasteurized, as I found the dealers there were divided on that question the same as we are here. The highest-selling butter on the English market is the French market is the French roll made from raw cream. This is very high flavored butter with a high nose aroma. On the other hand the best Danish butter is made from pasteurized cream. The Danes skim a very thin cream, about 18 per cent fat, hence they are not troubled with the mealy condition of the butter that is sometimes present in pasteurized butter, especially when the cream has a high percentage of fat. I would not advise using more than one-half ounce of salt to the pound of butter. The Manchester market prefers a very light colored butter, while the London market will stand about the same shade as the New York market.

I would ripen cream to about .5 of 1 per cent of acid, or as soon as cream begins to thicken cool it down to churning temperature. What is desired is a mild, clean flavor. I would advise working butter twice with an interval of two or three hours between the working. If the butter contains much water, it will not affect its sale so long as it has a dry appearance. England has no fixed standard on the amount of water butter should contain. Danish butter runs about 15 per cent.

Butter will sell better in the English market if put up in boxes instead of tubs. Some merchants suggested that Americans adopt a box of their own and do away with the tub, as there was quite a prejudice against it. Now is particularly a favorable time to sell anything in the English market, as the English people are very friendly toward the Americans. I believe any of our big creameries could send butter regularly to that market and successfully compete with any other countries. This was pretty well demonstrated by the butter that the Continental and the Hazelwood Creameries sent over.

While we undoubtedly never will be leaders in that market, owing to our large home trade, I want to see our standard so raised in the English market, that whenever we send butter abroad it will command the highest price. There might be some excuse for Denmark with her cool climate and her proximity to England getting her butter there in better condition than we could, but we could certainly have no excuse for far away New Zealand and Australia surpassing us in that market. With modern refrigeration accommodations, distance, and transportation have very little effect on the quality of the butter.

We have passed the period when the country grocer sets the price for our dairy products. The leading markets of the world are our markets to-day. We can send butter to England for about 1 1/2 cents per pound; so whenever we make an honest effort to gain the reputation in that market that we should, we will succeed.

With our modern creamery methods, our intelligent butter-makers, and the education of our patrons to the better caring for milk, there is no reason why we should not be able to meet competition from any country.

Summer Feed for the Dairy Cow.

HENRY WALLACE, EDITOR WALLACE'S FARMER.

It is with a good deal of diffidence that I venture to address Kansas dairymen on a subject on which they must necessarily have had both observation and experience much more extensive and valuable than my own. It is not an easy matter, nor, indeed, a very safe thing, for a man from another State, where the conditions are widely different, to give advice to those who are "to the manor born," and who are presumed to have themselves a thorough, practical knowledge of the matters on which he is about to treat. Nevertheless, I have been compelled by reason of our expanding circulation in this State to give for several years past more or less attention to Kansas farmers, Kansas crops and Kansas conditions. As Kansas stockmen, you have given me a patient and considerate hearing in times past, and, therefore, I venture to contribute my mite to one of the problems which press on the Kansas dairymen for solution; namely, "Summer Feed for the Dairy Cow."

WHAT IS THE DAIRY COW?

Possibly it may be well, just here, to define what I mean by the dairy cow. I have spent some time of late, while preparing this paper, in studying your statistics, which are given with greater thoroughness and have greater value than those of any other State in the Union of whose statistics I have any knowledge. It is quite clear that the animals denominated "milk cows" in the statistics furnished by your State Board of Agriculture are not all dairy cows, as the average yield of butter per annum, as there given, is generally from fifty to seventy-five pounds, and take it that the dairyman who could secure no greater yield than that would soon retire, or rather be forced

out of the business. Therefore, I conclude that the cows denominated "milk cows" are cows that give milk, whether their milk is used for other than a self-drawn feed for the calf or not. By dairy cow, therefore, I mean the cow that is kept for dairy purposes, either general or special; that is, I mean the cow whose owner expects to receive some revenue from the milk other than as food for the calf that does the milking for itself, and generally with an immediate satisfaction which the ordinary dairyman does not experience.

There are dairymen and dairymen, and dairy cows and dairy cows. There are dairymen who make dairying their main business and who select and feed their cows with the special, or at least main, purpose of producing the largest possible amount of butter. There are other dairymen who should rather be called creamery patrons, who use their cows mainly but not solely, for the purpose of producing packages, whether calves or pigs, for the purpose of condensing freights on grain, forage, hay, or pasture. Presumably the largest number of Kansas dairymen belong to the latter class, but whether or not makes little difference as to the character of the feed to be given their cows during the summer season.

SUMMER PASTURE.

By summer feed, I mean chiefly summer pasture, and will dwell but incidentally on the grain-feed needed with the various kinds of pasture to provide a balanced or economical ration.

Kansas has three different zones, divisions, or belts, so far as pastures are concerned, imperceptibly and yet rather sharply blending or running one into the other, and these zones are the results of difference in rainfall and elevation above sea level.

The first of these is the eastern zone, extending from about the 96th meridian eastward, in which the soil, elevation, and rainfall are not greatly different from those of western Missouri or western Iowa, where, with proper cultivation, clover and timothy, meadow fescue, otherwise known as English blue-grass, as well as orchard-grass, blue-grass, and upland alfalfa can be grown with about the same success. The 96th meridian is about the western line of Shawnee County in which Topeka is located.

If you will take up the admirable reports of your State Board of Agriculture, you will be interested in noticing how rapidly the acreage of timothy, clover, and blue-grass decrease as you approach and cross this line, showing that farmers are finding out by their own experience the natural lines of what might be called the tame-grass country. For example, commencing at the east line, according to your statistics for the year 1898, the latest to which I had access when preparing this paper, Miami County grew 152 acres of alfalfa, 12,997 acres of clover, and 31,383 acres of timothy. Linn County, immediately south of it, grew 66 acres of alfalfa, 7,332 acres of clover, and 43,156 acres of timothy. Franklin County, directly west of Miami, grew 175 acres of alfalfa, 14,470 acres of clover, and 21,897 acres of timothy. Anderson, immediately south of Franklin, grew 197 acres of alfalfa, 6,598 acres of clover, and 8,842 acres of timothy. Osage, directly west of Franklin, grew 1,908 acres of alfalfa, 9,871 acres of clover, and 6,185 acres of timothy; while Coffey County, immediately south of Osage, grew 943 acres of alfalfa, 6,689 acres of clover, and 5,138 acres of timothy.

We now cross the 96th meridian into Lyon County, where the alfalfa jumps to 9,129 acres and clover drops to 1,141 and the timothy to 759 acres. Passing west to Chase County we find 7,298 acres of alfalfa and 2 acres of clover, which latter disappears after you leave the Lyon County line. Farmers have discovered that clover can be raised after they cross the 96th meridian only with difficulty and turn their attention to alfalfa.

What changes the last two years have made in this, I am not able to say, but volunteer the suggestion that if the farmers in the tier of counties west of the 96th meridian will prepare their soil for clover with as great care as they are now giving to alfalfa, both the clover and timothy belt might be moved westward at least the breadth of one county, or about half a meridian.

The middle zone, where clover and timothy for summer feed for the dairy cow can be grown only with great difficulty, extends from about the 96th meridian to the 99th, or about the western line of Barton, Russell, Osborne, and Smith Counties. We have now a width of three meridians where clover, blue-grass, and timothy are quite uncertain quantities, but in some sections of which it is probable that meadow fescue and orchard-grass might be grown with the proper cultivation, and where apparently alfalfa may be grown, given an alfalfa subsoil and a well prepared seed-bed, but over most of it the best summer pastures are those which nature has been providing for thousands of years by the growth of native grasses which have grad-

A STRANGE WOMAN

SHE MADE A PROPHECY WHICH HAS COME TRUE.

Over Four Years Ago She Told a Young Girl What Would Come to Pass and Gave Her a Piece of Advice.

"More than four years ago, an unknown lady came up to me and told me something which has made me very happy," said Miss Mary Lyle McLachlan of No. 72 E. Third Street, South Salt Lake City, Utah, to a reporter.

"Yes, it was a prophecy and it came true, and I shall always be grateful to her for the advice she gave me," she continued. "From the time I was thirteen years old until shortly after I saw this woman I was miserable. Every month I suffered horribly and I became weak and run down. My head ached, I could not eat and I had a very severe cough all the time. I could scarcely stand, and took fainting spells and was always dizzy and tired. Besides this my liver and kidneys were affected."

"You can readily see," she went on, "that I couldn't get much pleasure out of life. Then this lady, whom I never saw before or since, came up to me and told me that she knew how I felt and advised me to take Dr. Williams' Pink Pills for Pale People, for they had cured her daughter, who had been in a condition like mine. I took the pills and was better before I finished the first box. I am entirely well now, but I always keep them on hand and take them whenever I do not feel as good as usual."

Dr. Williams' Pink Pills for Pale People will not only cure cases similar to that of Miss McLachlan; but, containing as they do, all the elements necessary to give new life and richness to the blood and restore shattered nerves, they have proved efficacious in a wide range of diseases. They are an unfailing specific for such diseases as locomotor ataxia, partial paralysis, St. Vitus' dance, sciatica, neuralgia, rheumatism, nervous headache, the after-effects of the grip, palpitation of the heart, pale and sallow complexions, and all forms of weakness, either in male or female. Dr. Williams' Pink Pills for Pale People are sold by all dealers or will be sent postpaid on receipt of price, fifty cents a box; six boxes, two dollars and a half, by addressing Dr. Williams Medicine Company, Schenectady, N. Y.

ually adapted themselves to the climatic conditions, and where farmers, whether they have broken up their native pastures or not, will be compelled to furnish pastures of some sort other than those used in the eastern belt or in the States further east. What these should be will form the main subject of this paper.

The third zone comprises, in a very rough way, that part of the State lying west of the 99th meridian, or, as you are accustomed to call it, the short-grass country, where, except as irrigation may be possible, only the native grasses flourish. The problem of furnishing summer feed for dairy cows is, therefore, quite different in each of these zones.

IN THE EASTERN ZONE.

In the eastern zone it should not differ



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greatly from the same problem in Iowa and Missouri. Except with the strictly up-to-date dairyman, it is even in these States generally a neglected problem. In these States, as in your eastern zone, the luxuriant clover, timothy, blue-grass, and other grasses furnish excellent pasture up to July 1. The second crop of clover and aftermath of timothy usually furnish fine feed for dairy cows in September, and often through August, after which the blue-grass furnishes excellent late fall feed so that the months of summer shortage are confined to July and August.

With a little care the dairy-cow can be carried with undiminished profit through this trying season, more trying, on account of the added pest of flies, than even the winter months. Early Amber sorghum, Minnesota grown, if sown as soon as the seed will germinate, will be ready to use in the latter part of July; and fed as a soiling crop would carry cows safely through this trying period, and with the addition of bran, oil-meal, or cottonseed-meal, would furnish an excellent ration. Pride of the North, or some other early variety of corn, planted as early as possible, would serve the same purpose.

The man who is in dead earnest a dairyman will perhaps find a silo, well filled from the last year's crop of common field corn, the most convenient and perhaps as cheap a source of feed as any during this trying season. Silos can now be built so cheaply that dairymen, as well as beef-growers, will find it to their interest and advantage to carry through the summer one full silo as an insurance against drouth, and with bran and shorts available, as they are in this latitude where wheat can be grown so cheaply, can face blazing suns and short pastures with a soul undismayed.

SOILING CROPS.

Where dairymen have not been sufficiently enlightened as to provide themselves with a silo, they must either see their cows drop off in their milk or be prepared to adopt soiling, or at least partial soiling, with such crops as sorghum, Kaffir-corn, or early field corn, during these trying months.

The labor involved is not necessarily very great if the proper plans are made beforehand. Plant your soiling crops in long rows. If early corn be used, use the binder, driving from the field to the pasture. If sown sorghum is grown, use the mower and hay-loader. Life is too short and labor too costly to cut by hand and carry green feed to cattle. The penalty invariably inflicted for neglect to provide sufficient feed for dairy-cows during this torrid period is a shortage in the milk supply, which can not always, nor indeed often, be fully recovered when the fall rains and cool weather bring again the ideal season for profitable dairying.

In the third, or western zone, it is not probable that outside of the districts where alfalfa can be grown by irrigation there will ever be any very considerable dairy industry. Your reports for 1898 give 473 milk cows in Greeley County, adjoining the Dakota line; 751 in Wichita County; 942 in Scott County; 1,150 in Lane County; 3,759 in Ness County; and 3,665 in Rush County. When we reach Barton County, on the 99th meridian, the number jumps to 6,940, and runs from that to 10,000 or 12,000 until we reach the 96th meridian, when the number gradually declines, showing that the middle zone and not the western or eastern is the great cattle country of Kansas.

This western zone furnishes for three months in the early part of the season a scant but very nutritious pasturage in the buffalo and kindred grasses, and if sufficient rain is furnished, an excellent pasture the year around. The dairy cow, however, is not a good traveler, and if the dairy industry is ever established in that section, it must be by the use of alfalfa or sorghum as soiling crops from July onward.

It is in the second, or middle, zone that the problem presents the gravest difficulties. In this zone, comprising half or perhaps a little more than half the

State, the soil has amazing natural fertility, and the more so because the rainfall is not sufficient to leach out the nitrates as rapidly as formed, as do the soils further south and east, where there are heavier rainfalls and more open winters. The rainfall is not sufficient to furnish pasture of the ordinary tame-grasses, either rotation or permanent, such as are furnished by the eastern zone, and the land is too valuable to be given over wholly to native grasses as in the third or western zone. In fact, this territory between the 96th and 99th meridians, from Canada to the Gulf, presents some of the most difficult problems in modern agriculture, problems which can be solved successfully only by the farmers and experiment stations on the ground. Anything, therefore, that an outsider can offer should be taken merely as a kindly suggestion to be considered and accepted or rejected as its merits, after mature consideration, require.

A COMBINATION.

It has occurred to me that the best solution of the problem of providing summer feed for dairy cows will be found in the combination of pasture and soiling; in other words, in a system of partial soiling supplemented by a small grain ration, generally of a flesh-forming type. For pasture, dependence, outside of the fenced unbroken prairie, will have to be placed largely on plants usually grown for the grain and seed, but which being truly grasses are equally capable of being grown for pastures. It must always be remembered that wheat, rye, barley, oats, corn, sorghum, and Kaffir-corn are true grasses, while clover, cow-peas, soy-beans, and Canada peas are not grasses at all, but legumes. Your winter wheat over a large part of this central belt is capable of furnishing much fall feed for the dairy-cow. How closely it is desirable to pasture it, and whether moderate pasturing is a benefit or an injury, you know much better than I.

Rye sown in the latter part of August, or the first of September, on well prepared soil, will usually furnish some fall pasture; but whether or not it will furnish the earliest spring pasture, giving in much of the State a full bite during the month of April and continuing if properly handled, to furnish fairly good pasture up to the period of ripening.

It is easy by the use of succotash, or a mixture of the various spring grains, early and late, with perhaps winter rye, to secure a pasture that will furnish excellent feed up to July 1, or up to the time when the latest of these grains usually ripen. The value of these pastures may be materially increased if farmers will allow the cows only to fill themselves and then remove them to the yards, say at 10 o'clock, until 3 or 4 in the afternoon. The cow destroys more pasture by her droppings and by lying down on it to rest than she consumes, your own Experiment Station, and also the Nebraska Station, having shown that an acre of grass cut when at its best estate and fed to cows has from three to four times the feeding value of the same acreage of equal productive capacity used merely as a pasture.

The scarcity and high price of labor forbids the adoption of soiling as a rule, but it seems to me that a system of herding and partial soiling is, or should be, entirely practical on farms that depend for their income largely on the products of the dairy-cow. There should be no serious difficulty in securing in this way good pasture, even where the farmer has no native prairie unbroken, up to July 1. If he has native prairie pasture, it is worth considering whether it would not pay him to reserve this for July and August. In Iowa, this would not be advisable. Whether it would be under the conditions existing in the eastern part of the middle zone in Kansas, I do not know. I simply raise the question, confident that in this your judgment is more likely to be correct than my own.

SORGHUM AND RAPE.

Were it not for the two facts that sorghum is a dangerous pasture for cattle and that rape taints the milk if fed shortly before milking time, the problem for providing feed for the dairy cow in the middle zone of Kansas would not be at all difficult. It would be an easy thing by planting either of the above mentioned crops in such a way as to permit of some cultivation in case of deficient rainfall to procure in most of the central belt a most luxurious pasture in these hot, dry months when the heavens refuse the shower and the fly ceaseth not to torment.

Unfortunately, our wise men have not as yet discovered the reason why young sorghum kills some cattle, nor how to prevent the loss. Our creameries insist, and rightly, on milk without the turnip flavor; therefore, a rape pasture can be used only a few hours after milking time.

Why is it not possible over a large portion, if not over all, of this central zone, to utilize the cow-pea for a July, August, and September pasture? Why is it not possible to plow under fall rye after it has been used as a pasture, especially if pastured so closely that much seed does not ripen, and grow a second crop of cow-peas for August and September, and reserve prairie pastures for July? Or, where this is not available, use Early Amber cane, Minnesota grown, as a soiling crop during July, thus limiting the soiling to the single month of July, and perhaps October if you are not growing fall wheat?

You see I am feeling my way and putting interrogation points at you, for, in fact, you must solve all these problems for yourselves. One thing is sure, if you are to make dairying profitable in this State, the cow must be fed with food suitable, or, as the wise old Agur, the son of Jakeh, would say, "convenient" for her;

Are you a Dairyman?

Do you sell milk?

Are you hunting the best market?

Have you been watching our price?

Did you know we paid the first week in February

24 cents a pound for Butter Fat?

The second week in February we paid

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You always know what you are doing.

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Send us a letter and we will send Tags and Seals.

Commence shipping at once.

Take advantage of the high market.

Ask your bank to look us up, and see if

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Very respectfully,

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and if you do not intend to provide this food in sufficient quantity and of the right quality, you had better not go into the business at all, or get out of it if you are in. If you can not dairy as they do in Ireland, with grasses green all the year around, or as in Iowa, with abundant pastures all summer long, howbeit a trifle dry in July and August, you must provide artificial pastures such as I have suggested.

ALFALFA.

I have said little about alfalfa, nor need I say that where it can be grown, either with or without irrigation, it should be the preferred soiling crop for the dairy-cow in summer and the preferred roughage in winter. The man who can grow four tons per acre per annum need not concern himself about other summer feed during July, August, and September, so far as the cow is concerned, but he may well inquire whether the land does not need feeding as well as the cow, and whether it is not possible to maintain fertility without adopting a rotation that has somewhere in it a leguminous crop, of which cow-peas are likely to prove the best in sections and on farms that will not grow alfalfa. Alfalfa can be grown on many farms where it is not now grown, and will spread over the farms and over the State when Kansas farmers learn, as they are now learning rapidly, how to prepare a proper seed-bed. By imperatively requiring this as a condition of growth, alfalfa is teaching Kansas farmers how to farm better by preparing a better seed-bed for all their crops.

My suggestion is, therefore, that in this central zone on acres where you can not grow alfalfa, you should use fall rye for spring pastures, reserving your prairie pastures, especially in the western part of this central zone, where you more nearly approximate range conditions in July and August. We should plow or disk this land when the rye is exhausted and sow it to cow-peas of the earlier varieties, such as the Whip-poor-will, then use the earliest sorghum you can find for use as a soiling crop when the frost has killed your cow-peas, drilling it in on land from which you have taken winter wheat or rye, or on which you have grown succotash crops.

It is possible that in the southern part of this belt you can use the larger and later varieties of soy-beans. By the use of one or other of the crops above mentioned you can not only provide the best of summer pasture for the dairy-cow, but you will at the same time maintain the fertility of your soil, a matter of prime importance to you, although many of you may fall to realize it now. For rest assured that Kansas is no exception to the universal law that no soil, except perhaps an old graveyard, is so rich in available fertility that it can not be exhausted by poor farming. The converse of this proposition, and equally true, is that no soil naturally good can be so completely worn out that it can not be restored to its original fertility by good farming.

FERTILITY.

You have a soil of marvelous productive power, stored with humus as well as the essential elements of fertility in the past ages by the great Farmer of farmers. By growing wheat after wheat and alternating grain crops without leguminous crops, you are rapidly decomposing this humus transforming it into ash, which remains with you, and gases which mingle with the winds of heaven. Your soil, in the future, will bake worse than it does now; it will drift more than it does now; it will have less water-holding capacity, and the only method by which you can bind up the broken-hearted land and restore it to its

virgin condition is by a rotation based on some leguminous crop and by some line of stock-farming which will enable you to consume most of the grains and all the grasses and forage grown on the farm and by the conscientious hauling out of the manure maintain the supply of humus in the soil.

When Secretary Wilson and I first attended a meeting of your State Board of Agriculture, in Topeka, perhaps ten years ago, we had to pick our way along the sidewalks through sacks of bran and shorts for shipment as cow-feed to Eastern cities, while at the hotel we could get no milk, and ate cheese made in New York. He reminded me of this when in the office a day or two since. You were then paying freights, commissions, and profits both ways, and no wonder you complained of hard times. You are doing much better now, but your best is yet to come.

Farmers do not usually engage in dairying until necessity compels them, and the sooner you are compelled to solve the various dairy problems, one of the greatest of which is summer feed for the dairy-cow, the better it will be for Kansas.

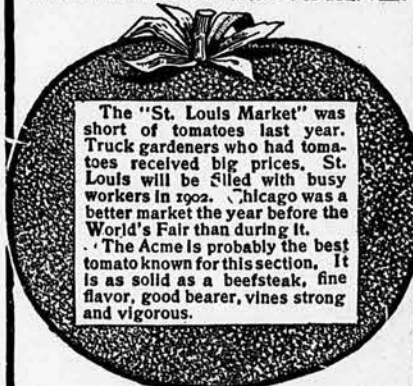
KANSAS FOR DAIRYING.

It has been my thought for some years that at some time in the future Kansas, and especially its middle zone, will be one of the great dairy sections of the United States; a paradise for the eighty-acre or quarter-section farmer, where by a system of partial soiling during the hot

(Continued on Page 307.)

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CROSSING THE BAR.

Sunset and evening star,
And one clear call for me!
And may there be no moaning of the bar
When I put out to sea,
But such a tide as moving seems asleep,
Too full for sound and foam,
When that which drew from out the
boundless deep
Turns again home.

Twilight and evening bell,
And after that the dark!
And may there be no sadness of farewell
When I embark.
For, tho' from out our bourne of time and
place
The flood may bear me far,
I hope to see my Pilot face to face
When I have cross'd the bar.
—Alfred Tennyson.

A Son of the Soil.

VI.

A LETTER HOME.

November 28, 19—.

DEAR MA:—I have not had much time lately to write home, but you can tell by that that I'm getting along all right, because if I get sick or get into any kind of a scrape, I'll let you know right off. We're having great old times up here at the college, now-a-days. I'm doing chores for a doctor that I got acquainted with one time when there was a fire out at the college. I told you about the fire, I guess, in my last letter. Well, I got my head cut a little and some of them got scared and got the doctor to fix it up. It was nothing, though—didn't phase me. I went to college right away afterwards. Well, I found out that that doctor—Dr. Brown is his name, and he's an all-right fellow—was wanting somebody to do his chores. The last boy he had did not suit, you know; he was too lazy; and so he thought maybe I could do them. And I was mighty glad of the chance, because I had spent every last cent I had, and then some. I have to milk the cow and tend to the horse, and make the furnace fire, and oh, several things; and I get my board and room and washing for that. The doctor's a fine fellow, but I don't like his wife and girls so much—they're too uppity. My, but they're stylish! They have company 'most all the time, and when they don't have company they're going somewhere. They had a party the other day—a hen party—that's all girls, you know. Well, I helped the hired girl wash dishes. I got a dollar for it.

I had bad luck that day. I'll tell you about it. I had a long apron on, a-dangling 'round my legs, and I was carrying the dishes into the dining-room—they keep their fine dishes in a glass case in the dining-room. So I was carrying them in, and I looked into the back parlor, just carelessly, you know, and who do you suppose I saw looking at me? Why, it was our class-president. She's a great friend of the doctor's girls, and awful pretty. Got curly kind of red hair, you know. Well, I tell you, I felt mighty funny, some way, with that old apron flopping around that way, and I guess I looked funny, too; but I just made the best of it and grinned at her and she grinned back real jolly and nice—nicer than I expected her to, because she acts kind of uppity sometimes up at the college.

We had a class-meeting two or three weeks ago and she got mad because one of the boys thought maybe we'd better not let the girls in on the cane-rush. There's a fellow named McLain in our class—I guess I told you about him—he's got a lame leg and his father owns a book-store down town. He likes girls pretty well, I guess, and he got right up in meeting and squelched that other fellow, or tried to, but he's pretty hard to squelch.

I guess I'd better tell you about our cane-rush. Maybe you won't like it, but I guess you won't scold now that it's over. It wouldn't do any good, now, you know.

Well, it was last Friday, and the fellows blacked my face and hands and my hair all over with charcoal—my hair is so kinky, you know, that I made a fine coon—they wanted me to look like old Tom. Then I put on some old clothes that were too big for me, and I tell you, you wouldn't have known me yourself. So I got old Tom to stay out of sight that afternoon and I borrowed his old mops and brooms and went around the college a-sweeping and a-singing his old songs real low and kind of cracked. After awhile I went back over to the girl's dormitory, hob-

bling along, and two of our girls were down in the basement in Tom's room with the canes. So we tied two or three in with the brooms and mops and I took them over to the chapel and hid them in a closet. Well, I went hobbling back and forth that way five or six times. Once I was scared. One of the Sophs came prowling around, and he hollowed to me—thought I was Tom, you know—"Say, Tom, seen any Freshies around here with their canes?" Well, I didn't know what to do; knew if he came up close, he'd see that I wasn't Tom. But I just went on, crippling along, and a-humming away—my voice shook without any trying then!—and then I saw some more Sophs coming. They hollowed to this fellow, and he stopped to talk to them, so I went on in, a little faster than Tom goes. I got into the closet with the canes and hadn't been there more than five minutes when I heard a lot of people coming into the room. Maybe you think I wasn't scared! I scrooched 'way back in a corner and was almost afraid to breathe. Well, bless my soul, if it wasn't the faculty coming for their regular weekly meeting. And pretty soon they began to talk about cane-rushes. Some of them thought maybe they would have to abolish them, because—oh, I don't know why, no good reason.

You know I told you about Miss Clark. She's the piano teacher, the one that has such queer black eyes, and I didn't like her at first, but I do now, pretty well. Well, she's awful nervous, and I heard her say, oh, she did hope we wouldn't have any more of those barbarous affairs; she was sure somebody would be hurt. There's no danger of that, though, ma; not a bit; she's nervous, you know.

Well, just then I guess I got excited and moved around some, and all that bunch of canes fell over with the awfulest whack I ever heard. Some of the ladies in the room screamed and the men all rushed for the door. Well, I grabbed the knob and held it as long as I could, but I tell you some of those professors have pretty strong arms, and when two or three got hold of the knob on the other side, I had to give up. The president looks pretty old and shaky, but I tell you he ain't. He grabbed me by the collar and dragged me out into the room in great shape. Made me kind of mad, too, because I wasn't doing anything. They didn't know me at first, and the president kept his hand on me, and very sternly told me to give an account of myself. You see, I couldn't do anything. I couldn't even look dignified when he was holding me that way, and I kept getting madder and madder, and I was scared to death for fear they'd let the secret out about the canes. So I just didn't say anything, but I just twisted around and looked at him. I guess it looked awful funny, for every one of them began to laugh—except the president. Then as soon as he could, for laughing, Professor Cottingham, our science professor—I tell you he's great—he got up and said he believed he knew what it all meant, and he went and looked in the closet and brought out some of the canes and held them up. Then they laughed more than ever, and then I had to laugh. I guess I laugh different from most people, because as soon as I laughed, one of the lady professors said: "Well, that's Johnny Copley, as sure as I'm alive."

Then I guess I was inspired, for I just made them a speech right there and then, and told them a few things about our class and cane-rushes, and I said: "If you folks go and tell about this scheme of ours, you won't be worthy the name of gentlemen and ladies." It sounds kind of impudent now, but I didn't mean it that way. But I gave it to them right straight from the shoulder. Well, they said we might impose implicit confidence in them, and our secret would be kept sacredly within their breasts forever. Professor Cottingham said that, and I guess maybe he was kind of half way making fun of me, but I didn't care, and we all laughed.

Then they left pretty soon, and I went back into the closet and shut the door, and waited in that stuffy little closet for two solid hours, and I tell you I got hungry.

But when I heard steps going up the stairs, and people talking and laughing, then I knew it was pretty near time for me to start out. I opened the door just a crack so I could listen better. It was dark as pitch in the room, and I was afraid I'd stumble around over chairs and things trying to get out. Pretty soon I heard the whistle that was the signal, and the boys just a-whooping around in front.

They were making a fake rush, you know; just pretending, and those big Sophs were after them for all they were worth. I crept out and hobbled along through the dark halls, going toward the back stairs. The back stairs wind around awhile and then you come to a door and that lets you in onto the chapel stage. Well, I knew there'd be a Soph guarding those back stairs, and I'd have to be awful slick to get past him. But the other fellows were going to try to be on the inside up there as soon as I was, so they could help me if there was a scrap. I tell you all those canes were pretty heavy and bunglesome to have a scrap with.

Well, I got almost up the stairs—the guard was not expecting anybody from the inside, you know, so he was watching the outside door for all he was worth. As soon as I saw him, I began to hum old Tom's quavering old songs, so he didn't notice me much—just said, "Hello, Tom," when I got to him. Then the canes clicked together and he looked at me sharply, and I saw I'd got to rush for it. So I gave a bound up the last two steps and dashed past him. He gave a peculiar shrill call for a signal, and jumped after me. I tore across the stage and saw the rest of the class just pushing and scrambling their way in. They all gave a whoop when they saw me, and made a dash for our seats, where I threw the canes from the platform. That old Soph caught me and hugged me tighter than you ever did, but I didn't care for it didn't do him any good nor me any harm. I guess he was excited and thought I was the bunch of canes myself. All the people cheered and clapped and laughed. I guess I must have looked awful funny all blacked up that way. Well, everybody had to be quiet, then, and listen to the program. It is always the hardest to get into the chapel; climbing the stairs and everything against us, you know. But we also had to carry the canes out again and safely home or we would lose all we had gained. So each fellow took his own cane and when the program was over we all stuck as close together as we could and hung on to our canes. Nobody dares get mad or hit anybody. One of the Sophs did strike a Freshman, but Wainwright, the football coach, happened to see it, and he said there'd have to be fair play or he would interfere. That meant, you know, ma, that he'd take a hand himself, and nobody wanted to run up against him just then. Oh, well, we had an awful scrap, it was exciting, I tell you. Some of our canes were broken, but not one whole one did those Sophomores get! Mine has the handle broken clear off, but I've got it hanging up in my room and I tell you it's prettier than any picture, I think.

Well, ma, seems like I always write long letters, if I don't write often. I thought maybe you'd like to hear about the cane-rush, seeing as I had a pretty considerable share in it. It's pretty near dark, now, and I'm tired of writing anyhow, so I guess I'll close. Don't forget to write soon. Yours truly,

JOHN COPLEY.

P. S.—Tell pa I guess maybe he'd like to see a cane-rush. I'm thinking some of going into business here to help myself along. I'll see about it before I say anything serious about it.

J. C.

(To be continued.)

QUESTION BOX.

About the telephone:—What I want to know is about the telephone. When two bridging lines, each with its full capacity of instruments, terminate at the same central office, can a person on line No. 1 talk with a person on line No. 2 without extra batteries? If so, how? Please explain the process.

RALPH LA MONT.

Yes, providing the batteries of the two lines have the same resistance. Then, the only thing necessary is to call up central and give the number of the person with whom you wish to talk. Central will make the connection between the lines for you, and that is all there is to it. If we have misinterpreted your question, or if you wish to ask further, we shall be very glad to inform you.

The kitchen cabinet:—What President's cabinet was called the "Kitchen Cabinet," and why?

"OAK GRANGE."

There are two explanations of the term "Kitchen Cabinet," which arose during the term of President Jackson. The first is that the wife of Secretary of the Treasury Eaton, was a wait-girl before her marriage, and when the wives of the other cabinet members

learned of it, they refused to call upon her. When the President heard of this he was furious and swore that he would "stand by Kitten Eaton against the world." This gained for the honorable ladies the name of the "Kitchen Cabinet." The other explanation of the term is that there were two prominent Tories, members of the editorial staff of the chief Tory paper of the capitol, who frequently called at the White House to discuss politics with the President, and not caring to have it generally known, they were in the habit of entering by the back door. The Whigs contemptuously called them Jackson's "Kitchen Cabinet," insinuating that the President's policy was governed by them rather than his rightful advisers.

Chinese Lily:—I have a Chinese Lily which has bloomed and the blossoms are faded; can I keep the bulb until next winter, and how? A READER.

It will be of no use to attempt to keep the bulb; indeed, if you have grown it in soil you will see that it has already split up into smaller ones. These in three or four years, will bloom if you think it worth your while to care for them so long. They must be allowed to rest in summer and grow in winter. If you have grown your bulb in water, however, as is often done, its vitality will be used up, and it, therefore, will be of no further use whatever.

Snow-flakes:—Please tell me through the KANSAS FARMER, what the cause is of the snow-flakes taking geometrical shapes. LAURA ROBINSON.

This question illustrates very clearly the fact that the simplest and commonest things around us are full of wonders and beauties of which we are quite unaware.

The snow-flake is a crystal and it takes its various beautiful forms in obedience to certain laws of nature. You may see the same thing, though in a less attractive form, in innumerable common things, in salt, for instance, in sugar; break open a pebble and you will see sparkling little crystals. And all these crystals have certain geometric forms.

Now, as to the why. It is not difficult to state facts, but to explain them is quite another matter. For ages, men of wisdom and learning have been studying this very question of crystals, and to-day foremost scientists admit that only the a b c's are known. Everything in the world is supposed to be made up of very small particles which are held together by some force, which is called cohesion. It is this cohesion which holds the minute particles of snow together. Why do they take shapes of such beautiful symmetry? why are they not irregular and misshapen?—these are things that no man can tell.

FOR THE LITTLE ONES

THE COWARDLY KITTENS.

Three kittens once began to play,
The kitchen floor was bare,
And round and round they flew in glee,
And scampered everywhere!

When suddenly there came a noise,
A sharp and grating sound;
The kittens three stopped in their play
And softly looked around.

Nothing at all was there to see;
No person anywhere!
The kittens stood and peered about,
With wide-eyed open stare.

Then quickly one, a smart maltese,
A pretty gray-faced cat,
Cried, "What a joke upon us all,
It is a distant rat!"

—Reform Herald.

What Sammy Did.

MARGARET BRENNER.

Sammy spied it when he came home from school. It was a wee bit of a red flame, creeping noiselessly in and out of the dry, brown leaves, that Miss Hetty had raked in a neat little pile, close against the fence.

But a wee bit of a flame can grow into a fierce, hot blaze, and Sammy knew it.

"But I don't care," he said, slowly. "It serves her right, 'cause she gave me a scolding. Nobody plagued her cat, 'cept to tweak his tail, a little tweak! 'Spect me to tell her! No, sir-ree!"

And then into his own yard marched Sammy, with his head held high, and his shoulders thrown back, just like a really and truly soldier, only—soldiers always do their duty, and they are ready to fight, and Sammy—well—

he wasn't! He didn't want to fight the unkind thoughts that came into his heart and grew to unkind actions, and so not once did he look back, until he had reached the piazza steps. And when he did, he saw the red flames dancing and leaping about Miss Hetty's grape-vine trellis, and her old board fence.

He gave a little shiver. He was thinking how the whistle would blow and by, and the whole street would be filled with smoke and people, and Miss Hetty's furniture, and—

"You'll be to blame," whispered a little voice inside of him. "You'll be the cause of it all, Sammy Talbot!"

Sammy stamped his foot. "I won't—either!" he exclaimed, loudly; and then, how he did run!

"I want a bucket and a heap of water," he told Miss Hetty, "cause the flames are creeping and the fence is burning good!"

And when it was all over, and the last little spark of light had been drowned, Sammy and Miss Hetty walked up the garden path together, hand in hand.

"You're the very best boy that ever

lived!" exclaimed Miss Hetty. "You're a brave little soldier to fight my fire so fearlessly. You're—"

"But I wasn't goin' to be," interrupted Sammy. "I remembered the cat's tail, an' I most 'cided to let it burn!"

"O—oh!" shuddered Miss Hetty. "If you had, Sammy!"

"But I didn't," declared Sammy, joyously, "and—"

"You kept the Golden Rule," exclaimed Miss Hetty; "and you've taught me to be kind."—The Mayflower.

"Ez for book-readin', wife an' me ain't never felt called on to read no book save an' exceptin' the Holy Scriptures, an', of cose, the seed catalogues."—Ruth McEnery Stuart.

Nothing so thoroughly removes disease germs from the system as Prickly Ash Bitters. It gives life and action to the torpid liver, strengthens and assists the kidneys to properly cleanse the blood, gives tone to the stomach, purifies the bowels, and promotes good appetite, vigor, and cheerfulness.

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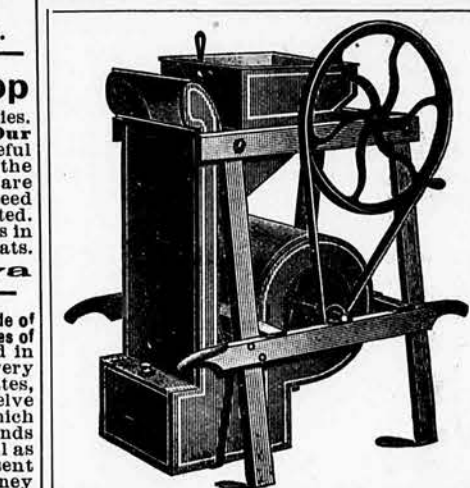
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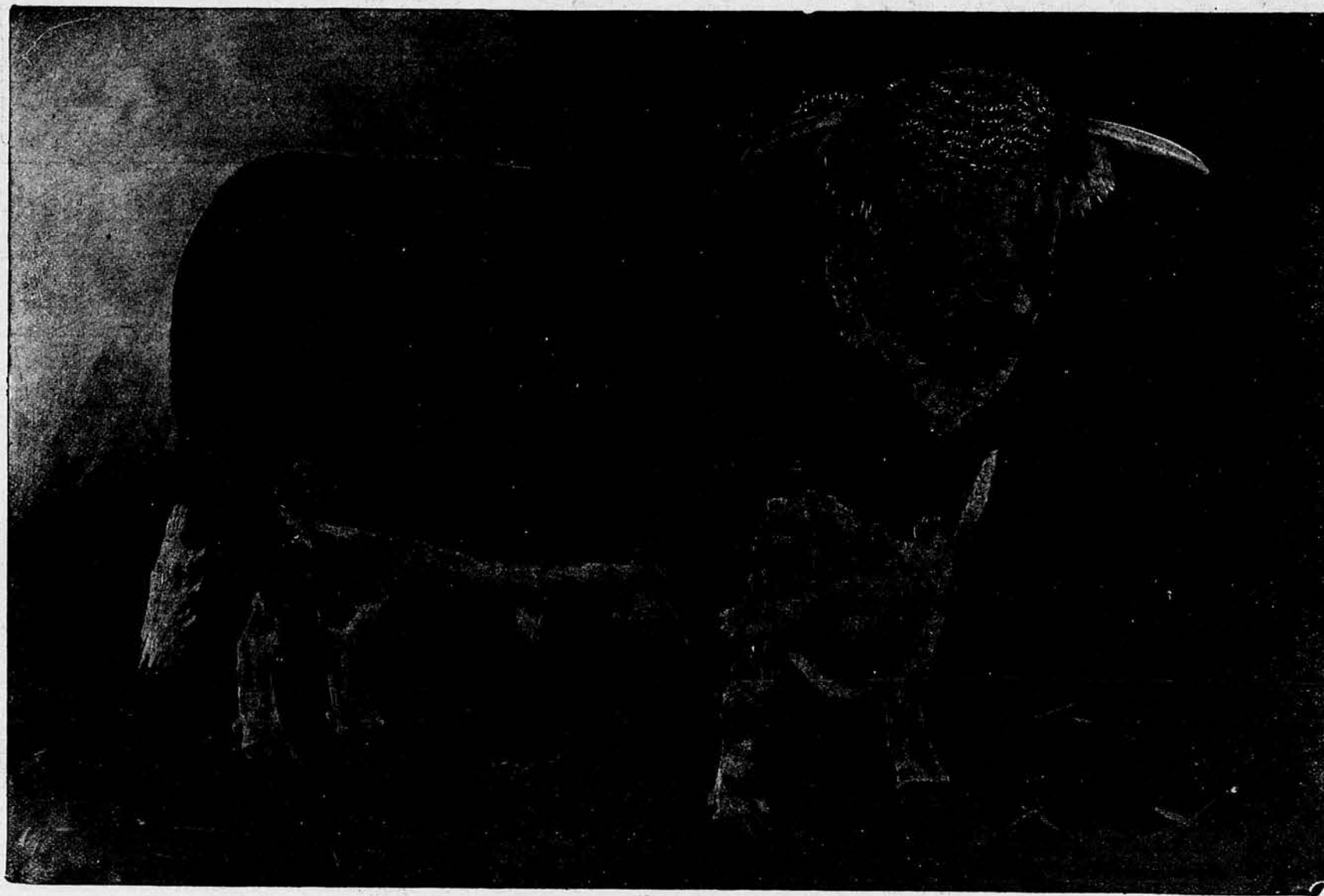
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CORRECTOR 48976.

AN OFFERING UNPRECEDENTED IN CHARACTER AND ANCESTRY

The death of my bulls Improver, Checkmate and Thickflesh compels a material reduction in my herd and I will therefore part with, to the public, seventy-five head of cattle which have hitherto been held wholly beyond price, as they constitute the material on which I have been relying to enlarge and improve the Weavergrace herd. I am reserving only the older matrons and the youngest calves as the basis on which (with the aid of Corrector and sons of Corrector and Improver) to build up a new herd. This offering involves the sacrifice of the best female produce of my herd for the past five years.

Thirty-one cows and heifers by Corrector, proved by sale and show ring records, the greatest Hereford sire. Eight daughters of Improver, whose progeny has demonstrated him the most conspicuous success on record in selecting a great bull to follow a great bull. Also cows and heifers by the \$5,000 Thickset, Sir Comewell, Hesiod 2d, Earl of Shadeland 22d, Kansas Lad, Eureka, Shadeland Dean and the great English sire Gold Box. The cream of my breeding at Weavergrace during half a decade and eight of the choicest English-bred cows from the Nave and Armour importations are included in this reduction sale.

Show cattle of international fame will be sold in Lady Charming, Pure Gold, Benison, Benefice, Lady Brenda, Lustre, Sunflower 2d, Imp. Rafia, Imp. New Year's Gift, Florimel, Woodmaid, Nanette, Lady Coral, Gladys, Georgiana, Galatea, Clarissima, Heartsease, and Princess Pearl. The females have calves at foot or are in calf by Corrector or Improver. History will be vainly searched for such a sacrifice of the treasures of a breeder's herd as is represented by this consignment.

In order that all tastes and pocketbooks may be suited at the first Chicago offering under the auspices of the National Hereford Exchange I have accepted contributions from the following named breeders: H. D. Smith, Compton, Que.; John I. Body, Woodland, Ill.; Geo. P. Henry, Goodenow, Ill.; E. Buckles, Lake Fork, Ill.; James Paul, Patch Grove, Wis.; M. H. Longhead, West Liberty, Mo.; Thos. E. McCarthy, Princeville, Ill.; Gilbert Mason, Wheeler, Ill.; H. F. Schnelker, New Haven, Ind.; Benjamin Edwards, Fisk, Wis.; Norton & Campbell, Maple Grove, Mich.; Robt. Turnbull, La-prairie Center, Ill.; Henry Ley, Clay City, Ind.; James McWilliams & Sons, Galveston, Ind.; E. C. Woolsey, Gibson, Ill.; C. A. Burghoefer, Lasalle, Ill.

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T. F. B. SOTHAM, MANAGER **CHILLICOTHE, MISSOURI.**
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Summer Feed for the Dairy Cow.

(Continued from page 303.)

months of summer he can maintain a continuous flow of milk, and as a result a continuous stream of prosperity to which other States and sections are strangers. The necessity of maintaining fertility will drive you to a better rotation and some form of stock-farming, and none of these pay the man with growing sons as well as dairying on up-to-date lines.

Therefore, the solution of the problem of summer feed for the dairy-cow is vitally connected with the future prosperity of your great and growing State.

Prize Examination of Skimming-Station Operators.

Following are the questions asked the contestants for the prizes in the skimming-station-operator contest. There were six entries, five contestants. The first prize of \$10 was won by H. H. Shumway, Auburn; the second, of \$5, by S. D. Praeger, White City. The examination was conducted by W. H. McKinstry, of Topeka.

- 1—To what extent may a spindle be worn before it is unfit for use?
- 2—What are the three most important points in operating a separator for perfect work?
- 3—How would you know if the eccentric had slipped on your engine?
- 4—What remedy would you suggest for an engine that is using too much steam?
- 5—With a vertical boiler how would you find a leaky flue?
- 6—What would be the result of a continued leaky hand-plate?
- 7—What effect will filling with alkali water have on reading of Babcock test?
- 8—Describe your method of making a herd test for a patron?
- 9—What would you do to increase your patronage where sentiment of community was against you? How would you proceed to change sentiment?
- 10—How would you form a milk and cream route? And if cream is partially churned when delivered, state your remedy.

Premiums for Dairy Students.

The creamerymen of Kansas contributed a sum amounting to about \$30 which will be divided equally into prizes for four contests among the dairy students at Kansas Dairy School, which contests are in butter-making, butter-scoring, judging dairy stock and skimming-station management. This money was expended in the purchase of books on dairy subjects to be used as prizes. The examination questions asked on skimming-station management were as follows:

1. State a few of the most important duties of a skimming-station operator.
2. What would you do if you were half through separating and a flue blew out of your boiler? How would you finish your separating without sending any milk home?
3. How much coal would you burn to separate 5,000 pounds of milk, pasteurize the skim-milk, and pasteurize and cool the cream on a twelve horse-power boiler?
4. What is the best method you have in caring for your separator? Also what instructions would you give the farmers in the care and handling of their machines to get the best results?
5. What is the object in pasteurizing cream and skim-milk?
6. Would you or would you not operate all stations on Sundays, where they have a fair run of milk in the summer? Give reasons.
7. State your best method of handling a patron who is a chronic kicker.
8. State how you take and care for your composite milk and cream samples.
9. What are your best instructions to the farmers for the care of milk while in their charge.
10. How would you convince a patron that he was wrong if his milk showed 3.6 to 4 per cent butter-fat per 100 pounds and he claimed to have churned five pounds of butter from the same milk?

The winners in this contest were: First, P. W. Keys; second, R. L. Paton; third, C. F. Eldridge; fourth, C. F. Thulstrup.

The stock-judging contest was held in the show barn with the following named cows in the ring. As this contest is based upon the present appearance of the animal, and as it is planned to award other

Name.	Post-office.	County.	Name of Cow.	Age.	Fresh.
J. W. Bigger.....	North Topeka.	Shawnee.....	Cowslip.....	7 years.....	Nov. 3, '01.
E. C. Cowles.....	Sibley.....	Douglas.....	Haster.....	6 years.....	Dec. 10, '01.
J. W. Cunningham.....	Meriden.....	Jefferson.....	Rose of Cunningham.....	5 years.....	Jan. 28, '02.
M. L. Dickson.....	Edgerton.....	Johnson.....	Clover Leaf.....	8 years.....	Jan. 12, '02.
A. H. Diehl.....	Chapman.....	Dickinson.....	Molly.....	7 years.....	Jan. 20, '02.
C. Elssasser.....	Industry.....	Clay.....	Rose of Industry.....	7 years.....	Jan. 15, '02.
S. A. Johnson.....	Cleveland.....	Kingman.....	Daisy Bell.....	6 years.....	Mar., '02.
C. C. Lewis.....	Ottawa.....	Franklin.....	Floss.....	6 years.....	Oct., '02.
G. W. Priest.....	Meriden.....	Shawnee.....	May Queen.....	5 years.....	Dec. 25, '01.

*Post-office, Jefferson County; farm, Shawnee County.

premiums next year based upon the actual performance of the cows, the full details in regard to the animals are given here.

The winners in this contest were C. A. Pears and C. T. Bull, who tied on first; W. C. DeSelus, second, and J. W. Bigger and T. E. McClellan, who tied for third.

In the butter-scoring contest M. W.

Wheeler won first; S. Remington, second, and J. O. Ambler, third.

In butter-making W. H. Howard won first; Philip Leiser and Arthur Goatley tied for second; Gustave Eastman, third, and J. A. Ambler, fourth.

Prof. Otis presented the prizes to the winners in a very happy speech which will leave its impress upon the minds of all who heard it for many years.

The Butter- and Cheese-makers' Contest.

ASSOCIATION PREMIUM LIST.

Creamery Butter-makers.—To the maker of the highest scoring creamery butter, silver cup, \$55. This handsome silver cup is competed for annually, and when won by any butter-maker three consecutive times it becomes his individual property. This cup was purchased with a fund contributed by creamerymen as follows: E. C. Lewellen, Newton; Schrock Bros., Yoder; C. F. Armstrong, Clyde; Beatrice Creamery Company, Lincoln; F. H. Teeters, Ottawa; A. L. Goble, Riley; Belle Springs Creamery Company, Abilene; Continental Creamery Company, Topeka; A. G. Eby, Enterprise; Gregory Creamery Company, Ottawa.

To the maker of the highest scoring butter, also, \$10.

To the maker of the second highest scoring butter, \$5.

A diploma will be given to all butter-makers scoring 93 or above.

Station-operators' Class.—Station-operator standing highest, \$10.

Station-operator standing second highest, \$5.

Cheese-makers.—To maker highest scoring cheese, \$10.

To maker second highest scoring cheese, \$5.

All prizes this year were cash prizes, except the silver cup. Martin Schadt, of Blue Mound, was the holder of the silver cup. He won it at the Topeka meeting last year on a score of 97½.

SCORES IN BUTTER-MAKING.

F. A. LEIGHTON, JUDGE.

Martin Schadt, Blue Mound, Kans.....	95
J. R. Lewellen, Sedgwick, Kans.....	96
C. E. Kelsey, Richmond, Kans.....	85
Chas. C. Carroll, Blue Mound, Kans.....	94½
G. L. Zirkle, Peabody, Kans.....	93
J. R. Cates, Burden, Kans.....	89½
W. W. Alspaugh, Floral, Kans.....	88
Dell Morning, Parsons, Kans.....	89
S. W. Houck, Newton, Kans.....	91
J. L. Morrison, Chanute, Kans.....	90½
D. S. Tweed, Chanute, Kans.....	95½
W. S. Boyd, Paola, Kans.....	90
E. H. Skaggs, Tonganoxie, Kans.....	93½
W. C. Wolcott, Tonganoxie, Kans.....	92
M. B. Weaver, Harper, Kans.....	91
Clark Mansfield, Topeka, Kans.....	97½
L. Larson, Topeka, Kans.....	98
A. Jensen, Topeka, Kans.....	97½
R. C. Nalley, Topeka, Kans.....	97½
Chas. L. Dille, Ottawa, Kans.....	94½
R. P. Challander, Ottawa, Kans.....	92½
P. G. Hoffman, Salina, Kans.....	90
R. H. Graham, Salina, Kans.....	91½
John E. Engle, Junction City, Kans.....	95½
Independence Creamery Company, Independence, Kans.....	85½
Jas. Cheney, Great Bend, Kans.....	96
G. M. Limbocker, Great Bend, Kans.....	96
A. C. Tannehill, Council Grove, Kans.....	93
J. Mayer, Topeka, Kans.....	96
J. Finley, Topeka, Kans.....	97½
W. Flannery, Topeka, Kans.....	96½
Gabriel Acid, Topeka, Kans.....	97
Aagie Vind, Topeka, Kans.....	95½
N. H. Sheaks, Walton, Kans.....	88½
Geo. Passcock, Parsons, Kans.....	93
J. E. Musser, Abilene, Kans.....	93
D. Hall, Clarin, Kans.....	89

SCORES IN CHEESE-MAKING.

W. L. Souders, Melvern, Kans.....	94½
Osmer Upham, Neosho Rapids, Kans.....	93
John Compton, Carlton, Kans.....	92
W. H. Putnam, Herington, Kans.....	93
J. McFerran, Williamsburg, Kans.....	95
Joan Bull, Cimarron, Kans.....	91

Report of Committee on Resolutions.

The committee offered the following resolutions, which were adopted by the association:

Resolved, That we express our highest appreciation of the dairy school that has been established in connection with the Agricultural College at Manhattan, its efficient work, its thorough course, and its

general dissemination of practical dairy knowledge.

Resolved, That it is the sense of this association that a creditable display of Kansas dairy products be made at the St. Louis World's Fair to be held during 1903, and that early steps be taken by the executive committee to create an interest among Kansas dairymen and also cooperate with other interests with a view of securing an appropriation from our State Legislature for the purpose of making such exhibit.

Resolved, That we hereby tender our thanks to Chas. Y. Knight and the National Dairy Union for their untiring efforts for and in behalf of oleomargarine legislation now pending in our National Congress at Washington, D. C.

Resolved, That we endorse the applica-

tion of E. Sudendorf, secretary of the National Creamery Butter-makers' Association, for superintendent of dairy exhibits at the St. Louis World's Fair.

Resolved, That this association express its sincere thanks to the president and faculty of the Kansas State Agricultural College for the hospitality shown our members during their attendance at the convention, and especially the farm department in rendering us such valuable assistance in the various features of the program.

Resolved, That we recognize that the success of this convention is largely due to the efficient and untiring efforts of our officers in arranging such instructive proceedings, and we hereby tender them our thanks.

Resolved, That we tender our thanks to Major Alvord, Professor McKay Haecker, Dr. Henry Wallace, and Mr. Cobb, for their kindness in favoring us with their presence and very instructive address.

Respectfully submitted,

J. E. NISSLEY,
H. M. BRANDT,
A. L. GOBLE,

Committee.

Resolutions Adopted.

Resolved, That the Kansas State Dairy Association now in session earnestly urge the Kansas Senators to vote for the anti-oleomargarine bill now before the Senate, and that we also urge them to use their utmost endeavors to induce fellow members of the Senate to vote for this bill.

Resolved, That the secretary of this association be directed to telegraph immediately to each of our Senators.

Adopted unanimously.

The following resolution was introduced at the business session on Friday afternoon, and adopted:

Resolved, That this association recommend the restoration to the oleo bill now pending in the United States Senate, the provision relating to renovated butter substantially as passed by the House of Representatives. It is believed that this will strengthen and perfect the proposed law, completing the protection of consumers against deception and fraud, and enforcing among the different dairy interests the same principles of fair dealing which they demand on the part of makers and dealers in oleomargarine.

Dairy Association Notes.

Is it not a little remarkable that all the men who have filled the professorship of agriculture at the Kansas Agricultural College have had red whiskers?

Mr. F. L. Huxtable, superintendent of the Wichita branch of the Continental Creamery Company, was on the grounds with his usual amount of energy and push.

J. McFerran, of Williamsburg, carried off the first prize as a cheese-maker, and W. L. Sanders, of Melvern, the second, in a class of six. F. A. Leighton was judge in the contest.

Instead of the usual badge, this year's symbol of membership in the Dairy Association is a handsome button, with a picture of a Holstein-Friesian cow being milked on the left side by a dairy-maid.

In the cattle-judging contests there were 390 students and an unknown number of visitors who took part, while the large numbers of spectators helped to fill the

300,000

Machines in Use.

Ten Times All Other Makes Combined.

The Standard of All That's Best in Dairying in Every Country in the World.

That's the history of the

De Laval
Cream Separators

Send for new "20th Century" catalogue.

THE DE LAVAL SEPARATOR CO.

RANDOLPH & CANAL STS.,
CHICAGO.
1102 ARCH STREET,
PHILADELPHIA.
103 & 105 MISSION ST.,
SAN FRANCISCO.

General Offices:

74 CORTLANDT STREET,
NEW YORK.

327 COMMISSIONERS ST.,
MONTREAL.
75 & 77 YORK STREET,
TORONTO.
248 McDONNELL AVENUE
WINNIPEG.

judging amphitheatre to its utmost capacity.

Prof. D. H. Otis is a hustler. He is one of the kind that "arrives." In addition to the duties of an unusually full week he edited the Daily Industrialist during the meeting of the dairy association, and did it well, too.

Mr. C. C. Lewis, of Ottawa, Kans., the man who realized \$65 from each cow in his herd, was on the grounds lending his assistance in making the association a success, Mr. Lewis is assistant secretary of the association.

The Industrialist printed a special souvenir number for the benefit of the association. It is filled with interesting matter and illustrated with cuts of a number of representative dairy animals. This number is worth keeping.

The United States separator man won his way to the hearts of the girls by distributing souvenirs, which had much the appearance of a \$20 gold piece, but which were in reality reduced replicas of a gold medal won by them at the Pan-American Exposition.

The remarkable thing about this contest is that in a class of 47 entries the Continental Creamery Company, of Topeka, should win the highest seven scores. Does not that speak volumes for skill, ability, system, and business management? Mr. L. Larson of that company will own the silver cup for at least a year.

The dairy department is indebted to the following manufacturers for loans: A. Jensen, Topeka, a milk-heater, a cream pasteurizer, and a cream cooler; Sharpless Company, Chicago, a test-bottle shaker and an "all over" pound butter printer; and Sturges, Cornish & Burns, St. Paul, a Boyd cream ripener.

The Hiawatha Incubator, now advertised in another column, is manufactured by an old Agricultural College boy at Hiawatha, Kans., and it has now been placed on trial at the college poultry-house where its superior merits in heating the corners first leave no room to doubt that it will show up strongly in competition.

The college Y. M. C. A. certainly demonstrated its usefulness during the dairy meeting by giving information and help to everybody. They had a booth in the main hall and an active corps of attendants who were willing to go to any amount of trouble to accommodate visitors and make them feel at home; and they succeeded, too.

The college greenhouses are always a thing of beauty and a joy all winter. This is the only institution of its kind in the United States where young lady students are required to take floriculture as a practical part of their training, and under the efficient supervision of Mr. Baxter, both the class and the plants are doing their best, and what is more, their "best" is the best.

After the students' stock-judging contest the writer picked up a score-card at random out of each of three packages representing three different breeds in order to see how near the student and the judge would agree. On the Jersey cow Marigold Tapestry the judge scored 94½, student 91; Guernsey cow, Miss Tidy, judge, 80½, stu-

(Continued on page 314.)

\$50

That it's a SHARPLES Cream Separator

guarantees superiority to those who know, and others should write for catalogue No. 155.

Very valuable treatise on "Business Dairying" free for the asking.

Sharple's Co., P. M. Sharple's, Chicago, Ill. West Chester, Pa.

QUALITY AND QUANTITY.

The High Grade of Butter made by
The Continental Creamery Company

was forcibly demonstrated at Manhattan during the late meeting of the Kansas State Dairy Association. Forty-seven tubs of butter were offered in competition for the prize cup from forty-seven Kansas butter-makers. The seven highest scores were awarded to butter-makers of **THE CONTINENTAL CREAMERY COMPANY.**

The high grade of butter made by this company bespeaks much for the dairy interests of Kansas.

Economy in churning and marketing butter means higher prices for butter fat. The company is anxious to increase its milk receipts; it wants cream from every farmer and dairyman in Kansas, Oklahoma, and Colorado.

The company offers 2 1-2 cents below New York top butter quotations for butter fat f. o. b. shipping point.

Will be glad to assist local companies or individuals in promoting skimming stations.

Correspondence with individual shippers solicited.

If you haven't been getting a Continental Milk Check in the past, make arrangements to get one every month the coming summer. It beats getting money from home.

—THE—
Continental Creamery Co.
TOPEKA....KANSAS.

More Money From the Milch Cows.

✿ ✿ ✿ Less Labor for the Farmer. ✿ ✿ ✿

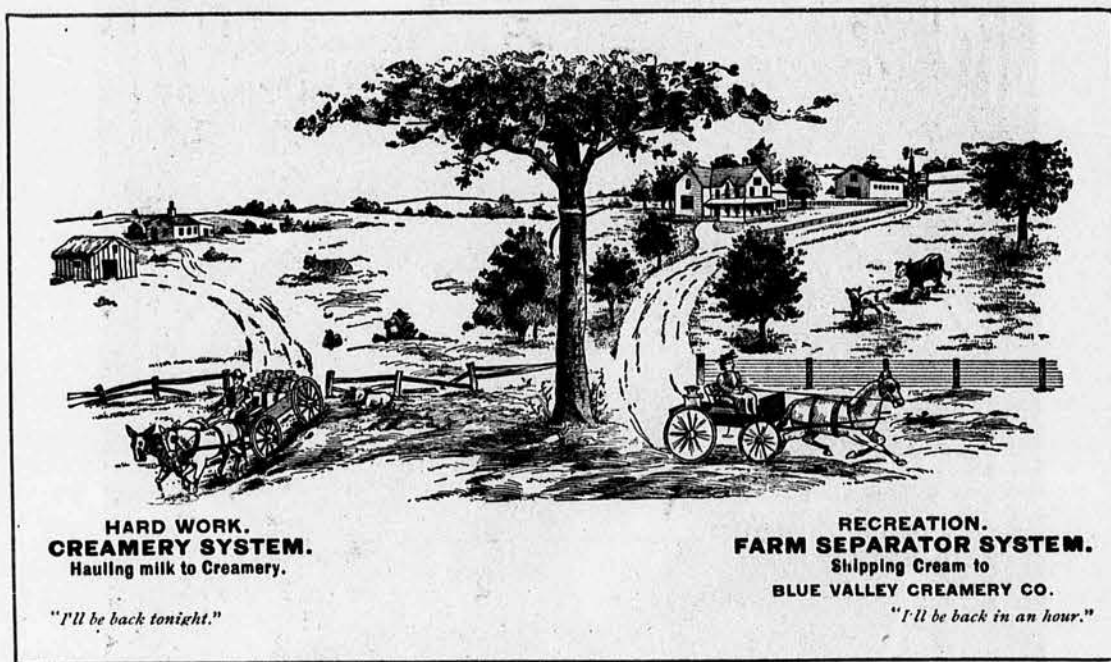
That's our whole story in a nutshell. If you are interested in making more money with less hard work and worry and fuss and bother, you'll be interested in our proposition.

We Want to Buy Your Cream.

We'll pay you a higher price for it than your local creamery can afford to pay. We'll give you a good deal less trouble and hard work in getting it to us than you now take with your milk.

We'll leave with you skim milk of double the value of that you are now getting from your creamery.

Isn't that worth looking into?



OUR PROPOSITION.

We are the pioneers of the farm separator system. We have demonstrated to the satisfaction of hundreds and hundreds of farmers and dairymen, that it is the only economical, modern, money-making way of handling milk. It enables us to pay a higher price for butter fat; it enables us to make better butter, and to get a higher price for it; it enables the farmer to make more money with less work, and less waste of time, and it gives the farmer a better quality of skim milk for feeding purposes.

We want to buy cream from farmers anywhere within a radius of 500 miles of St. Joseph. We guarantee to pay above the ruling prices paid by local creameries. But it must be cream from a Centrifugal Farm Separator, because farm separator cream is better cream than cream separated in any other way. If you have no separator we will sell you one—the best in the world—at a fair price, and allow you to pay for it with THE EXTRA PROFITS you make by adopting the farm separator system. We will install an Empire Hand Separator for you, enabling you to separate the milk on the farm as soon as milked, giving you pure, sweet, warm skim milk for feeding purposes.

You take the cream to your railway station two or three times a week, as necessary, and ship it to us on passenger train either by express or baggage. We furnish seals and tags free of charge. You ship in your own can. We receive it at this end and return your empty cans the same

day, without any expense to you. Each can of cream is carefully weighed and samples taken for testing.

We send you a statement each week and a check in full payment for all cream shipped the first of each month.

It is the ideal way of conducting a dairy, because it lessens the work nearly one half—no heavy cans to lift and tug about—no wagon load of cans to scald and wash every day—no team and big wagon necessary to haul the milk every day—no constant kick and growl from the milk weigher. You simply have your cream to care for; you need not go to the station with it more than half as often as with whole milk, and your daughter or one of the younger boys can take it, instead of a strong man. Of great importance, too, is the increased value of the skim milk. Sweet skim milk retaining the natural animal heat, is worth twice as much as the stuff you get from the vat at the creamery or the skimming station. The increased growth of calves and pigs alone will soon pay for your separator, to say nothing of your other savings.

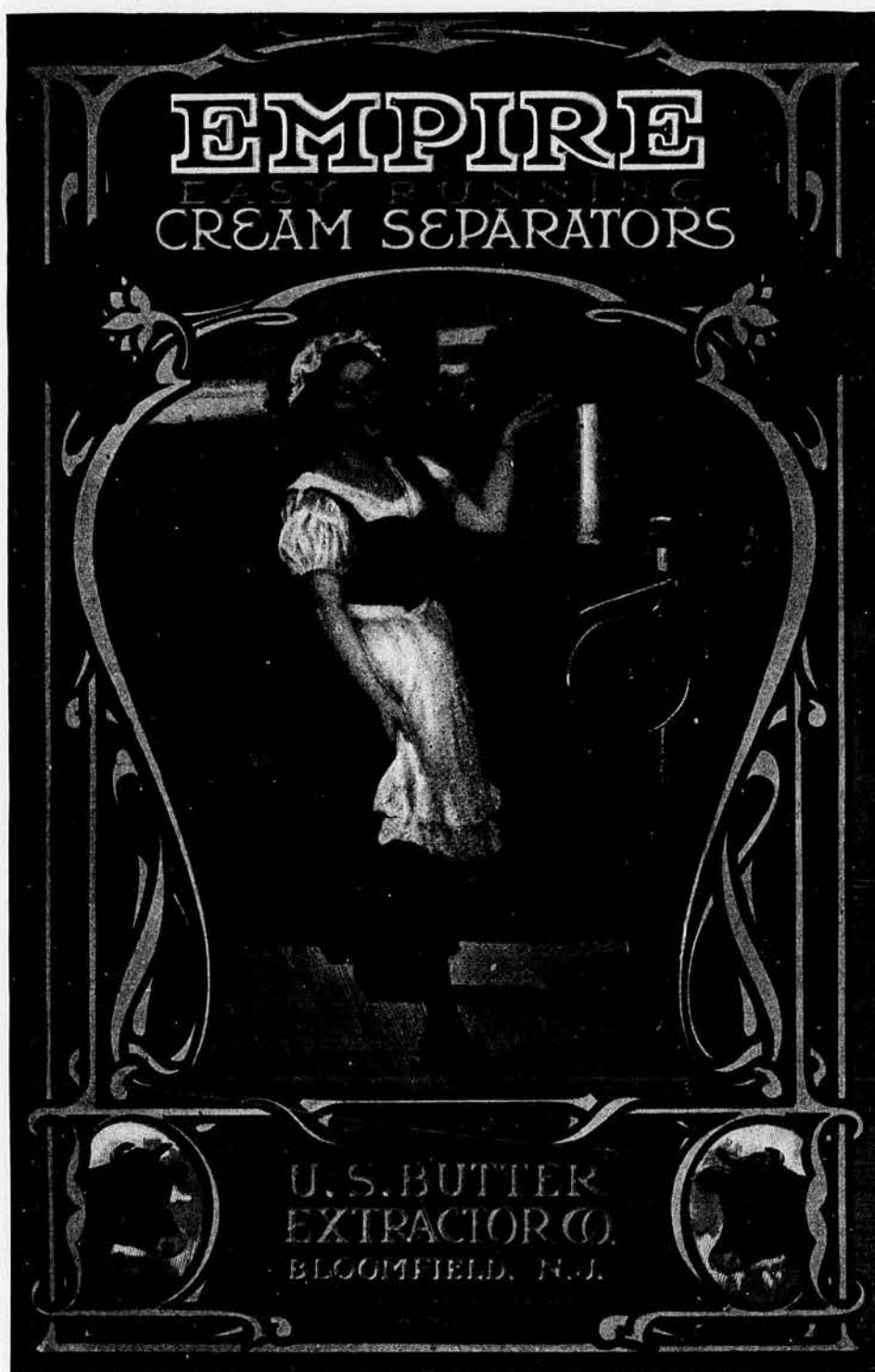
When you come to think of it, it's just about as sensible to haul your milk four or five miles to have it separated, and then haul the skim milk back home, as it would be to haul your wheat to town to have it threshed, and then haul the straw back home. In fact, it's worse, for you'd only have to take the wheat once a year while the milk bother is a daily nuisance. Isn't it time to stop it? We show you the way. Are you with us?

Blue Valley Creamery Company,

ST. JOSEPH

MISSOURI.

A NEW BOOK FOR EVERY COW OWNER



There isn't a whole encyclopedia of it, but it's full of cow-sense from start to finish.
It tells about the hand separator method of conducting the farm dairy.
It shows how the farmer and the farmer's wife can lessen the hard work and drudgery of caring for milk and at the same time **INCREASE** their profits.
It's a handsome book, attractively illustrated with a cover from a painting in water colors by a famous artist.

And It's Free.

Every reader of this paper is entitled to a copy.
Send us your address and we will do the rest.

The United States Butter Extractor Co.,
Bloomfield, N. J.

Why We Recommend THE EMPIRE.

The Empire Easy Running Cream Separator with its light bowl, its few parts, its safety clutch, and general simplicity of construction, has won instant recognition in every community in which it has been introduced as

The Simplest,
The Most Efficient,
The Most Economical,
Hand Separator for the Farmer.



The Empire Easy Running Cream Separator

It is this because it is built especially for him. It is not a make-shift designed to fit in places where we cannot sell larger machines.

It is designed with special reference to the needs of the man or woman who wants a machine which **turns by hand**.

While it **may be** turned by power, if desired, it is light enough and still rapid enough in its work, to be perfectly adapted to hand power.

In this, it is unique. Most other manufacturers with heavy, complicated machines, with many intricate parts, will sell you a hand machine, but will advise you to run them by power.

The Light and Easy running Empire is a **hand power** separator.

Its lightness, efficiency and economy are the result of two things:

It is built on the right plan.

It is built in the right way.

A comparison of the Empire with any other farm separator made, emphasizes its extreme simplicity and its very few parts. An examination of its construction will convince you that it is built on the right plan.

A visit to the Empire factory would convince you that it is built in the **right way**.

The factory of the United States Butter Extractor Company in Bloomfield, N. J., is one of the model factories of the United States—of the whole world for that matter.

It is equipped with specially designed, modern machinery for turning out machines **perfect** in every part, at the least expense.

It is operated in every department by expert mechanics who have spent their lives in learning to do one thing well.

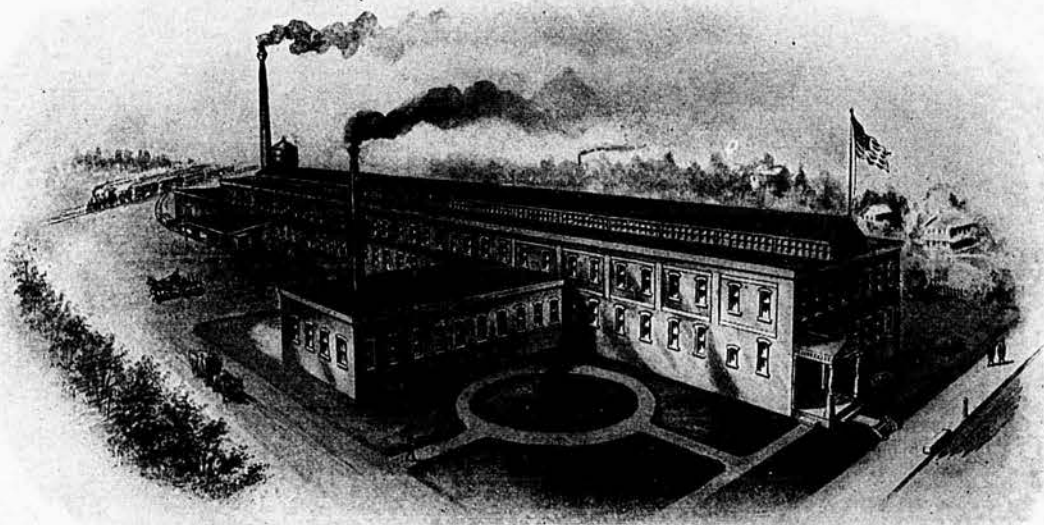
Every screw, every piece of metal that goes into the Empire passes under the most rigid and critical inspection; nothing but the best material is used; nothing but the best workmanship is tolerated.

In this way, a machine correct in every detail is obtained.

But that is not all.

After the machine is put together, to make assurance doubly sure, it is given a series of five distinct tests—under the watchful care of experts to guard against any possible oversight, and to make certain that every part runs absolutely true.

When an Empire leaves the factory, it is as nearly a perfect piece of mechanism as it is possible to produce. This care, this scrupulous inspection, has had much to do with the Empire's phenomenal success.



Factory of the United States Butter Extractor Company, Bloomfield, N. J.

POINTS TO CONSIDER IN BUYING A SEPARATOR.

1. Will it skim clean?

There is no closer skimmer than the Empire.

2. Will it be possible for me to operate it by hand?

The Empire with its Light Bowl and Few Parts is unquestionably the Easiest running of all farm separators.

3. Will it save time?

Some separators turn so hard and are so difficult to keep clean, that they cause more work and waste more time than they save. The simple bowl of the Empire turns easily, separates rapidly, and has nothing about it difficult to wash. A few minutes are sufficient for a thorough cleaning of it.

4. Does it always need repairs?

There is nothing about the Empire to get out of order. It is the simplest of all separators—no complicated parts—no delicate pieces. What few repairs it should need are easily obtained and cost but little.

5. Has it good backing?

The Empire is manufactured by a firm which guarantees it in every way, and is amply able to make good every promise made for it. It is not an untried, unheard of, here-to-day-and-gone-to-morrow machine, but one which has won notable triumphs in every dairy section, and which is here to stay.

The Empire is the Safe Machine for the farmer. It meets his requirements in every particular. It is a saver of time and labor, and a maker of money for him. Send for our book—or better yet, get an Empire and test its work for yourself.

More Money From the Milch Cows.

Less Labor for the Farmer.

THE Farm Separator System is an unqualified success. Hundreds of Kansas and Missouri farmers say so. They know because they have tried it. Ask any farmer who is shipping cream to the Blue Valley Creamery Co., at St. Joseph, and he'll tell you that he is getting more money from his herd, more satisfaction all around, and that the drudgery and hard work has been knocked out of the business. We'll sell you a cream separator which will enable you to do the same thing.

THE EMPIRE EASY RUNNING SEPARATOR is the easiest to turn, the easiest to clean, the easiest to keep in repair, and the most economical hand separator on earth. And this is the reason why: It has the lightest and simplest bowl; it is the freest from complicated and intricate parts; it gives the cream several distinct separations.

THE EMPIRE BOWL.

The success and efficiency of a separator depends more than anything else upon the bowl in which the separation takes place. The rest of the machine is merely a support for the bowl, and a mechanism for turning it. We believe after a careful study of all separators on the market, that the Empire has **THE PERFECT BOWL**. It is small in diameter, (you can set it inside the average bowl of the same capacity). The interior device is simply a series of perforated cones, with perfectly smooth surfaces, and therefore is easily kept clean. The milk passes through small perforations in the successive cones, and in each is given a distinct separation, so that there is no possibility of any butter fat being left in the milk. The bowl being small and light, makes possible a light machine. A light machine makes possible an easy turning machine—both of which the Empire is.

It is the safest separator. The Empire Safety Clutch instantly stops the mechanism of the machine (allowing the bowl alone to revolve) at the pleasure of the operator. Should the clothing, or an arm catch in the gear, the machine stops immediately.

These are only a few of the reasons why we claim that the Empire Separator is the easiest, the simplest, the best of all separators.

Our Offer

We repeat that there is not an owner of three or more milch cows within a radius of 500 miles of St. Joe, who cannot increase his profits and lessen his hard work by buying an Empire Hand Separator, and shipping his cream to us.

Write for further particulars.

The Empire Catalogue is an extremely handsome book, full of good cow sense.

We'll send you a copy if you'll ask for it.

Who we are.

The Blue Valley Creamery Co., of St. Joseph, Mo.,—Pioneers of the Farm Separator System—is a solid, substantial concern amply able to make good every promise made its patrons.

Its officers are:

HOUSTON WYETH, President, President Wyeth Hardware Co., and Vice-President National Bank of St. Joe.

J. A. WALKER, Vice-Pres. and Mgr., who has had 17 years experience in the creamery business.

L. C. HAMILTON, Treasurer; Manager Artesian Ice and Cold Storage Company.

W. W. MARPLE, Supt. of Territory; formerly with the Beatrice Creamery Company.

Blue Valley Butter has won a most enviable reputation in the markets of the country—a reputation which makes it always command a better than the top market price.

We won the silver cup at the State Dairy Association Convention held at Palmyra, Nov. 7-9, 1901, Blue Valley Butter (made from farm separator cream) scoring 97.

You will find our quotations for butter fat in the St. Joseph papers, daily and weekly.

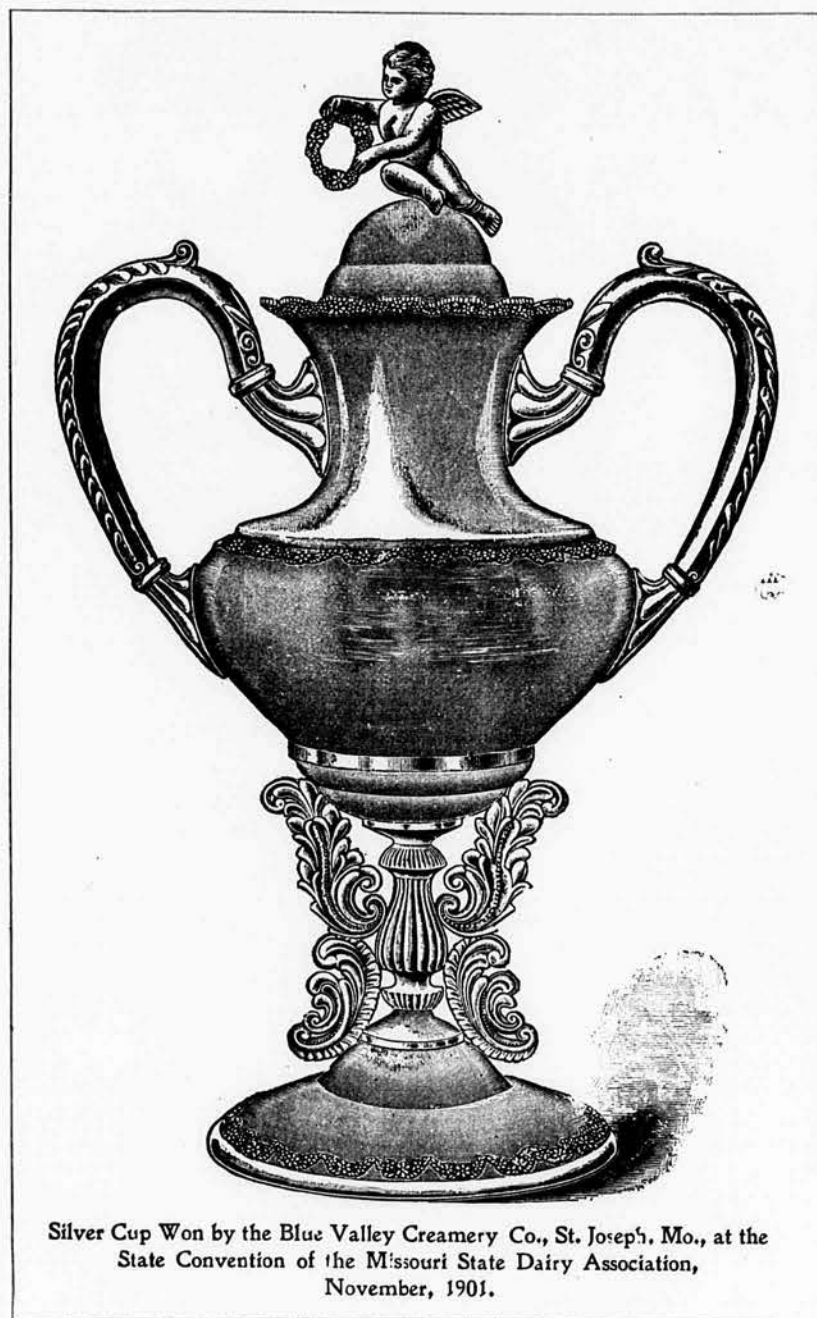
We base the price paid our patrons for butter fat upon the price received by us for butter. Often the price received for our butter is correspondingly higher than Eastern markets are quoted, but never lower. We change the price on butter fat when the market on butter changes. We paid to our patrons during January, 23 cts. per lb., and from Feb. 1st to Feb. 9th, 24 cts. per lb. From Feb. 9th, to Feb. 18th 26 cts. On Feb. 18th we quoted a price of 28 cents, which was still in force when this sheet went to press. Write to us and we will secure for you rates of transportation so that the

cost of shipping us your butter fat in the cream need not be more than:

$\frac{1}{2}$ c per lb. of butter fat for a distance of 50 miles.	100	200	300	400	500
1c	"	"	"	"	"
1 $\frac{1}{2}$ c	"	"	"	"	"
1 $\frac{1}{2}$ c	"	"	"	"	"
1 $\frac{1}{2}$ c	"	"	"	"	"
2c	"	"	"	"	"

We know that we can add to the income of every cow-owner within 500 miles of St. Joe, if we are only given the chance.

What do you say? Do you want to lessen the fuss and bother of caring for milk and at the same time add to your profits? It is up to you. Let us hear from you.



Silver Cup Won by the Blue Valley Creamery Co., St. Joseph, Mo., at the State Convention of the Missouri State Dairy Association, November, 1901.

Blue Valley Creamery Company,

ST. JOSEPH,

MISSOURI.

Brain Markets.

Conducted by James Butler, Secretary of the Farmers' Co-operative Grain and Live Stock Association.

"The human race is divided into two classes,—those who go ahead and do something, and those who sit still and say, why wasn't it done the other way."—Oliver W. Holmes.

The Farmers' Cooperative Grain and Live Stock Association.

REPORT OF THE HUTCHINSON MEETING.

A special meeting of the Farmers' Cooperative Grain and Live Stock Association was held at Hutchinson, Kans., March 4 and 5, and was well attended. There were more than three hundred stockholders and delegates present. The court-house was so crowded that many had to stand. All seemed to know what they had come for, and all had in view the purpose to make the Farmers' Cooperative Grain and Live Stock Association a grand success. Every speaker indicated his surprise at the work accomplished at so little expense. A more harmonious meeting of farmers never has been held in this State or anywhere. The stockholders believe firmly in the principles and plans of the central organization, and propose to make it a still greater success, extending it into new territory and further developing the purpose outlined in the plans.

An amendment to the by-laws was adopted changing the annual meeting from June to December. The other suggested amendments were debated, and the best feeling prevailed during the entire discussion. All seemed to understand that the greatest object of the special meeting was to get the people together and get an exchange of ideas, become better acquainted and more familiar with the work in the different localities and the work to be accomplished by the central association in the future.

A plan was adopted by the stockholders authorizing the directors to make contracts with local associations and independent shippers to broaden the work of the association rendering assistance to the local associations and outlining the work that each is to do. This, no doubt, will be the means of binding together a greater number of associations and shippers than could have been brought into harmony without the contract plan.

The stockholders present were as a unit regarding the importance of the central association and the necessity for cooperation through a central office of all the local interests in the State. All could plainly see that with a central organization the greatest good could be accomplished and without it the locals would ultimately end in failure.

The address of President Bucklin, showing the necessity for a central organization and the work to be accomplished by it, was enthusiastically received and generously applauded. He presented the necessity for a central association, reviewed the very satisfactory results already attained, and presented the plans of the future work of the central association in a most convincing manner. He showed that a central organization is necessary to the success and permanency of the movement and that all history and experience prove that local efforts of that character without a central association were short-lived and ended in disappointment. He urged unity of action and cooperation between the locals and the central association. In proof of the value of the central organization, he pointed to the fact that already there had been a saving of fully a million and a half dollars in enhanced prices received for grain by the farmers in this State in the past year. This was conceded to be a very conservative estimate. He called attention to the great number of organizations that had been effected through the direct influence of the central organization, and to the cost of effecting the same, showed that it was a mere pittance compared with the benefits resulting therefrom, and urged activity in organizing new associations and developing and strengthening the old ones. He also laid particular stress upon the necessity for loyalty of the members to their local associations and of the locals to the central association, for in that way only could the best results be obtained. He advised that liberal support be given the organizing department of the central association, believing that money judiciously used now would bring abundant returns in the near future. He urged the necessity of prompt action along those lines, in order to establish as many organizations as possible before the coming harvest. He also called attention to the community of interests existing between the central association and the millers of the State, and hoped for a continuance of the same, and the development of still more friendly and closer relations in the future. In illustrating, Mr. Bucklin told of the farmer and the calf. He said: "You take a calf between your legs, take its head in your hands, push its nose down in the bucket, and it rears back from the substance that sustains its life. Just so with the farmer when he refuses to support the central organization."

The open meeting held on the evening of the 4th, in the magnificent theater, was well attended, and a program was carried out which met with the approval and endorsement of every one present. This meeting greatly assisted the movement, for the general outline of the plan of the association was fairly discussed by the speakers, each taking a different phase.

Governor Stanley made a splendid talk,

the substance of which is given below. We are sorry that we are unable to produce the entire speech, but it was made extemporaneously and we had no stenographer present. If you want to become familiar with the movement, do not fail to read and weigh carefully the magnificent and able manner in which the subjects were discussed at Hutchinson.

The way in which those speeches were received shows that farmers have awakened to their interest in this State, and determined to push forward the cause and conduct their own business on business lines. The meeting instilled new life into the cause and will result in pushing forward the work of organization in many localities where in the past organization has not been attempted. Many new associations will be formed as a result of this meeting in the next few months.

J. A. Souders, of Sedgwick County, made some very pertinent remarks, advising farmers to conform themselves strictly to business principles and not to be led away by sentiment. He also gave a very able and instructive address in the evening at the theater.

F. D. Hornbaker, Reno County, made an elegant plea for loyalty to the central association. C. B. Hoffman, Enterprise, presented in an able manner the plan which has been adopted by the management of the central association for handling the wheat of the local associations. Mr. Hoffman is thoroughly conversant with the grain and milling business, and there is no man in the State better qualified to suggest practical business methods than he. He also made a very able address at the theater in the evening.

Mr. J. M. Senter, State lecturer for the Farmers' Cooperative Grain and Live Stock Association, delivered a convincing address covering the origin and work of the association. Mr. Senter talked just what he believed, and his address was enthusiastically received by the audience. We regret very much that we are not able to produce it here, but it was an extemporaneous speech delivered without notes.

Solon Gray, Sterling; D. W. Warwich, Ellinwood; Dr. Bohrer, Lyons; Dr. McConnell, Morehead; A. P. Collins, Saline County; and many other speakers took active part in the discussion. Judge S. H. Allen rendered valuable service in his legal advice, and in his able presentation of matters pending before the convention.

The treatment received at the hands of the mayor of the city of Hutchinson and its citizens in furnishing an elegant theater for the evening meeting, securing the court house and commercial rooms for the meeting free of charge, showed the wide awake spirit of the Hutchinson people. Everything that the Hutchinson people could do to make the farmers visit a pleasant one was cheerfully done.

How to Build Elevators Where Lease Privileges Can Not Be Secured from Railroads.

EDWARD O'CONNOR.

In June, last year, the wheat-growers in the territory naturally tributary to St. John, Kans., after submitting for years to the unreasonable exactions of the grain-buyers at that point, resolved to establish some medium through which they could ship their own grain. The first idea was to form a joint stock company, build an elevator, and enter the race in ordinary competition with the other grain-buyers. This plan was soon abandoned as not likely to prove the best method of securing to each individual farmer the net price of his grain on the Kansas City market, or any other market, as far as he was concerned. An organization was effected and a charter secured. In our constitution and by-laws we followed no stereotyped form or beaten path, and it is probable that the instrument is about as original as any document that has been given to man since the formation of the Ten Commandments.

Three objective points were kept in view. First, to give to the particular man who raised wheat every cent there was in it. Second, to give to the stockholders who created the business their proportionate share of profits that might arise from purchase and sale of non-stockholder's grain. Third, to protect the organization against temporary competition that might be organized by the grain-buyers to freeze out our company.

The first two objects are covered by the following clauses in our by-laws:

10. Separate accounts shall be kept of the amount of grain purchased from stockholders and of the amount purchased from non-stockholders.

11. The cash excess of the selling price above the cost price of grain shall be disposed of as follows:

First.—All necessary expenses incurred shall be defrayed.

Second.—From excess remaining after necessary expenses are defrayed a dividend of not to exceed 6 per cent per annum shall be paid on the capital stock.

Third.—From the excess still remaining, a sum not to exceed 2 per cent of the paid up stock shall be set aside for an emergency fund, until such fund shall have reached the sum of \$500.

Fourth.—The net profits accruing from purchase and sale of non-stockholder's grain shall be divided among the stockholders in proportion to their stock, and the net profits accruing from stockholder's grain shall be divided among the stockholders in proportion to the number of bushels sold by each stockholder respectively for the period covering the time for which the dividend is made.

The third provision is common to all co-operative organizations and is necessary to their existence. It consists in paying some stated amount per bushel to the

organization for grain sold to other dealers.

The capacity of our elevator is about 16,000 bushels. Being unable to secure a lease on the right of way, the building stands forty-eight feet from the side-track on lots purchased for the purpose by the organization.

On first application for a site, the railroad promised to comply with our request. When we were ready to begin to build we requested the railroad people to send a representative to designate the location. We were then informed that we could not have a site, as in the opinion of the railroad company the facilities for handling grain at that point were ample.

I was appointed by our people to have a personal interview with the division superintendent. I wish to say here incidentally, that one of the finest wheat-growing regions, not, of course, a very large area, in Kansas, is found in the southern portion of Stafford County. I made a map of this section and gathering statistics showing that many thousand bushels of wheat naturally tributary to St. John and to the Santa Fe railroad, were hauled to Stafford, Iuka, and Pratt, and shipped on other roads. The vision of the Santa Fe people brightened, and they promised that we should have a site at once; indeed, they thanked me profusely for my exposition of existing conditions. The division superintendent started on his mission to give us a site, a few days subsequent to my interview, and in this city of salt—I was going to say sinners—because right here in the city of Hutchinson, a change came over the spirit of his dreams, and in his awakening he at once discovered that the facilities for shipping were all that could be desired at St. John, and that there was no possible chance for a site on the right of way.

He telegraphed, however, from Hutchinson, that he would see me later. He did, and informed me that if we wanted an elevator we must build it on our own ground and bear the expense of building a spur to it. In answer to an inquiry, he stated that about 250 or 300 feet of track would suit the purpose. Having secured the ground and being in readiness to begin building, we again requested him to come and see if the point selected would suit. He did not come, but on his request I sent him a plat of the location.

He wrote me that we would have to start our spur 1,180 feet down the track, to get the proper curve. We did not propose to build a trans-continental railroad, so I informed him that we would erect the building and spout the grain to cars on the side track. We were not only getting onto a few curves by this time, but we were getting mad.

I notified him of our intention. He then interposed the objection that the entire right of way to an interminable distance and for an indefinite period was leased to one of the grain-dealers at that point, and stated that we should obtain permission from that grain-dealer to erect a support for the spot. I stated that we would find some means of supporting the spot, when we reached that point in our work. If no other way could be found we would use a crane if the railroad company would graciously permit us to use the atmosphere above their right of way.

Our spot is sixty feet long, with a fall of about 39 degrees. It works just as well as if located by the track, and is entirely satisfactory. So all I have to say on the subject, is if you can not secure a site, just back up and spout, and the object animate or inanimate that can not spout, and that fluently, is not of Kansas.

Cooperation Will Win.

BRIEF REPORT OF GOV. W. E. STANLEY'S ADDRESS.

"I used to be acquainted with farming methods when I was a boy," the governor told the grain-growers, "but things have greatly changed since then. The whole business world is conducted along different lines now. We hear a great deal about combinations of capital, and trust, and such things. I can hardly think of a manufacturing industry which has not combination or cooperation behind it. Then we have labor unions, which are simply combinations of labor. But we have not any great combinations of farmers to any extent."

"The past year the farmers of Kansas—your people, or those whom you represent—produced \$195,000,000 worth of agricultural products. Just think of that immense sum. It grew out of the ground. During the same time the mineral products of Kansas, about which we hear so much, the coal, and the zinc, the salt, the lead, the oil, the natural gas, and all those things which make such a great stir in the State, amounted to only \$18,000,000. But the mineral industries are well organized."

"Now if the mineral industries of the State are organized to advance their interests, why should not the great agricultural interests of Kansas organize to secure the best markets and prices for their products?"

"An individual farmer can do very little by himself. Suppose a farmer has 5,000 bushels of wheat which he wishes to ship. What can he accomplish in the way of securing advantageous freight rates? Here is a line of elevators doing an immense business and all directed by a single man. Which one would the traffic-manager of a railroad rather deal with, the man with only 5,000 bushels, or the man with a long line of elevators? But suppose the farmers organize and designate one man to manage the marketing of their grain. The traffic-manager will then be just as glad to deal with him as with the line elevators man. That's one benefit of cooperation."



Lion Coffee

is 16 ounces of pure coffee to the pound. Coated Coffees are only about 14 ounces of coffee and two ounces of eggs, glue, etc., of no value to you, but money in the pocket of the roaster.

Governor Stanley warned the farmers to keep politics out of their organizations and get together on their common interests, to secure the best markets, best prices and best accommodations for their products.

The Necessity of Concentration.

SECRETARY JAMES BUTLER.

Without organization you are compelled to accept the price fixed by the dealers who have combined to insure their margin of profit by preventing competition. Your local organization avoids this difficulty, but you still have to solve the question of how to obtain the best price in the market. You are but one of hundreds of other local dealers having grain to send into the general market. You offer your grain in competition with each other, and in fact have little or nothing to do with establishing the price.

You need a general agent to represent all your local organizations in selling your output. If the general organization is authorized to speak for all the locals, it can then exert a legitimate influence on the market price. It can say at what price it will sell, leaving the option to the buyer to accept or reject the offer. Of course, it can not arbitrarily fix the price, but it can be made to represent and speak for the sellers.

In order that the central organization shall be able to exert any noticeable influence on the market, it must be definitely authorized to speak for at least a large percentage of those who have grain to sell; in other words it must be made the agent for the sale of the offerings of the local associations. Nothing like a complete monopoly of the marketable wheat is practicable or desirable, but if the central association could be authorized by all the producers of hard winter wheat to say the price which would have to be paid in order to get such wheat should be 80 cents per bushel and to make its assertion good, does any one doubt that better prices would be obtained than where buyers practically make the price?

It is a simple business proposition that by combining all your interests you become the most important and powerful factor in the market, instead of being, as at present, a disorganized mass, which does practically nothing to protect its own interests. A strong central organization can compel buyers to come to it. Suppose your central association were made exclusive agent for the sale of all wheat of winter wheat States. Would not its general office be at once the board of trade to which all buyers would be compelled to come in order to get wheat at all?

Another matter in which you are all vitally interested is the cost of getting your grain to market. You, not the buyers, pay all the freight charges to the general market. It is a well-known fact that great shippers whose business is of such magnitude as to make it an object to the railroad companies are granted special rates in one form or another and thereby greatly increase their profits. Is there any doubt in your minds that favored grain companies are given rebates and other concessions that you can not obtain singly? Each local association is without influence in dealing with the railroads. When all combined the grain and live stock producers are the most powerful and influential people in the business world. A local shipper has little opportunity to cultivate the acquaintance of the men who manage the railroads.

Personal acquaintance is often of great value. It certainly is the great shippers who now get favors. Your general association as your agent would necessarily become well acquainted with all the leading railroad officials with whom it would come in daily contact, looking after your interests. It would be able without difficulty to get you fair treatment, at least, in most cases. If a railroad company should prove stubborn and refuse to deal fairly with you, a strong combination, such as you would be, could carry on litigation whenever necessary and stand on equal footing of strength, even with the most powerful railroad company. By your combined strength you can carry on successfully contests which it would be folly for an individual to attempt.

You have difficulty in getting permission to build elevators on the right of way or in a convenient location, in getting spurs and side tracks when you need them, in getting cars when shipments are heavy, and are vexed and annoyed in many ways in your dealings with the railroad companies. While some of these are unavoidable, a central organization on which you have a right to call, could many times get you your rights without great trouble or expense, when it would be quite imprac-

licable for you acting singly to accomplish anything. You also have difficulty with the great terminal elevators. Your central organization would protect you against the extortions where you are now unable to help yourselves.

In order that your central organization shall be enabled to accomplish anything for you, it is necessary that you put the strength into it. Standing alone, merely as a corporation with a small capital stock, it is without power or influence, but standing as the duly authorized agent of a great number of local associations and individual members for all of whom it speaks it is a first-class power. The nature of the business you require it to do, fortunately renders it exceptionally easy to give it the required strength, without your contributing any money beyond the capital stock.

If you will merely transact your business through it as your agent, paying to it only the usual commissions on sales, these will furnish an ample income to pay all expenses of every kind and return liberal dividends on capital stock, and also on shipments. One cent per bushel on 50,000,000 bushels of wheat would give \$500,000 in one year, a sum sufficient to build elevators at central points, after paying all current expenses. With your local elevators owned by your home association and a system of large elevators owned by the general organization, is it difficult to see how greatly your position would be strengthened? As the matter now stands the farmer is the man who suffers the modern spirit of combination in business enterprise. It is idle to talk about destroying these combinations and returning to old methods. The only thing left for the farmer to do is first to learn the lesson of the advantages of combination for mutual benefit, and then proceed to make his combination.

Nothing could be more simple than the plan proposed, and of which it may already be said its success is assured. Let producers in each locality here form a local organization and market their crops through it as their agent. Let all these local associations join in building up the central association and make it their agent to do all those things which a local association can not do for itself. All of these associations will be owned and controlled by yourselves, and all the profits derived will be equally distributed among the stock-holders and shippers.

But in order that you may know that you have strength in your central organization, you must definitely bind yourselves to sustain it by giving it your business. Without a definite binding obligation the whole scheme becomes weak and liable to fall in pieces whenever a split of factions or some temporary interest may dominate.

The following summary will give you the mission and purposes of the central association.

First, its mission is to thoroughly organize the farmers of the State in local associations for the sale of their own surplus products; second, to unite the local associations in a central organization for the purpose of advancing and protecting the interests of each local association, advancing the interest of the producing class and working to secure for its members justice and fair play in the markets and elevators; third, to conduct a commission business, getting together the surplus products of the local associations and of its own members, and selling the same in the most economical manner, securing all the advantages gained by association and combination; fourth, to own memberships on boards of trade and in the live stock exchanges where we transact business, where we find such memberships are necessary to place us in line with the business world.

It may be well for us to state here that in time we will own our elevators in the principal terminal markets. We will also establish our own statistical bureau, gathering from the farmers statistical information regarding grain, stock, and crop reports, and disseminate the same privately to our members through our local auxiliary associations.

By the cooperation of farmers, federated together, affiliating with a central organization, standing as one man for principles of justice and equity, we will command a hearing that no corporation or combination will dare ignore. It should require very little argument to convince any intelligent man of the power and advantage of such combination.

Standing alone, the individual farmer and the local association are weak and helpless, but when standing united in a central organization they become powerful. What show has the individual farmer or the local association when pitted against the great and powerful combinations that are in existence to-day? What chance have they in controversies with unlawful combinations while standing alone? What opportunities have they for correcting discriminations or securing just freight rates? Joined together, standing as a solid phalanx, the very fact that such an organization exists, backed up by all those local interests, will command respect and avoid difficulties.

THE SPRING MILLINERY. The majority of the new hats are distinguished by the decided downward flare at the back. Another important item in up-to-date millinery is the low, almost flat crown. The new straws and braids, the new floral and other trimmings are pictured and described at length in the April Delineator, which also devotes a page to illustrating the various steps in the construction of a stylish Marquise hat from a Fifth Avenue shop.

Crosby Bros.

TOPEKA, KANSAS.

Dry Goods, Ladies' Shoes, Furniture, Carpets and Draperies.

Our Semi-Annual Special Sale

OF FURITURE, CARPETS and DRAPERIES is now going on.

It is a great chance to save a good percentage on your housekeeping goods. The extra money will be handy. You can buy something with it that you thought you would have to do without.

Send us a List of the Articles You Want

and give us an idea how much you wish to pay. We will write you full descriptions of the goods just as they actually are, quoting our Special March Sale Prices.

When You Send in Your Order

we will fill it as carefully as if we were buying for ourselves. We want your order, and want you to be satisfied with it. (Mention this paper.)

Dairy Association Notes.

(Continued from page 307.)

dent, 84%; Ayrshire cow, Star of Hillview, judge, 93, student, 86.

Following the regular stock judging contest, Major Alvord gave a most interesting lecture in the ring, upon stock-judging and illustrated it with living animals from the college scrub herd of milch cows. After this, Dr. N. S. Mayo gave a most comprehensive lecture, illustrated with the living animal, upon the diseases of the horse. Both these lectures were highly appreciated by the hundreds of people present.

The great Blue Valley Creamery Company, of St. Joseph, Mo., was represented by Mr. W. H. Phillips, who is an alumnus, an ex-regent, and an ex-secretary of the Agricultural College. His line of Empire separators is a good one, and after listening to his explanation of its good points, one can easily understand why it is so immensely popular where it has been used.

Among stockmen, praise can go no higher than to say, "He understands his business." This was the universal sentiment which followed the presentation of Prof. Haecker's illustrated paper on the "True Type of the Dairy Cow." If Prof. Haecker ever aspires to the Presidency of these United States he can count on the vote of each and every one of the college boys who heard his lecture.

President Lewellen of the association did himself proud in his capacity of presiding officer. Where large bodies of people are to be entertained and instructed a good deal of native or acquired tact is required in order that everything may run smoothly. President Lewellen had all the necessary qualifications for his office, and it was a matter of universal regret that he must bow to the inexorable law which prohibits a second term.

A diversion was created after the stock-judging contest by the turning loose in the show-ring of a full blooded Tamworth hog. This breed of hogs is new to most Kansans and this individual, with its coarse, brick-red hair, its long legs, and its peculiar conformation which places its fore legs midway between its snout and its tail, was the cause of much merriment at the expense of this "red headed rail splitter."

The Sharpless Separator was much in evidence in the dairy-apparatus exhibit and attracted much well-merited attention. This company is the manufacturer of a beautifully efficient line of machines, which have won a place in the estimation of creamery men that is second to none. Their gentlemanly representatives here helped to make a visit to the exhibit room and especially to their part of it, specially attractive.

The interest and profit of this record-breaking meeting of the State Dairy Association was greatly increased by the number of students who attended and the interest they manifested in the proceedings. This is as it should be. These young men are the future dairymen of our country as well as the present missionaries who will carry all the good things they learn to their several homes to the profit of many others as well.

By invitation, Major Alvord addressed the student body in chapel one morning of the session, and during his speech he alluded, very feelingly, to the late President Fairchild, giving him credit, among other things, for the making of the first draft of what is now known as the Morrill Bill of 1890, which provides a direct appropriation from Congress of \$25,000 per year to each Agricultural College, and without which our college could never have grown as it has.

Among the pure-bred dairy cattle now owned by the college there are some mighty good things. The little Ayrshire

cow, Star of Hillview 11455, during the last year gave 8,000 pounds of milk from which was made 400 pounds of choice butter. The dam of the Guernsey bull Shylock of Darlington 4579 has a record of 600 pounds of butter in six months. There are some younger animals that promise well for the future, and it will pay to keep your eye on this herd.

The exercises of the dairy convention were enlivened throughout by the excellent music furnished by the music department of the college. Professor Brown and his associates placed the full resources of the music department at the disposal of the association and whether rendered by brass band, orchestra, mandolin club, or vocally, the music was excellent and added much to the enjoyment of the occasion as well as reflecting great credit upon Professor Brown and his classes.

A large measure of the very pronounced success of the fifteenth annual meeting of the Dairy Association was due to the untiring efforts and indomitable energy of Secretary T. A. Borman. This young man has the happy faculty of being in three places at once, and of doing seventeen different things at the same time, and of never getting tired or out of humor. He is the right man in the right place, and our worst wish for the association is that it may never get another secretary than the present incumbent of that office.

Perhaps the event of most general interest in the show-ring was the parade, on Thursday afternoon, of all of the pure-bred animals belonging to the college. This included two Percheron mares and the following numbers of beef, dairy, and dual-purpose cattle, 7 Aberdeen-Angus, 4 Galloways, 4 Herefords, 4 Shorthorns, 5 Ayrshires, 4 Guernseys, 3 Holstein-Friesians, 4 Jerseys, 5 Red Polls, and 3 Polled Durhams. The parade was accompanied by the cadet band and followed, but not closely, by the Tamworth hog, which wouldn't march.

Among the numerous handsome exhibits made by manufacturers in the dairy building during the meeting, the DeLaval showed up prominently and attracted its full share of attention. It is a noticeable fact that nearly all the butter shown by the forty-five contestants for the butter-maker's prize was made from cream which had been separated by one of their machines. The souvenir button distributed by this old standard company was very highly prized and very generally worn by the dairymen.

The contractor who is erecting the magnificent new physics and chemistry building at the college is Mr. Jas. W. Berry, of Jewell City, who is a graduate of the college of several years standing. The quality of the work now being done upon this building reflects credit upon Mr. Berry as well as the preliminary training which he received at the college, but it was a matter of universal regret among the dairymen and visitors that the building should have been given such a very unfortunate location. It could not have a worse position on the grounds.

One of the very interesting events of the meeting was the presentation of Mr. E. W. Simpson's paper. This young man is totally deaf and yet he takes the same studies and the same work that his classmates do; and what is more to the point, he stands close to the head of his class at all times. His paper before the association was presented by drawings and matter written on the blackboard. The drawings were made by himself on large sheets of paper and were very lifelike and extremely creditable. There is evidently a bright future ahead of this young man.

Major Alvord's splendid paper was supplemented by a large and beautiful series of stereopticon pictures. The value of these, however, was much marred by the

rather poor light which was furnished from the college electric light wires and by the exceedingly unskilled handling of the lantern slides by the assistant in charge. The latter seemed to think that the audience preferred to look at the margins of the pictures rather than the pictures themselves and also that it would be in very bad taste for him to allow the lantern slide to remain stationary long enough for the audience to make out what it might be. It was very unfortunate.

O. Douglass, of Boston, who needs no introduction to the butter-makers of the United States, writes Prof. E. H. Curtis that the student-made butter sent each week from the Kansas Agricultural College is the best butter sent to him from any dairy school in the United States. To illustrate this we quote the scores for the five days beginning February 18:

	Standard	18	19	20	21	22
Flavor	45	41	42	41½	41½	42
Grain or body	25	25	25	25	25	25
Color	15	15	15	15	15	15
Salt	10	10	10	10	10	10
Finish or packing ..	5	5	5	5	5	5
	100	96	97	96½	96	97

How's This!

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

F. J. CHENEY & CO., Props., Toledo, O. We, the undersigned, have known F. J. Cheney for the last fifteen 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, Ohio. Walding, Kinnan & Marvin, Wholesale Druggists, Toledo, Ohio. 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.

Hall's Family Pills are the best.

Northern-grown Farm Seeds.

During the past ten years there has been an enormous demand for Michigan Grown Farm Seeds. The wonderful yields that have been secured from Hammond's select varieties of Seed Potatoes, Oats, Corn, Japanese, and other Millets, Barley Speltz, Spring Wheat, Rape, Spring Rye, Soja Beans, Bromus Inermis, Grass, and Clover Seeds are something phenomenal.

The Hammond Seed Company, limited, do an enormous business in Seed Potatoes, probably the largest growers and shippers in America. Their crop the past season aggregated 274 carloads, which would make about eight good solid train loads. At an average planting of ten bushels per acre their seed will plant 13,540 acres. On farm seeds another large train would be required to haul the above named seeds to say nothing of the tons and tons of Vegetable Seeds sold, such as Onion, Radish, Lettuce, Beet, Mangel, Peas, Beans, Sweet Corn, Carrot, Cabbage, etc. It is simply marvelous the reputation this house has built up on the superior quality of its seeds. And they have sold at such low prices they have drawn an immense trade from all parts of the United States and Canada. Any one wanting seeds, either vegetable, field or flowers, should not fail to write to Harry N. Hammond Seed Company, Ltd., Bay City, Mich., for their handsome 100 page seed catalogue. It is mailed free for the asking.

An English Joke.

A farmer was shocking a field of corn with one of those new-fangled machines, known as a "Deering Corn Shocker" when an Englishman who was playing golf in an adjoining field called the attention of his companion to the queer machine. "What is that, over there," he asked. "Oh, don't look!" his companion replied. "It's simply shocking, don't you know?" and it is further related that the inquirer is still trying to fathom his companion's meaning.

To make cows pay, use Sharpless Cream Separators. Book "Business Dairying" and Catalogue 337 free. West Chester, Pa.

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Objectionable advertisements or orders from unreliable advertisers, when such is known to be the case, will not be accepted at any price.
To insure prompt publication of an advertisement, send cash with the order; however, monthly or quarterly payments may be arranged by parties who are well known to the publishers, or when acceptable references are given.
All advertising intended for the current week should reach this office not later than Monday.
Every advertiser will receive a copy of the paper free, during the publication of the advertisement.
Address all orders:

KANSAS FARMER CO.,
116 West Sixth Ave., Topeka, Kans.

What is best to do with wheat land on which there is only a partial stand? This is a question on which the KANSAS FARMER would like the views of its readers.

The voluminous report of the proceedings of the State Dairy Association in this number of the KANSAS FARMER crowds out much other matter of great interest. It will be conceded that, in the KANSAS FARMER, the dairymen have the floor this week.

The report of the proceedings of the thirty-third annual session of the Kansas State Horticultural Society, held in December, 1901, has just appeared from the State printing house. It is a neat pamphlet of 101 pages and contains most of the papers read at the annual meeting and a stenographic report of the discussions. The fine picture of the secretary, which embellished the first volume of horticultural reports put out by the present secretary, is omitted.

The paper by the editor of the KANSAS FARMER, on "Relative Value of Feeds," which would have been delivered at the meeting of the State Dairy Association at Manhattan last week, had the writer not been unavoidably detained at Topeka, will be presented in the KANSAS FARMER in the near future. It is doubtless true that the feeder's prosperity depends very much upon the accuracy with which he is able to "figure on feeds." Before many years the science of arithmetic will probably be much applied to the feeding problem.

The United States Supreme Court has just rendered a decision which declares unconstitutional the anti-trust laws of Georgia, Illinois, Indiana, Louisiana, Michigan, Mississippi, Montana, Nebraska, North Carolina, South Dakota, Tennessee, Texas, and Wisconsin. In each of these States there is an exemption in favor of live stock and agricultural products in the hands of the raiser or producer, or of labor organizations. Under the rulings of the court, an anti-trust law, to be constitutional, must apply indiscriminately to all combinations, with no exemptions or exceptions whatever.

ABSENT ANGUS AGAIN.

At the great Kansas City American Royal Show, held last October, the Aberdeen-Angus breed of cattle were only conspicuous by their absence. Breeders of "Doddies," who were present, were much humiliated by reason of the fact, and when interviewed as to the 1902 show declared with much enthusiasm and warmth that "Next time we will make a display that will be worth seeing," but from the present indications the Angus fraternity will not have a show at Kansas City, but will concentrate their efforts at Chicago only.

This action will be a great mistake on the part of the American Aberdeen-Angus Association, as it will tend to materially injure the prestige of the breed

in the West. If the Angus people lack stock and money to make a creditable show at both Kansas City and Chicago, they should by all means make their show of breeding stock at Kansas City and fat stock at Chicago.

THE STATE DAIRY ASSOCIATION.

The fifteenth annual meeting of the Kansas State Dairy Association, which closed its sessions at the State Agricultural College last week, was a notable one. The attendance was the largest in the history of the association, and the enthusiasm was boundless. The fact that this is the only great dairy center in the State; that each college student who attended these meetings will at once become a missionary for good dairying and will teach his father and brothers what he himself has learned; and the fact that many of the dairymen had an opportunity to visit their sons and daughters in college during the meeting, all added to the usual interest of the occasion and helped to emphasize the wisdom of the officers in fixing the meeting at this place.

Men of national reputation were in attendance to give advice and instruction, and the meeting was so thoroughly successful in every particular as to give the association a place in the estimation of the people which it has never before held.

The officers for the ensuing year are: President, W. G. Merritt, Great Bend; vice president, Geo. Littlefield; secretary and treasurer, T. A. Borman, Topeka; assistant secretary, C. C. Lewis, Ottawa.

While much of the success of the next meeting will depend upon the efforts and ability of these officers, the dairy interests of the State have now received such an impetus that the association will be a great factor in the future development of the State, and we hope to see the day, and that soon, when the State will give financial aid, so that the association may hold a series of dairy institutes each year. We need education along this line.

CONDITION OF THE WHEAT.

There is much inquiry and there are many reports as to the condition of the wheat. The KANSAS FARMER would be glad indeed to be able to present a showing on this important subject. Just now any determination of the general condition is impossible. Reports are scattering. The impression that much of the wheat is in poor condition is irresistible if one reads the published statements. It must be remembered that at such time as this the man who has the damaged wheat is the one who writes, while the man whose wheat is in fair condition but subject, as always, to the contingencies of the season, says nothing.

Wheat that is dead can not be revived by any kind of favorable season. That the southern part of the wheat-belt has much dead wheat is asserted by too many reliable farmers of that section to be longer questioned. Conditions are better farther north, especially in sections where the fall rains were generous and where snow protected the plant during the very cold weather. The eastern part of the State which this year has a wider acreage of wheat than for many years, if not wider than ever before, has reported little damage. About April 3 or 10 the United States crop and weather service will begin its publication, in the KANSAS FARMER, of reports from every county in Kansas. Until that time information will be too incomplete to admit of close estimates.

BLOCK OF TWO.

The regular subscription price for the KANSAS FARMER is one dollar a year. That it is worth the money is attested by the fact that thousands have for many years been paying the price and found it profitable. But the publishers have determined to make it possible to secure the paper at half price. While the subscription price will remain at one dollar a year, every old subscriber is authorized to send his own renewal for one year and one new subscription for one year with one dollar to pay for both. In like manner two new subscribers will be entered, both for one year, for one dollar. Address, Kansas Farmer Company, Topeka, Kans.

Awful Disease, Cancer of the Lip.

The most frequent location of terrible disease in the male caused from the constant irritation produced by smoking or chewing tobacco. Dr. Bye, the Specialist on the Treatment of Cancer, Kansas City, Mo., advises early treatment in such cases, as most cases ter-

minate fatally after the lymphatic glands become involved under the chin. Mr. N. H. Henderson, of Wilsey, Kansas, was recently cured of a very bad cancer of the lip by the Combination Oils. Persons afflicted with this disease should write the Doctor for an illustrated Book on the treatment of Cancer and Malignant Diseases. Address Dr. W. O. Bye, 9th & Broadway, Kansas City, Mo.

At the Kansas City Market.

There is probably no live stock commission firm that does business at the Kansas City Stock Yards that can give you better service in the way of selling or purchasing stock than the Union Live Stock Commission Company. This company has a corps of competent men in all of the departments of the live stock trade. It furnishes market reports free upon application.

Directors: M. S. Peters, Jerry Simpson, F. E. Rowles, W. K. Greene, Henry O'Neill, Geo. W. Williams, L. C. Boyle.

Publisher's Paragraphs.

The Blue Valley Foundry, of Manhattan, Kans., is an institution that had a small beginning, but which, by the excellence of their feed-grinders, corn-harvesters, etc., and the skill with which they make all kinds of machine work and castings, they have developed a large and growing business. This foundry is now completely filled with all machinery and materials necessary to enable them to fill large orders promptly, and they have on hand a large supply of their specialties—feed-grinders, both power and sweep, corn-harvesters, stoves and stove repairs, iron flue caps, etc., ready for immediate shipment. With every facility and plenty of material, their prices are right. Write them for information and prices.

The Farmers' Mutual Hall Association, of Topeka, Kans., is a prosperous home institution that is of great service to farmers of the State. This company is under the management of some of our best citizens. The officers and directors are well-known men of excellent standing. They were late in getting into the field last year on account of the necessity of reorganization to comply with the provisions of the hall insurance law passed by the last Legislature late in the session. However, they did a very prosperous business, settled all claims properly, and rebated to the policy holders a large percentage of the premiums. The losses were unusually heavy, but the officers have yet to hear of a dissatisfied member. Their local agents, prominent insurance men in their respective localities, are anxious to represent them the coming season, and each predicts that he can treble his business for them in 1902. Kansas farmers now regard hall insurance of more importance to them than fire insurance, and have come to look upon the mutual companies organized under the act of 1901, as the only proper insurance. The reserve fund feature of the law guarantees absolute safety, and the mutual features affords insurance at cost. See their regular announcement in this issue.

If there is any one thing that was more prominently developed at the recent meeting of the State Dairy Association than any other, it is that the money of the future, in this country, is to be made on live stock, and that dairy husbandry is just as important and just as dignified as any other form of animal husbandry. Dairying is no woman's work, as many farmers still pretend to think, but is an exceedingly profitable and never failing source of income that is worthy of the best efforts of the best men. In order to succeed one should begin right at the ground and study crops and feeding, then breeds and breeding and last, but not least, the marketing of the product. The latter is the one generally thought of first, and it is a pleasure to be able to announce that it has been solved, completely and satisfactorily, by the Continental Creamery Company, which has attained the proud distinction of being the largest creamery of its kind in the world, supported, as it is, by 15,000 patrons at 250 stations, to whom it pays \$125,000 per year, it will be seen that it is really a great cooperative institution, each part of which is dependent upon the others. Indeed, it cooperates with its patrons more closely than most large enterprises, and has now arranged a system of bookkeeping which shows accurately the amount of butter-fat supplied by each patron, and its relation to cost. Every incentive is offered the farmer to aid in increasing the output of his station and thereby reduce the cost to each patron. So successful has this system been that patrons find that, even when in reach of competing companies, they can do better by remaining with the Continental. What the average farmer needs is a regular income which he can meet expenses "between crops," as well as during bad seasons, and long experience has shown that nothing can supply this demand so well as the milk cow. A milk cow is a delicate machine, which will do good work only as it is well cared for, but which becomes a dead expense when not properly handled, and the Continental Creamery Company is spending time, effort, and money in educating the people along this line. The prosperity and number of its patrons means the prosperity of the company, and no company gives fairer treatment nor bigger prices to its patrons than the great Continental.

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Crosby Bros'. Mail-order House.

Crosby Bros., Topeka, Kans., who have the largest and most successful mercantile establishment in the State have during recent years established a very large mail-order business, extending over the entire West. We call special attention to the announcement this week of the firm's semi-annual special sale of furniture, carpets, and draperies. Many of our readers are in the market for various articles at the present time and if such will send a list of their wants to Crosby Brothers it will receive prompt and careful attention. Don't fail to mention Kansas Farmer when writing them.

Where they Ought to Go.

Printers should go to Agate, Col., lawyers to Fee, Pa., cranks to Peculiar, Mo., old maids to Antiquity, Ohio, entomologists to Bug Hill, N. C.

Every one who wants good, strong lamp-chimneys should go to Macbeth, Pittsburg, Pa., for his little book, "How to Manage Lamps," which tells what size chimney will fit every lamp.

If you can't go, write a postal for it to Macbeth, Pittsburg—that will do just as well. Macbeth's "pearl top" and "pearl glass" don't last forever, but they will last until you drop them or hit them on the table.

Macbeth's chimneys will not break with heat.

What about those other kinds?

All that is Recommended.

JACOB JAECKLE.

Contractor and Builder, Hardwood Finish A Specialty, Office and Mills, 915 Genesee Street.

Buffalo, N. Y., February 19, 1902.
Dr. B. J. Kendall Co., Enosburg Falls, Vt., Gentlemen:—I saw one of your books called "A Treatise on the Horse and His Diseases," and I find it very good, which I must say also of your Spavin Cure of which I have used about four bottles and find it all you recommend. I have been trying to get one of your books for some time and never could, so I thought I would take this course. The one I saw was published in 1891, maybe you have one later than that. Awaiting the granting of this favor, I remain, Yours respectfully,
W. JACOB JAECKLE.

The Stock Interest.

THOROUGHBRED STOCK SALES.

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

March 15, 1902—C. P. Nigh, South Omaha, Red Polled cattle.
 March 19, 1902—Dispersion Shorthorn sale. Col. W. R. Nelson, Kansas City.
 March 20, 1902—B. B. & H. T. Groom, Kansas City, Shorthorns.
 March 25-27, 1902—National Hereford Exchange, Chicago, Ill. (Sotham management.)
 April 1, 1902—M. Sooter, Lockwood, Mo., Shorthorns.
 April 8 and 9, 1902—Breeders' Combination Sale of Herefords, at Kansas City, Mo.
 April 15, 1902—Geo. H. Augustus, Kansas City, Mo., Shorthorns.
 April 16, 1902—Geo. Bothwell, Nettleton, Mo., Shorthorns.
 April 16, 1902—W. O. Park, Atchison, Kans., Aberdeen Angus.
 April 22-24, 1902—National Hereford Exchange, Kansas City, Mo. (Sotham management.)
 April 25 and 26, 1902—H. O. Tudor, Holton, Kans., Shorthorns.
 May 7 and 8, 1902—Colin Cameron, Kansas City, Arizona Herefords.
 May 27-29, 1902—National Hereford Exchange, Omaha, Neb. (Sotham management.)
 June 24-26, 1902—National Hereford Exchange, Chicago, Ill. (Sotham management.)

Dispersion of Wavertree Galloways.

One of the most notable sales of representative Galloway cattle ever held in America was the dispersion sale held at South Omaha, February 28 to March 1. The Wavertree Herd was established at Dundee, Minn., about twenty years ago and had the reputation of being one of the best herds in the country, but owing to the death of Mr. Edward Paul last year it was necessary to dispose of all his property, including this herd; and it was with great regret that Dr. W. H. B. Medd, the manager, was obliged to close out the herd. It is gratifying, however, to state that the outcome of the two-days' sale was highly satisfactory. Every animal was catalogued separately, including all calves over 5 months old; and had such been sold with their dams the average of the entire offering would have been about \$250.

The auctioneers, Cols. R. E. Edmonson and J. W. Sparks, did a fine piece of work in making the liveliest Galloway sales of recent years, with the following result: Twenty-five bulls sold for \$5,670, an average of \$227; ninety females sold for \$15,445, an average of \$171.62. The total sales of 115 Galloway cow-calf sales, and bulls sold for \$21,115, a general average of \$183.62.

The top notcher females of this offering were the imported Miss Evelyn (15471) 15053, which went to A. C. March, of Westfield, Iowa, for \$500. O. H. Swigart, of Champaign, Ill., bought the 5-year-old imported cow, Miss Lettice (15470) 15052, for \$400, while our new advertiser, C. N. Moody, Atlanta, Mo., who has one of the best herds in the West, bought the highest priced plum of the imported females for \$675 in the purchase of Paragon (17400) 15051. It will be remembered that Mr. Moody bought the highest priced Galloway bull at the international show and sale at Chicago last December.

The top notcher prices for the bulls of this offering were as follows: The 4-year-old imported herd-bull, Mario of Castle-milk (7052) 15054, went to A. C. March, of Iowa, while the young prize-winning herd-bull, which Colonel Edmonson declared to be the finest Galloway bull he had ever seen, Dragoon of Wavertree 17819, and one 8-months calf sired by imported Mario of Castle-milk, went to I. B. & A. M. Thompson, Nassau, Mo., for \$515. Below we give the details of this important sale, which are as follows:

COWS AND HEIFERS.

Nellie Grey of Wavertree 11890, 8 years, W. G. Kimmell, Sheldon, Iowa, \$205
 Lizzie Grey of Wavertree 11902, 7 years, Geo. D. Palmer, Jamestown, N. D., 200
 Lucerne of Wavertree 15049, 21 months, C. E. Clark, St. Cloud, Minn., 175
 Lausanne of Wavertree 16778, 2 years, O. H. Crowe, Fullerton, Mo., 155
 Lochinvar of Wavertree 19225, 21 months, W. G. Gibb, Minot, N. D., 105
 Jasmine of Wavertree 18745, 1 year, T. Van Zyle, Altoona, Iowa, 85
 Jessie 3d of Sheldon 11672, 6 years, Geo. D. Palmer, 140
 Jessie 2d of Sheldon 11670, 7 years, J. M. Rhodes, Tampa, Kans., 205
 Juliet of Wavertree 14791, 3 years, Geo. D. Palmer, 205
 Chicquot of Wavertree 12007, 5 years, Geo. M. Kellam, Richland, Kans., 235
 Careful of Wavertree 11908, 1 year, C. S. Hechner, Princeton, Ill., 215
 Carnation of Wavertree 16775, 20 months, S. J. Banker, Tampa, Kans., 135
 Coryphee of Wavertree 17098, 18 months, C. E. Clarke, 150
 Corinne of Wavertree 12009, 6 years, O. H. Crowe, 180
 Cotillon of Wavertree 15305, 2 years, B. T. Stevenson, Hancock, Iowa, 135
 Carmen of Wavertree 14296, 3 years, C. E. Clarke, 195
 Countess of Wavertree 19232, 7 months, W. G. Gibb, 75
 Cowslip of Wavertree 3675, 5 years, J. M. Giltner, Battle Creek, Neb., 140
 Cleopatra of Wavertree 11889, 11 years, J. M. Giltner, 265
 Euphemia of Wavertree 11904, 2 years, J. P. Martin, Sutherland, Iowa, 240
 Etiquette of Wavertree 19236, 10 months, M. G. Gibb, 85
 Elissa of Wavertree 12498, 5 years, W. H. Pugsley, Genoa, Neb., 200
 Imported Miss Evelyn (15471) 15053, 5 years, A. C. March, Westfield, Iowa, 500
 Eminence of Wavertree 19237, 11 months, R. Van Zyle, 165
 Valentine of Wavertree 17095, 19 months, W. O. Pugsley, 160
 Velvet of Wavertree 11893, 6 years, J. P. Martin, 225
 Veil of Wavertree 19240, 7 months, C. E. Clarke, 55
 Vesper of Wavertree 14297, 3 years, O. H. Swigart, Champaign, Ill., 190
 Vinolia of Wavertree 15307, 2 years, S. Hechner, 200
 Vigil of Wavertree 19230, 7 months, J. P. March, 70
 Viola of Wavertree 11887, 10 years, S. M. Croft, Bluff City, Kans., 210
 Babette of Wavertree 17823, 18 months, S. M. Croft, 160
 Belle of Walnut Hill 13128, 5 years, S. J. Banker & Son, 170
 Spring of Wavertree 12921, 8 years, B.

F. Stevenson, Hancock, Iowa, 150
 Sauterne of Wavertree 17820, 17 months, J. M. Rhodes, 205
 Sunset of Wavertree 12497, 5 years, Seward Martin, Princeton, Iowa, 185
 Sunray of Wavertree 19241, 8 months, B. T. Stevenson, 75
 Surprise of Wavertree 13922, 3 years, F. J. Sand, Nebraska City, Neb., 110
 Selina of Wavertree 14979, 2 years, W. C. Kimmell, 115
 Superior of Wavertree 11899, 7 years, R. Gibb, 160
 Superba of Dundee 10362, 2 years, W. C. Kimmell, 110
 Flora McDonald 10366, 11 years, J. M. Rhodes, 265
 Damsel 13131, 5 years, Seward Martin, 180
 Keepsake of Wavertree 13138, 4 years, J. P. Martin, 250
 Kerchief of Wavertree 14298, 3 years, J. M. Rhodes & Son, Tampa, Kans., 205
 Kathleen of Wavertree 19239, 10 months, S. J. Banker, 85
 Patty of Wavertree 17822, 17 months, O. H. Swigart, 200
 Pearl of Wavertree 14792, 6 years, F. A. Craymer, Lorenzo, Ill., 200
 Princess of Wavertree 15048, 22 months, Phil Graves, Rose Hill, Iowa, 160
 Pueue 4th of Sheldon 11669, 3 years, H. F. Cannon, Tecumseh, Neb., 135
 Primrose of Wavertree 16774, 2 years, W. C. Kimmell, 110
 Lassie of Wavertree 16386, 2 years, O. H. Swigart, 311
 Langtry of Wavertree 19238, 1 year, A. C. March, 125
 Miss Lettice (15470) 15052, 5 years, O. H. Swigart, 460
 Miss Bessemer 15477, 3 years, W. G. Haworth, Indianola, Iowa, 130
 Lady Coreta 15472, 3 years, A. L. White, 150
 Nira, Iowa, 150
 Cora of Marshall 15466, 3 years, W. B. Stanley & Son, Indianola, Iowa, 140
 Margery of Wavertree 12496, 5 years, R. Van Zyle, 155
 Mermald of Wavertree 16388, 5 years, R. Van Zyle, 145
 Wavertree Miss 10361, 2 years, R. Van Zyle, 200
 Mischief of Wavertree 17821, 2 years, Viehl Bros., Lanark, Ill., 100
 Midget of Wavertree 13133, 4 years, S. M. Croft & Son, 240
 Maggie Murphy 10365, 10 years, W. J. Haworth, 155
 Mystic of Wavertree 12003, 5 years, N. C. Kimmell, Sheldon, Iowa, 120
 Myth of Wavertree 19234, 8 months, A. C. March, 85
 Mignon of Wavertree 17096, 8 months, Viehl Bros., 165
 Magic-an of Wavertree 12491, 5 years, F. J. Sands, 115
 Minuet of Wavertree 19242, 8 months, R. F. Van Zyle, 85
 Magic of Wavertree 11897, 7 years, L. E. Gonigan, Walnut, Ill., 135
 Music of Wavertree 16387, 2 years, Philip Gray, Rose Hill, Iowa, 185
 Mistletoe of Wavertree 16776, 2 years, P. Gray, Rose Hill, Iowa, 90
 Pearl of Wavertree 18805, 1 year, W. O. Pugsley, 130
 Fortuna of Dundee 10364, 11 years, R. Van Zyle, 245
 Fautull of Wavertree 18744, 1 year, Straub Bros., Avoca, Neb., 125
 Flight of Wavertree 12001, 5 years, W. G. Stanley & Son, 175
 Dolly of Wavertree 18746, 1 year, Straub Bros., 115
 Diana of Wavertree 3676, 5 years, W. C. Kimmell & Son, 115
 Diamond of Wavertree 15997, 2 years, Delh Bros., 140
 Dainty of Wavertree 12495, 5 years, C. E. Clarke, 500
 Dado of Wavertree 19231, 7 months, F. P. Wild, Ovid, Mo., 100
 Dream of Wavertree 11895, 7 months, W. O. Pugsley, 300
 Danvita of Wavertree 13132, 4 years, Straub Bros., 125
 Drift of Wavertree 12004, 5 years, O. H. Swigart, 165
 Drummer of Wavertree 18749, 1 year, Ira Bros., 105
 Dewdrop of Wavertree 11892, 6 years, C. S. Hechner, 190
 Devere of Wavertree 11891, 8 years, J. F. Craymer, 200
 Dinah of Wavertree 14795, 3 years, Steele Bros., 180
 Dahlia of Wavertree 15049, 2 years, W. C. Kimmell, 105
 Derelict of Wavertree 15989, 2 years, S. J. Banker & Son, 160
 Dora of Wavertree 14786, 3 years, A. L. White, 140

BULLS.

General of Wavertree 19222, 8 months, M. M. Sparks, Fulton, Minn., 100
 Guardsman of Wavertree 17091, 20 months, R. Van Zyle, 500
 Lochinvar of Wavertree 19225, 21 months, W. G. Gibb, Minot, N. D., 105
 Cadet of Wavertree 18748, 14 months, Wm. Walters, Wakefield, Neb., 200
 Commodore of Wavertree 19223, 8 months, Huffman & Hollins, Neligh, Neb., 110
 Elphinn of Wavertree 18752, 1 year, J. M. Giltner, Battle Creek, Neb., 210
 Imported Mario of Castle-milk (7052) 15054, 4 years, A. C. March, Westfield, Iowa, 875
 Viceroy of Wavertree 19224, 8 months, W. E. Bitney, Willowdale, Neb., 60
 Subaltern of Wavertree 19221, 7 months, Diehl Bros., Lanark, Ill., 115
 Sundog of Wavertree 18753, 1 year, C. J. Corlig, Platte City, Neb., 200
 Sentry of Wavertree 17092, 16 months, Geo. D. Palmer, Jamestown, N. D., 200
 Kohinoor of Wavertree 19227, E. Grant, Princeton, Minn., 75
 Speculator of Dundee 10355, 10 years, A. L. White, Nyra, Iowa, 200
 Marmion of Wavertree 18804, 1 year, L. Sheldy, Newhauka, Neb., 180
 Magnate of Wavertree 18750, 1 year, S. M. Croft & Son, Bluff City, Kans., 130
 Mechanic of Wavertree 18751, 1 year, W. Gibb, Minot, N. D., 140
 Mikado of Wavertree 17093, 20 months, Geo. D. Palmer, 180
 Paragon (17400) 15051, 5 years, C. N. Moody, Atlanta, Mo., 675
 Friar of Wavertree 18803, 1 year, Fred Koltman, Corley, Iowa, 135
 Dragon of Wavertree 17819, 18 months, I. B. & A. M. Thompson, Nassau, Mo., 515
 Driver of Wavertree 19228, 8 months, Ira Bros., Suxon, Kans., 125
 DeCoy of Wavertree 17094, 17 months, Geo. M. Kellam, Richland, Kans., 205
 Drummer of Wavertree 18747, 1 year, Ira Bros., 105
 Dervish of Wavertree 18747, 13 months, Ira Bros., 130
 Doctor of Wavertree 16770, 21 months, F. D. Wiles, 200

Dispersion Sale of Colonel Nelson's Shorthorns.

When Colonel Nelson, owner of the Kansas City Star, first conceived the idea of building up a herd of Shorthorns he chose Bates lines of breeding among his first purchases. The herd of Governor Glick of Kansas was at this time one of the purest and most carefully bred Bates herds in America and was soon to be disposed. Many choice Bates families were here found as bred by the late M. H. Valle, Independence, Mo., from whose herd Governor Glick had drawn largely for breeding stock, and that it was a distinct loss to the Shorthorn breed when the great Valle herd was dispersed no one will for a moment dispute. That no herd in America was so closely allied to the Valle herd at this time as the Glick herd is also a matter of history. How Colonel Nelson went to work at the Glick sale and bought the tops is fresh in the minds of all breeders and needs only to be mentioned here in order that they may recall it. A few years before this Mr. Alexander Fraser had been busily engaged selecting a number of choice Bates cows for his farm near Independence, many of the well-known cattle from the herd of George Allen having been transferred from Illinois to this Missouri farm. Colonel Nelson visited Mr. Fraser's farm and induced him to name a price on some of the best of these, and they were at once sent to Boone Farm. In making his selections Colonel Nelson secured a number of the famous Duchesses, and will offer at his sale some twelve or thirteen females of this family, many of them with calves at their side. There are also Grand Duchesses, Oxford, Waterloos, Wild Eyes, Kirklevingtons, Filberts, Darlington, and Barringtons, making in all a grand array of Bates breeding such as has not been offered recently at a public sale.

In all his selections Colonel Nelson has kept type steadily in view so that in looking over this grand lot of cattle the visitor can not tell where the Bates cattle quit and the Scotch cattle begin. Bates breeding combined with Scotch type is prevalent everywhere and those who attend this sale will be convinced that it is not impossible to successfully breed this great combination. Among the imported cows we find Countess Mary 8th, bred by Mr. C. E. Wodehouse, Wolmers Park, Hertford, England, a nice young roan cow which lays claim to some of the choicest English blood to be found anywhere. She was a second-prize winner at the Hertfordshire Shows both in 1898 and 1899, and her smoothness throughout, deep body, good quarters, strong back and general ladylike appearance combine to make her a most desirable addition to any herd. Those who have been interested enough to watch closely these English cows which have been recently imported can not fail to admire them no matter what preference they may have for blood lines. Who has forgotten or will forget soon the wonderful spring of rib, breadth of back and loin and general taking appearance of Empress 12th, who had it not been for her stable companion, Cicely, would doubtless have been the winner in the aged cow class in the best shows of both Canada and America, and by many thought to be the equal of her stable mate. She is a sample of this line of breeding. Countess Mary 8th is by Robin Hood 2d, a winner in some of the English shows in 1896 and 1897, bred by Mr. J. Taylor and full of the blood which has made English cattle so much sought by some of the best Scotch breeders as an out cross and from which they are now producing some of their best cattle. The same may be said of the second and third sires in her pedigrees, and in fact it is true all the way down among her sires. She is now bred to Bapton Arrow and her produce should be what many of our best breeders are seeking just now. Imp. Diana was bred by Mr. J. Deane Willis and shows two Scotch crosses on the English foundation. She is another roan, a good smooth heifer with a roan bull calf by Bapton Arrow and bred again to some bull. She is a good kind to buy. Her sire, Bapton Emigrant, was bred by Mr. Willis, got by his Count Lavender and out of a cow by Rising Star, which was bred by W. S. Marr out of one of his Roan Lady cows and sired by his greatest bull, William of Orange. Here we have a combination of the choicest Scotch and English blood which is truly valuable and which some of our best breeders should be anxious to secure. Her bull calf will make some one a



BEST IN THE WORLD.

Dr. B. J. Kendall Co., Gentlemen:—I have the honor to inform you that your Kendall's Spain Cure is the best I have ever used. I have been a Farrier in the United States Army for 14 years, and have never used anything to equal it. I had a horse with hip-joint lameness, a sprain, swollen glands and shoulder lameness. I used two bottles of your Spain Cure and they are sound and well. Yours very respectfully, SILAS JOHNSON, Farrier.
 It is an absolutely reliable remedy for Spavins, Splints, Curbs, Ringbones, etc. Removes the bunch and leaves no scar. Price, \$1.50 per bottle. As a liniment for family use it has no equal. Ask your druggist for KENDALL'S SPAIN CURE, also "A Treatise on the Horse," the book free, or address DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

herd bull, and she will go on breeding herd bulls, for she is the type from which they are bred. These and many other plums will be offered to those who attend this sale, and we wish to impress on the minds of all that this is a sale of Colonel Nelson's breeding herd, cattle selected by him for his own use, and nothing shoddy or in any way doubtful will be catalogued. His instructions to his manager, Mr. Fred Glick, were: "I am too old to lie, and I want nothing offered in this sale for which any excuses must be made. Let all such go to the butcher." Write Mr. Glick for a catalogue as per advertisement in this issue.

The Treasures of the Weavergrace Herd at Auction.

In this issue appears a page advertisement of an extraordinary Hereford auction of Mr. Sotham's Weavergrace Herefords in connection with other notable cattle by other leading breeders, of which the Breeder's Gazette says: "Many are familiar with the strain under which Mr. Sotham has been laboring for months, and when it is related that his prodigious activity of the past three months has been manifested when suffering from the grip—a disease that demands total rest in its treatment—it can readily be understood that the counsels of his medical adviser are well grounded. Mr. Sotham's affairs have been put in shape so that they make no demand at present on his personal attention. His thoroughly organized office force is competent for all preparations for the coming sale, and he expects to greet his friends in Chicago March 25-27 in his usual abundant

OKLAHOMA AGRICULTURAL COLLEGE

Pure-bred Swine For Sale:
 Poland-Chinas, Duroc-Jerseys, Berkshires, Chester Whites.
 Good individuals, well bred, at hard time prices.
 Agricultural Dept. A. & M. College, Stillwater, Okla.

WILBERN BUSH, WICHITA, KANSAS.

MANUFACTURER OF
 GAS RELEASING BIT
 FOR CATTLE.
 This Bit is strongly made and durable—the mouth-piece being made of nickel and side bars aluminum—will last for years.
 For preventing and relieving Bloat from alfalfa and clover. Price \$1.00 each by mail to any address

The Excitement

is Everywhere, But the OIL and the REFINERIES and the MARKETS Are at FLORENCE, COLORADO.

Over three hundred acres of land in the producing Florence field. One producing, paying well. Another well down 2,100 feet, with 1,300 feet of oil standing in it. We will begin pumping at once. A third plant already under construction.

Capital Stock \$100,000 Divided Into 1,000,000 Shares
 Par Value 10 Cents. Full Paid and Non-Assessable.

Organized Under the Laws of Wyoming.

The Florence Field Produced
 800,000 Barrels Last Year.

\$6,000 cash and 370,000 shares of stock in the treasury. 120,000 shares of treasury stock offered at 5 cents a share, proceeds to be used exclusively for further development.

A Producer—Not a Prospect—at 5 Cents a Share!

HON. MORTON S. BAILEY, President.
 SAM'L S. LENDHOLM, Vice Pres. HON. H. E. INSLEY, Sec'y and Treas.

The Florence Consolidated Oil Co
 No. 1658 Curtis Street, Denver, Colo.

health and vigor. Meantime he is obedient to the mandate of the doctor.

It is idle to lament the loss of the Weavergrace bulls. Mr. Sotham has successfully surmounted every difficulty in a career more beset with reverses than usually falls to the lot of man, but he faces a situation at present which will command his utmost resource and from which it is wholly impossible to escape without the loss of the results of years of supreme effort. Only a few weeks ago we looked over the Weavergrace cattle with him and listened to the unfolding of his plans for the future; inspected the wonderful lot of young heifers and cows on which he was building the highest hopes, and learned his estimate of their worth to the herd and the breed. Never had a breeder greater occasion for the indulgence of pardonable pride than Mr. Sotham as he revealed in the remarkable array of Hereford richness which had resulted from his painstaking, enterprising, scientific efforts as a breeder. Few men even among his friends understand the difficulty of the heights he has surmounted on the way to the goal which he had plainly in sight. Acknowledged to be the profoundest student of Hereford history, admitted to be gifted with a rare genius in the blending of blood lines, recognized as an authority whose works had given him commanding eminence, Mr. Sotham was entering into the career of which he had dreamed so fondly for nearly a quarter of a century. No eye was ever more single to the betterment of beef cattle; no pen ever more eloquent and convincing in its preaching of the value of good blood; no advocate of a breed ever more earnest, enthusiastic, and unselfish than was Mr. Sotham. The record of no man in behalf of a breed, in words and works, compares with that of Mr. Sotham for the Herefords. No man ever so spent himself and his money in the service of a breed of live stock.

"The public generally understands that Mr. Sotham believed the future of his herd was wrapped up in Improver and Thickflesh. In his choice of Improver he had done what few breeders have succeeded in doing—he had selected a great bull to follow a great bull. On Thickflesh rested his show yard and breeding hopes. To be suddenly deprived of such props is a blow that stuns. He finds himself in such position that this loss means the reduction of the herd, the curtailment of his breeding operations, and the slow and weary re-arrangement of the steps which have during the past few years put him in possession of the magnificent collection of cattle at Weavergrace. He is thus frank with the public. Offers of aid have been declined with an appreciation of the spirit which prompted them. He prefers to take the course that he has announced, knowing that if seventy-five of the best females in the Weavergrace Herd be appreciated at anything like their worth to the Hereford breeding fraternity he will have untroubled though slow sailing over the course he has already traversed so successfully. In this situation there is a suggestion of the task of Sisyphus, who was condemned forever to roll a stone up a hill which always slipped back just as he got it to the summit; but if the Weavergrace treasures are appreciated at their true worth it will lift this burden triumphantly over the summit, and place this broad-gauged, enterprising, unselfish breeder in a position in which he can in time wield increased power for the glory of the breed and beef cattle improvement. Mr. Sotham does not ask anything on his own account; he merely asks that the hitherto priceless jewels of his herd be appreciated. But if it is warm red blood that runs in the veins of Hereford breeders, instead of a thinner, colder fluid, the answer will be a reassurance that gratitude is still a ruling power in the human mind.

Gossip About Stock.

On March 3 the first Angora goat sale was held at Chicago and from the representative sales reported it was a very satisfactory sale and an initial event.

That leading veterinarian authority and horse breeder, Dr. W. H. Richards, has two black registered Percheron stallions from imported stock, which he will sell cheap for cash to prompt buyers. Notice his announcement in the special want column.

The first auction sale of pure-bred Red Polled cattle was held at Chicago on March 8 an offering from the Dobler Farms, of Girard, Pa. The bulls sold quite low, from \$50 to \$125; the females sold at a range of prices from \$135 to \$250, the top price being \$600. One sold for \$350 and another for \$450; only three females sold above \$300. The result of the sale, however, was satisfactory to Mr. Dobler.

H. W. Cheney, propriety of Shady Brook Stock Farm, North Topeka, Kans., writes that the Shady Brook Herd of Poland-Chinas is in fine shape, with splendid prospects for several barrels of offspring pigs. To make room for these, Mr. Cheney is quoting very low prices on a very attractive lot of fall pigs, and a few bred sows that will prove a profitable investment to the buyer.

Our readers have doubtless noticed the advertisement of the Burgess & Gray Importing Company, who make a specialty of English Shire, Percheron, and Coach stallions. There is probably no firm that has more good horses to offer at the present time than Robert Burgess and his interests. The Kansas Farmer is pleased to announce to buyers of draft horses that the most representative firms of America are advertising in the Kansas Farmer, and our readers will make no mistake in giving them the preference when ready to buy.

Keiser Bros., of Keota, Iowa, write us that they received a shipment from Europe



the latter part of January and that the lot are considered by judges as one of the best importations they have yet made. Buyers will find on hands at any time a fine selection of Percherons, Shires, and Clydes, at their barns. Their buying in the old country is managed exclusively by a member of the firm and the animals are selected with great care so as to bring nothing but the best to this country. The individual in need of a good draft stallion should pay this firm a visit. Having a horse in every community in their neighborhood stands out as one of their best advertisements. Write them for a calendar or information in regard to their horses.

The combination Angus breeders' sale, held at Chicago on the 5th inst., under the management of W. C. Gavock, resulted in the disposal of fifty-four head for the excellent average of \$229. There were no sensational prices, the top of the sale being \$400, at which price M. C. Wellford, of Canton, Minn., secured the imported bull, Leader of Dalmeny 4143. The top for cows was \$450, at which prices E. T. Davis, of Iowa City, Iowa, secured the Queen Mother cow, Queen 5th, of Madison 25745; Leander Jones, of Valparaiso, Ind., secured the excellent Pride cow, Pride of Aberdeen 58th, while one of the bargains of the sale was secured by W. F. Stewart, of Flint, Mich., who purchased the Pride cow, Pride of Creston, with a fine heifer calf at foot by Imp. Leader of Dalmeny, for \$310. The excellent Blackbird bull, Blackcap Prince, consigned by M. P. & S. B. Lantz, was secured by James Blair, of Esplanade, Iowa, for \$250.

The Oklahoma Agricultural and Mechanical College has in its live-stock equipment Percheron horses; Herefords, Short-horn, Aberdeen-Angus, and Red Polled cattle; Cotswold and Shropshire sheep; Plymouth Rock chickens; and Pekin ducks. This stock is kept for use in class instruction and the study and comparison of the different breeds. Along with the pure-bred stock, scrub females are kept, to study the grading up process with the different pure-bred males. Most of the increase from the stock is sold as only a few individuals of the different breeds can be accommodated on the college farm. At the present time a fine lot of gilts and boar pigs of the pure breeds are offered for sale. These were used by the short-course students in stock-judging practice the past winter and will be disposed of now as another crop will be ready for the spring class. It is a good opportunity to get choice individuals of the different breeds of swine.

The combination sale of Shorthorn cattle, sold at Chicago, March 6 and 7, consignments from the herds of S. B. Prather & Son, Springfield, Ill.; T. J. Wornall & Son, Idartry, Mo.; C. C. Norton, Corning, Iowa; J. Frank Prather, Williamsville, Ill.; C. B. Dustin & Son, Summer Hill, Ill.; M. Forbes & Son, Henry, Ill.; Frank W. Rates, Orceola, Ill.; and Matern Bros., Mt. Palatine, Ill., was quite successful although the general average did not exceed \$500 as was expected, but was very close to it. The offering consisted of seventy pure Scotch, forty-six of which were imported. The balance had from three to four of the very best Scotch tops. The total receipts from the sale was \$44,955. Ninety-one head were sold, making an average of \$494. Sixteen bulls averaged \$455. The seventy-five cows averaged about \$502. The sensation of the sale was imported Spicy Clara, a yearling heifer sired by Spicy King. She sold to Geo. Harding & Son, Waukesha, Wis., for \$1,500. Two other cows reached the thousand dollar mark. Imported Princess Royal 60th, a 5-year-old cow bred by Marr of Scotland, sold to F. W. Ayers, of Athens, Ill., for \$1,100. Imported Minorca Maid, a 4-year-old cow, with cow calf at side, sold to F. W. Dier & Son of Read, Iowa, for \$1,110. The highest priced bull of the sale was the Cruickshank, Robin Adair 151303. He sold to E. C. Sage, of Demson, Iowa, for \$1,000.

Enterprising breeders and progressive stockmen of Kansas and Oklahoma should have a special interest in the combination sale of Poland-China hogs and Polled Durham and Shorthorn bulls to be sold at auction at the fair-grounds, Winfield, Kans., on Friday, March 21, 1902, by Snyder Bros., Winfield, and Harry E. Lunt, of Burden. This sale affords about the last opportunity this spring to secure sows and gilts bred to exceptional herd boars. The offering consists of Snyder Bros. consignment of thirty Poland-China females already bred or with the option of breeding to any of the herd boars. Null's Chief 24380, Best I Know 27644, Simply O. K. 24290, Broad-gauge Chief 25733, Priceless Black U. S. 25670, and Missouri's Black Chief's Rival comprise the sires in use. Snyder Bros. will also sell a few Polled Durham bulls, the first offered at auction in Kansas. The H. E. Lunt consignment consists of eleven sows mostly bred and five young boars. The herd boars represented in this herd are: Ideal Corwin 21534, Sealey's Model 27118, Searchlight 22513, and Look No Farther 27118. Mr. Lunt will also sell five or six unregistered Shorthorn bulls 10 to 18 months old, sired by Clair 126455, son of

THESE LOUSY COLTS

don't look well. No animal is in a condition to thrive when thousands of parasites are preying upon it night and day. Kill off the lice. It will save your feed and give your colts vigor and new life.

ZENOLEUM

is the great destroyer of lice on colts and all other animals, poultry included. It is quick death to all forms of insect life. Relieves from intestinal and stomach worms. Give the colts a chance to eat only for themselves, not for the support of pests. Zenoleum is the great barn yard disinfectant. Keeps down noxious smells and destroys disease germs. It is the great modern preventive of contagion among animals. The Government Experiment Stations use and highly commend it. Sample gallon \$1.50, exp. prepaid. Larger quantities at reduced prices. Write for "The Veterinary Advisor," 61 Bates St., Detroit, Mich.

ZENNER DISINFECTANT CO., 61 Exchange Ave., Union Stock Yards, CHICAGO.

POULTRY BREEDERS' DIRECTORY.

Black Langshans

50 Cents, 75 Cents, \$1 and up. Circular Free J. C. WITHAM, Cherryvale, Kans.

EGGS FOR HATCHING—From Barred Plymouth Rocks, of superior quality. 15 eggs, \$1; 30, \$1.50; 60, \$2. E. J. Evans, box 21, Fort Scott, Kans.

BLACK MINORCAS, biggest layers of biggest eggs. Eggs for hatching, \$1.50 per 15. Also at same price eggs from choice matings of Houdans, Buff Laced Polish, White Crested Black Polish, Buff, Brown and White Leghorns, and American Dominiques. Satisfaction guaranteed. Write for illustrated descriptive catalogue. James C. Jones, Leavenworth, Kans.

FOR SALE—NICE LARGE PURE-BRED MAMMOTH BRONZE TURKEYS, AND S. C. B. LEGHORN CHICKENS. MRS. G. L. MATHEWS, Kinsley, Kans.

EGGS—From high-scoring Rose Comb White Leghorns, \$1 per 15. Mrs. John Hill, Vinland, Kans.

EGGS FOR HATCHING—Strictly pure-bred varieties, \$1 per 15; S. C. and R. C. Brown Leghorns, S. Sp. Hamburgs, S. C. Black Minorcas, Barred Plymouth Rocks, Am. Dominiques. Also, Mammouth Bronze Turkeys, \$1.50 per 11. Satisfaction guaranteed. Vira Bailey, Kinsley, Kans., No. 316.

SINGLE COMB BLACK MINORCAS—High scoring, heavy laying, eggs \$2 per 15, \$5 per 45. J. M. Rebstock, Newton, Kans.

PURE-BRED, farm raised Barred Plymouth Rock eggs, \$1 for 15; \$5 for 100. J. A. Sawhill, Edgerton, Kans.

BARRED ROCKS—Exclusively, the farm for range. The largest flock in the west; nothing but strictly first-class show birds used. Eggs \$1.25 for 13. Jno. D. Ziller, Hiawatha, Kans.

HIGH CLASS POULTRY—Silver Wyandottes, White Wyandottes, and White Plymouth Rocks. Eggs for hatching, 15 for \$1. R. F. Meek, Hutchinson, Kans.

SIXTY MAMMOTH BRONZE TURKEYS—Two separate pens, headed by a 42-pound tom. Address Mrs. Fred Cowley, Columbus, Kans.

FOR SALE—Choice blue-barred Plymouth Rock cockerels, \$1 to \$1.50 each. Address Mrs. L. Hothan, Carbondale, Kans.

Rose Comb Brown Leghorns

Exclusively. Farm raised. Eggs per setting of 15, \$1. Incubator users write for special prices in 100 lots. P. H. MAHON, R. D. No. 3, Clyde, Cloud Co., Kans.

White Wyandottes Exclusive.

The big white kind that wins prizes and lays eggs. Stock for sale. Eggs in season.

C. H. WILLSEY, Dexter, Kans.

Have at Stud—HOBSON and NOBLE BRANDANE, sired by Imported Brandane Rightaway, possibly the best Collics that ever left England, a winner and a sire of winner puppies of either sex, for sale. Prices reasonable.

W. B. WILLIAMS, Proprietor, Stella, Neb.

G. W. SHUMAN, Ft. Scott, Kans., Breeder of LIGHT BRAHMA, BARRED PLYMOUTH ROCKS, and PARTRIDGE COCHINS.

Eggs \$1.25 for 15. Address at 1238 East Wall St.

\$5 INCUBATORS FREE

Self-regulating. Guaranteed for 3 years. Hatches every good egg. Send for catalogue No. 54. Sell six and get one free. INVINCIBLE HATCHER CO., SPRINGFIELD, OHIO.

DO IT YOURSELF.

We have made plenty of money in the poultry business and have grown from year to year until our Millbrook Farm is now the largest pure bred poultry establishment in the country. Our new year book "Poultry for Profit" will start you right. All about breeding, feeding, etc. Costs of fowls with prices; eggs in season. Book has cost too much money and experience to be given away, but we mail it for 10 cents. THE J. W. MILLER CO., Box 140, Freeport, Ill.

the Scotch bull, Champion's Best 114671. The entire offering is reported as doing nicely and superior in quality to the last Wichita offering. Intending purchasers will get a bunch of bargains as revealed by the catalogue which will be sent only on request, as per advertisement in this issue.

A. E. & F. A. Heath, of Republican Harlan County, Nebraska, are offering twenty Shorthorn bulls for sale, ranging in ages from ten to twenty months. They say this is the best lot of bulls they ever raised. They are nearly all sired by pure Scotch bulls. The bull at the head of the herd is Aberdeen Lad 154974, by Courtur 2d 137285, dam Aberdeen Maid, by Double Lavender 115031, tracing to Miss Ramsden 3d, by Nobleman (26907). There are two bulls sired by Guardian 131360, by Imp. Guardsman 108200. This bull was bred by Jno. Gardhouse, of Highfield, Ont., and he has sired some of the best calves on the ranch. There are three or four bulls sired by Phillip 5th 143559, by Prince Highland 2d 113276. He is a Young Phyllis. There are only two roan bulls in the offering, others are all reds. The Heath

DON'T SET HENS the same old way when our new plan beats it 10 times. 100 Egg Hatcher Costs Only \$2. Over \$4,000 in use. 10,000 sets. 1000 agents wanted for 1902, either sex. Pleasant work. Big profits. Catalog and 100 Egg Formula FREE if you write today. Natural Hen Incubator Co., 8 185 Columbus, Neb.

\$15 A WEEK AND EXPENSES for men with rigs to introduce our Poultry Mixture. Straight salary. We mean this. Enclose stamp. EUREKA MFG. CO., Dept. 47 East St. Louis, Ill.

INCUBATORS AND BROODERS

BEST HOT WATER PIPE SYSTEM. Simple, durable, economical and safe. Hatches stronger and more chickens from 100 eggs than any other. Prices reasonable. 96-page illustrated catalog of Incubators, Brooders, fancy poultry and poultry supplies free. C. C. SHOEBAKER, Box 320, Freeport, Ill.

VICTOR INCUBATORS

The simplest, most durable, cheapest first-class hatcher. Money back if not as represented. Circular free; catalogue 6c. We pay the freight. GEO. ERTLE CO., Quincy, Ill.

200-Egg Incubator for \$12.50 Perfect in construction and action. Hatches every fertile egg. Write for catalogue to-day. GEO. H. STAHL, Quincy, Ill.

SHOEMAKER'S POULTRY

BOOK on "Incubation and Management for 1902." 160 pages, over 100 illustrations of Poultry, Incubators, Brooders, Poultry Supplies, etc. How to raise chickens successfully, their care, diseases and remedies. Diagrams with full description of Poultry houses. All about Incubators, Brooders and thoroughbred Poultry, with lowest prices. Price only 15c. C. C. SHOEMAKER, Box 344, Freeport, Ill.

HELP

out a poor crop by using Burr Incubators and Brooders. They are money makers. The best at bottom notch prices. Catalog free. We pay the freight. BURR INCUBATOR CO., Box F 12, Omaha, Neb.

FOR THE WIFE AND CHILDREN.

Get an incubator that they can run; one that will do good work from the start and last for years. The Sure Hatch is made of California red wood, with 12oz. cold rolled copper tank, Hydro-Safety Lamp, Climax Safety boiler and Corrugated Water regulator. Send for our big free catalog. It gives actual photographs of hundreds who are making money with the Sure Hatch Incubator. Our Common Sense Brooder is the best. Send now. Sure Hatch Incubator Co., Clay Center, Neb., or Columbus, O.

"THE HIAWATHA"

is the only Incubator on the market that heats the corners first. It is self-regulating, self-ventilating and requires no supplied moisture. It has been pronounced by poultry experts to be the most successful hatcher yet invented. We pay freight to any railway point in the United States. Send for free catalogue. THE HIAWATHA INCUBATOR CO., Hiawatha, Kansas.

THE ALL ROUND INCUBATOR

THE IOWA

has no Cold Corners but equal heat and ventilation in the egg chamber. Our methods are endorsed by prominent poultrymen because they succeed when others fail. Our FREE Catalogue will prove our claims.

IOWA INCUBATOR COMPANY BOX 57, DES MOINES IOWA

DO YOU FEED SWINE? For the most practical swine paper, giving up-to-date methods and market reports, send 10 cents in silver for four months trial subscription. Regular price 50 cents a year. Address BLOODED STOCK, Oxford, Pa.

ranch is only two miles south of town and extends to the Kansas line on the main line of the Burlington & Memphis, and the branch to Oberlin, and it connects with the Chicago, Rock Island & Pacific at Almena, Kans. All fast trains stop at Republican. There is a telephone to the ranch. Call them up by phone, and they will meet you at the train. Their prices are very reasonable when you consider the breeding of their herd.

During a recent visit to the Glenwood Stock Farm, at Chiles, Kans., we notice that Mr. C. S. Nevius is using for his feed-grinding and pumping work an Oldsmobile with great satisfaction. This machine is advertised in the columns of the Kansas Farmer and seems to meet with great success wherever used.

The officers of the newly organized Nebraska Poland-China Breeders' Association are: President, E. B. Day, of North Bend; vice president, A. T. Shattuck, of Frosser; secretary-treasurer, Roy McKelvie, of Fairfield; W. H. Havens, of Fremont; C. H. Beebe, of Elk Creek; and E. H. Andrews, to Kearney, were appointed on a committee to draft constitution and by-laws.

Manwaring Bros., Lawrence, Kans., in a recent letter regarding a change in their advertisement of Berkshire swine, say: "Stock has done fairly well this winter and sales were better than we expected them to be. We do not intend to sell any of our pigs of spring farrow, but hold them for a public sale next October. We have several good pigs of fall farrow for sale at reasonable prices."

Wm. McBrown, proprietor of the Fall River Herd of Hereford cattle, at Fall River, Kans., laid the foundation for his present herd in 1897 by the purchase of Louisa's Bloom 71970, by Bloom 47575, out of that great old patron, Louisa 21607. He also had nine cows whose sires were Corcoran 47976, Jurymen 30279, August Wilton 30614, and Anxiety Boy 47708. About one year later the Louisa's Bloom lost his life in a fire, which necessitated the purchase of a new herd-bull, Darling Star 54302, a grandson of The Grove 3d was secured, as well as eleven head of young cows very strong in Anxiety Grove 3d and Wilton blood. Howard 87721, by Louisa's Bloom 71970, out of Julia Anxiety 66926, she by Jerseyman 30279, and is of Mr. McBrown's own breeding. He has proved himself a great sire of the low down heavy type of Herefords, which they offer in their young bulls now for sale. These animals range in age from 8 to 26 months and have plenty of size and are in the pink of condition. See their advertisement and write for detailed information.

Mr. Will H. Rhodes, of East Lynn Stock Farm, who has become famous as a breeder of registered Hereford cattle and Large English Berkshire hogs, writes us that Elma Lady, the highest priced Berkshire ever sold in Kansas City, together with other animals bought at the same sale, have arrived in good condition at East Lynn, and he thinks that they are the best lot, taken altogether, that ever came out of Kansas City. Elma Lady holds the record as being the highest priced Berkshire sow now in Kansas, and Mr. Rhodes is already booking orders for March pigs. During the past week two imported Herefords from Mr. Armour's herd at Kansas City were added to East Lynn herd. Both of these consist of young cows of which Benzoline 138283 was calved March 24, 1900, and bred by J. R. Hill, Oretan IV, Herefordshire, England. Bashful 138479 was bred by J. Smith, Monktonport, Herefordshire, England. Mr. Rhodes is a progressive young breeder who believes in getting the best only. His advertisement will be found in another column of this week's paper.

S. Y. Thornton, Blackwater, Mo., who has enjoyed a very nice trade in Kansas and Oklahoma, now places his advertisement in the Kansas Farmer. The Rose Hill herd of Duroc-Jersey hogs was established fifteen years ago, with foundation stock from S. E. Martin, Thos. Bennett, Burpee and Holmes, and has been kept up and improved to what it now is by very careful selection of breeders from Mr. Thornton's own herd and the best that could be found in Ohio, Indiana, Illinois, Iowa, and Missouri. His herd boar, Prince 8477, sired by Sensation, the champion of the Indiana State Fair in 1899, was a hog that weighed 1,000 pounds. He now has forty head of good, lengthy, deep-bodied gilts, of the type that bring large litters of pigs. A few of them are bred for March farrow, but the greater part are for April. He also has a good lot of 6 months gilts and boars ready for service, all from large, prolific sows. Mr. Thornton has had his spring pigs, by the carload, average 300 in December, with not a chub or throw-out in the lot, and this, too, with no feed but corn or pasture. He will price his stock worth the money and guarantee them sold as represented. All hogs are eligible to record.

Mr. Joseph Watson, of the well-known firm of Watson, Woods Bros. & Kelly Company, of Lincoln, Neb., sailed Wednesday on the Oceanic, and will return, leaving Liverpool on the Georgic, sailing April 6 with twenty head of black Percherons. This firm have already received four importations of twenty head each, within the last six months. Their regular importations arrive, as they advertise, every sixty days, but owing to their heavy trade they have made one extra importation. They now have on hand, at South Omaha and at Lincoln, Neb., a large number of the very finest black Percheron stallions, big weighty horses with lots of bone, style, finish, and action. They also have a large number of English Shires of the same description. The blood lines of these horses are the very best, the Brilliant blood predominating in the Percherons, and the blood of old "Harold," the greatest draft stallion of any breed, living or dead, predominating in their Shires, in fact they have one 5-year-old stallion sired by this famous horse. This firm handles nothing but the highest type of either breed, every horse being personally selected by Mr. Watson, who has an international reputation as a judge of draft horses. When asked the question, Mr. Watson said: "The reason that we are importing and selling more horses than all the balance of the importers of the West combined must be easily seen; our horses must be better and

our prices must be lower. We import nothing but the best, and sell them on a small margin of profit; and every horse that we sell brings us more customers as our horses give entire satisfaction, and we consider the battle won when our customers are pleased."

The announcement that there will, on April 8 and 9, be another large combination sale of Herefords at Kansas City, should be of especial interest to a large number of our readers. One hundred and fifty head will be sold and following are the contributors: H. D. Atkinson, Napton, Mo.; W. S. Allen, Raymore, Mo.; Geo. B. Baker, Maryville, Mo.; T. F. Burwell, Colorado City, Col.; C. G. Comstock & Son, Albany, Mo.; B. H. Downing, Sturgeon, Mo.; E. A. Eagle & Son, Rosemont, Kans.; Benton Gabbert & Son, Dearborn, Mo.; Jas. A. Gibson, Odesa, Mo.; F. L. Johnson, Parkville, Mo.; S. H. Johnson, Parkville, Mo.; Jones Bros., Comiskey, Kans.; Gudgell & Simpson, Independence, Mo.; Est. of G. W. Novinger, Pegley, Mo.; Scott & March, Belton, Mo.; C. A. Stannard, Emporia, Kans.; S. L. Standish, Hume, Mo.; H. A. Schwanndt, Laclede, Kans.; W. E. Spears, Richmond, Kans.; H. B. Watts, & Son, Fayette, Mo.; J. W. Wampler & Son, Brazilton, Kans.; R. T. Thornton, Kansas City, Mo.; D. E. McArthur, Billingsville, Mo.; L. B. Chappell, Mt. Leonard, Mo. As will be noted, a large proportion of these are breeders who have not heretofore made public offerings outside of the association's combination sales, and in each instance these breeders are consigning a few head of the very best young stuff in their herds. It is needless to add that the drafts from the larger and better known herds will be representative ones, and the entire lot of cattle will be of a class that should find a host of appreciative purchasers. This sale was not planned with the idea of making a record-breaking average, and the breeder, farmer, or ranchman who will attend this sale can undoubtedly purchase some well-bred, useful breeding stock at very moderate prices. A large number of the females included are due to calve shortly, and the bulls are strong, lusty fellows that are ready for immediate service. Catalogues will be sent upon request, and you should not delay writing for one. Address Gudgell & Simpson, Independence, Mo.

THE MARKETS.

The Week's Grain Market Review.

Topeka, Kans., March 10, 1902. The markets showed signs of firmness throughout the entire week, and closed with an advance of from 1 to 2 cents per bushel on both wheat and corn and with quite a bullish sentiment prevailing in grain circles. Shipments from Argentine to Europe were a little larger, and over the million bushel mark; with Danubian shipments somewhat less than the week before. The English government reported the English growing wheat crop at 69.7 against 8.1 per cent for the corresponding time last year, and with a somewhat reduced acreage. Crop statisticians report a good prospect for the growing wheat crop but admit that rain is needed very badly throughout Kansas, Texas, and Oklahoma, and the drought must be relieved at once or serious damage may result. Exports of wheat from both coasts (including flour figured as wheat) amounted to 4,096,000 bushels and stocks of both wheat and flour are decreasing abroad, which augurs well for a better demand for this cereal from European countries.

Primary receipts are decreasing, especially in the northwestern cities where they were only 1,710 cars this week against 3,145 cars a week ago. Total primary receipts of wheat at all the terminal markets of the United States east of the Rocky Mountains were 2,236 cars against 3,674 cars a week ago; this decrease ought to be in favor of better prices. The world's shipments are also decreasing some. The visible supply of wheat decreased nearly a million bushels last week and a better demand existed throughout the week for wheat in all positions. The government report issued this afternoon puts the amount of wheat in farmers hands on March 1 at 156,000,000 bushels, or 23 per cent of the crop. If this guess is correct, it shows that there has been an enormous consumption of wheat since the beginning of the crop year, July 1, 1901. If to the government estimate is added our stock of wheat in both the visible and private elevator supplies, it will develop that we have already exported and consumed over two-thirds of our 1901 wheat crop, with almost four months to provide for before new crop supplies can be expected. So far we have exported 186,000,000 bushels of the 1901 wheat crop. If this average should hold out, our stock of wheat will be pretty low by July 1 next, but as the world's wheat crop was the largest for many years, it is not probable that our exports for the next four months will average up with the last eight months, and a sharp advance can not be expected on that account, besides, two or three private crop experts claim the government report is from thirty to forty millions of bushels too low. But whatever the outcome may be, the fact remains, that prices were healthy last week and will probably remain firm for some time. The great factor from now on, will be crop condition. If the growing wheat prospects should deteriorate on account of crop damage, it would be a very easy matter to force prices up considerably, even away above the prices obtained last December. But this is in the dim future.

Receipts of corn are decreasing everywhere, and there were only 1,430 cars at the principal terminal markets last week, against 1,840 cars a week ago, in comparison with 3,770 cars for the corresponding week in 1901. The Southwest is still receiving a great deal of Iowa and Illinois corn through the gateway of Kansas City, but shipments out of Kansas City at this time are larger than the receipts, and Kansas City stocks are being gradually reduced. Prices throughout the week were firm, and the demand was strong. Exports of corn continue at the minimum on account of the high price in this country; total exports since July 1 amount to less than 25,000,000 bushels in comparison with 137,000,000 bushels for the same time a year ago. The government in its report this afternoon gives the amount of corn in farmers hands on March 1, at 29 per cent of the crop, approximating 394,000,000 bushels. If to this is added the visible and private elevator supply, it will show the lowest corn reserve at this time of the year for a great many years, and this con-

I SELL FARMS

no matter where located. I can sell yours. Send description and cash price and learn how. If any of the following properties interest you, write for full description:

80 acres, Independence, Co., Ark.; fair buildings, stream on land, orchard, land partly fenced, 10 miles to railroad; \$200.

161 acres, Independence Co., Ark.; good buildings, orchard of 2½ acres, about 104 timber, good water, 12 miles to railroad; \$2,000.

33 acres, Kenton Co., Ky.; no buildings, some timber on land, suitable for suburban home, one-half mile to railroad; \$28,400.

131 acres, Barry Co., Mo.; good buildings, stream through farm, 5 acre orchard, 17 acres timber, 4½ miles to railroad; \$3,500.

80 acres, Pulaski Co., Mo.; no buildings, orchard, 20 acres timber, 4 springs on land, one-half mile to railroad; \$1,200.

40 acres, Benton Co., Mo.; poor buildings, small orchard, stream on land, 18 miles to railroad; \$175.

160 acres, Cook Co., Minn.; no buildings, located in mineral belt, 5 miles to railroad; \$4,000.

160 acres, Phelps Co., Mo.; excellent buildings, 4-acre orchard, 40 acres timber, stream through land, 10 miles to railroad; \$3,000.

160 acres, Furnas Co., Neb.; no buildings, soil adapted to corn, wheat and other cereals, 2 miles to railroad; \$3,000.

550 acres, Sagunche Co., Colo.; good buildings, 6 acres timber, some small fruit, stream on land, land well fenced, railroad on land; \$5,500.

500 acres of timber land, Montgomery Co., Ga.; principally pine, very valuable for turpentine, convenient to several railroads; \$5,000.

145 acres, Floyd Co., Ind.; 35 acres timber, stream on land, excellent buildings, orchard, good markets, 1½ miles to railroad; \$6,000.

147 acres, Kane Co., Ill.; good buildings, 20 acres timber, orchard, fine springs, land well fenced, 2 miles to railroad; \$14,700.

126 acres, Warren Co., Ky.; 7 acres timber, excellent buildings, orchard, large stock pond, good dairy farm, 3 miles to railroad; \$12,500.

50 acres, Anoka Co., Minn.; 3 acres timber, good buildings, 2 wells, 1 mile to railroad; \$2,500.

160 acres, Clark Co., Kans.; no buildings, spring on land, some timber, 3 miles to railroad; \$500.

160 acres, Clark Co., Kans.; fair buildings, orchard, creek on land, some timber, 4 miles to railroad; \$750.

2278 acres, Coryell and Bell Cos. Texas; good buildings, stream on land, peach orchard, land partly fenced, fine climate, 4 miles to railroad; \$33,000.

80 acres, Cedar Co., Mo.; good buildings, 2 acres orchard, fine spring of water, good poultry farm, 5½ miles to railroad; \$1,400.

W. M. OSTRANDER, 1496 North American Bldg., Philadelphia, Pa.

dition ought to reflect on the market soon or later; but as in the case of the government wheat report, there is quite a difference in the figures made by the government and those of private statisticians. The government reports the corn reserves much higher than do other sources of information.

The report on oats is 20 per cent with a possible supply of 130,000,000 bushels in farmers hands.

Markets closed as follows:

Chicago.—No. 2 red wheat, 83½ to 84c; No. 2 hard winter wheat, 77 to 78½c; No. 2 corn, 61c; No. 3 corn, 59c; No. 2 oats, 44½c. Kansas City.—No. 2 red wheat, 82c; No. 2 hard wheat, 74c; No. 2 corn, 62c; No. 2 white corn, 65½c; No. 2 oats, 46½c.

F. W. FRASIER.

Kansas City Live-Stock Market.

Kansas City, March 10, 1902. A continued diminution in supplies was the feature of the cattle trade here last week. Receipts were 22,600 head, against 27,000 the previous week and 27,900 a year ago. A large part of the loss fell in the

fat-cattle division, the supply of prime offerings being especially light. Fewer topsey steers in proportion to the run were offered during the week than in any similar period this season. The markets ruled fairly active and generally steady or strong each day. On Wednesday a short reaction set in, but this was followed by a stronger market, and the week closed with prices 10 to 15c higher on the better class of steers. Floods in the East blocked the outlet for the previous week's export cattle which were finding their way to the seaboard, and naturally curtailed orders somewhat. The local demand was good, however, and could have handled more stock. Owing to the light supply of butcher heifers and steers, packers took a great many cattle that were no more than fit to go back to the feed-lots. The top on corn-fed steers for the week was \$6.35, given on Friday. The let-up in the receipts of corn cattle seem to indicate that feeders have about exhausted their supply. This, coupled with the better tone of the fat-cattle market makes a good outlook for future prices. It is a foregone conclusion that light weight cattle, suitable for the butcher trade should sell relatively high

TREES

THE BEST IS THE CHEAPEST. We furnish a Certificate of Genuineness that my stock is TRUE TO NAME. A full line of Fruit Trees, Roses, Shrubbery, Ornamental and Shade Trees. Send for Illustrated Catalogue and

Price List Free. Address

W. F. SHELL, Proprietor. WICHITA NURSERY, Wichita, Kans.

THE FARMERS' MUTUAL HAIL ASSOCIATION

TOPEKA, KANSAS.

This association is to furnish protection to its members against loss or damage to their growing crops by hail. The officers are under \$50,000 surety bonds to the State of Kansas for the faithful performance of their duties. The Company's headquarters are at Topeka, Kans., and under the management of some of our best citizens. The officers and directors are well-known men of excellent standing.

The law under which we are organized took effect as late as March 15, 1901. To organize in compliance with this act necessarily consumed considerable time, and we were very late in getting into the field. Notwithstanding this, we did a nice business, paid all losses in full, and paid 3 per cent of the premiums back to the members. We did not hear a single expression of dissatisfaction from any one of our members. For further information, call on of our local agents, or address,

W. F. BAGLEY, Secretary, Topeka, Kansas

We also make Castings in Brass and Grey Iron Patterns, Models and Machine Work.



(Patent applied for.)

PULVERIZER AND ROLLER.

Made of 20 to 28 wheels, 24 inches in diameter. A 6-foot has 20 wheels. An 8-foot has 28 wheels. Packs the soil and pulverizes it and leaves the surface so that wind will not blow the fine dust away. Wheels loose on axle, and can make a square turn without dragging. \$2,500 is what the use of our roller brought to one man here in Shawnee County for 100 acres of corn. In 1901 Mr. Harley Browning near Kansas City used one of our rollers and raised as good a crop of corn in 1901 as was ever raised on the land. Another man netted \$100 worth of potatoes per acre in 1901

Topeka Foundry, Topeka, Kansas.

all spring, but until lately the feeling in heavy stock was slightly bearish.

Veal calves broke 25 to 50c during the week, the packers finally rebelling from the high values which they had been forced into paying. Best veals sold around \$6 and \$6.50. Medium weight stockers and feeders slumped off 25 to 50c. Plenty of feeder orders were at hand to take care of the heavy weight stuff, but the big supply of lighter cattle broke prices.

Light hog receipts were the feature of the week, the supply amounting to only 41,000 head. There was a marked, but moderate advance of 5 to 10c during the week. Top was \$6.57 1/2, about \$1 higher than the same time in 1901. Light hogs continue to move freely, which indicates a disposition on the part of farmers to be sparing of corn. Values here soared above Chicago and St. Louis, tops at the end of the week being about 5c higher than these two places. Provision stocks are beginning to record decreases from a year ago, and it is thought this will bull the live-hog market as the spring advances.

Sheep sold off about 10c during the week. Arrivals were moderate at 13,500 head, but the run in the East was liberal. Top lambs brought \$6.40, and wethers \$5.50. Salesmen all continue to predict \$7 lambs before the end of March, but the buying end evidently favors \$6 more.

Horses and mules sold strong all week. The movement in the former was active and brisk, but in the latter was rather slow, although prices held up well. Fat stock continues to be the cry of the dealers. Horses and mules with flesh are at a premium, and command much more in proportion than do the thin arrivals. Farmers are advised to put a little flesh on their animals before shipping, as it will pay to do so.

Elgin Butter Market.

Elgin, Ill., March 10, 1902.

The quotation committee announce but-ter 25c.

Publisher's Paragraphs.

To our subscribers who are about to re-new their subscriptions, we would say: We can send you Kansas Farmer one year, and Semi-Weekly Capital for \$1.25. Or Kansas Farmer and Breeder's Gazette for \$2. Address, Kansas Farmer Co., Topeka, Kans.

Mrs. Julia Ward Howe, who has given to the world so freely of her rich person-ality through her poems and lectures, and whose name is identified with the leading movement for the advancement of her sex, is the subject of an admirable illustrated article in the New England Magazine for March.

"Farmer Brighton," Fairfield, Iowa, ad-vertises, in our columns, his famous "Swine V. Stock Marker and Calf De-horner." It prevents swine rooting. It also mars effectually cattle and sheep as well as hogs. It is unsurpassed as a calf dehorner. For particulars, write to ad-dress above.

Mr. W. W. Vansant, Farragut, Iowa, one of the nabobs of the corn-growing world for the last twenty years, says: "I use the St. Joe lister. I list my corn because I like that plan the best one year with another, for making good sound corn, corn that stands up always and matures out in good season, and that best stands the drouth. The St. Joe lister throws the best furrow and therefore puts the corn plant in best position to go ahead of the early weeds. The St. Joe does the work, first, last, and all the time, and is the plow for me, and I always want the best of every-thing."

See the Pedersen watch proposition. It should be of interest to many hundreds of our readers who want a durable, beautiful and up-to-date timepiece at the very closest price at which such watches can be sold. Remember that Mr. W. L. Pedersen is a well known and reliable business man of Clarinda, Iowa, who does business on a large scale, occupying his own property—one of the best brick blocks of that city, and living in his own residence property. He is reliable, responsible, and always to be found at his place of business. His business proposition is worthy your hearty and careful consideration. Secure his cat-alogue and see for yourself that you can trade with him to your advantage.

Ross & Terrell, seed-corn growers at Farragut, Iowa, have had a good trade so far this season. A Kansas Farmer rep-resentative was at their store-house last week and found them as busy as a hive of bees when clover is in bloom. The lead-er in their trade has been the yellow var-ity, Excelsior, a fine yielder and one of the most perfect types of field-corn grown. Early orders for this variety can be filled promptly and surely. Another fine early corn is Early Gem. The white varieties are Iowa Silver Mine and White Rose. You can know all about these different var-ieties by securing the descriptive circular and asking for samples of corn. These samples are sent in neat packets, by re-turn mail, without loss of a day's time. Many send their orders for a single bush-el, or a half bushel, of one or more var-ieties, and then they make up a single order or a neighborhood order, accordingly. All orders are filled true to sample. Write at once for these samples.

SHEEP Must Be FREE FROM WORMS
Worms consume both profit and sheep.
We stop the loss and guarantee the
profit. Write for circular telling how.

TEN DAYS FREE TRIAL
allowed on our bicycles. We ship on
approval without a cent deposit.
1902 MODELS, \$9 to \$15
1900 & 1901 Models, best makes, \$7 to \$11
500 Second-Hand Wheels
all makes and models, good as new \$3 to
\$8. Great Factory Clearing Sale.
RIDER AGENTS WANTED
to ride
a exhibit sample. Kansas bicyclist's most money distributing
catalogue. Write at once for prices and special offer-
Dept. 246F
MEAD CYCLE CO. CHICAGO, ILL.

Special Want Column.

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

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

CATTLE.

FOR SALE—Registered Hereford bulls, 12 to 15
months old, good ones; our own breeding. Will sell;
Worth the money. H. B. Clark, Geneseo, Kans.

FOR SALE—Several choice registered Hereford
bulls; also one or two heifers. My herd is strong in
the Anxiety, Wilton, and Grove 3rd strains. Prices
reasonable. Thomas White, Salina, Kans.

BEULAH-LAND FARM—Has for sale young Red
Polled bull calf, \$50. Cows and heifers, \$75 up. Poland
Chinas, choice and cheap. Wilkie Blair, R. R. 1, Gi-
lard, Kans.

FOR SALE—A thoroughbred Hereford bull, 4 years
old, weighing 1,800 pounds. Splendid breeder, his
spring calves now weighing 800 pounds. Call on or
address A. Woodcock, Bronson, Bourbon Co., Kans.

FOR SALE—My herd bull, Model 14794, he by Glen-
dower 103387. Ought not to use him longer. Is good
enough to head any herd east or west. Is red, extra
heavy bone. Will be 4 in May next, and weigh about
1,800 pounds; no trade. L. F. Parsons, R. R. 3, Salina,
Kans.

FOR SALE—Or trade for one equally as good—my
Shorthorn bull, Roscoe 138818. Gentle and a good
breeder; 4 years old. O. A. Rhoads, Columbus, Kans.

FOR SALE—Four Galloway bulls, 1 and 2 years old;
also a few year-old heifers, all registered, and good in-
dividuals. Thos. Gribben, Hope, Kans.

I HAVE 15 registered Aberdeen-Angus bulls for
sale, from 8 to 24 months old; also some choice females
that must sell. A. L. Wynkoop, Bendena, Kans.

FOR SALE—Three pure Cruickshank-Shorthorn
bulls. Call on or address H. W. McAfee, Topeka,
Kans.

THE STANDARD CATTLE COMPANY has 12,000
acres of the richest land in the west; and will receive
applications from tenants desiring to lease land. We
also want men with families to work in beet-fields.
Correspond with Standard Cattle Company, Ames, Neb.

D. P. NORTON—Dunlap, Kans., will sell long and
short yearling Shorthorn bulls at price of calves.

FOR SALE—Three registered Hereford bulls; also a
few high-grades. Inspection of foundation stock in-
vited. A. Johnson, Clearwater, Sedgwick Co., Kans.

SHORTHORN CATTLE SALE—I will offer at
public sale, 1 1/2 miles south of Marysville, at 2 o'clock
p. m., on Tuesday, October 15, 17 registered Short-
horns, 19 high grade Shorthorns, and 3 thoroughbred
Jerseys. Lewis Scott, Marysville, Kans.

HORSES AND MULES.

FOR SALE OR TRADE—The best acting, 15-hand,
3-year-old black jack in Kansas; would prefer thorough-
bred Red Polled cattle. E. E. Potter, Sterling, Kans.

STRAYED OR STOLEN—Bay horse, white spot in
forehead, short tail, one white hind foot, 12 years old.
Return to G. A. Real, 405 Monroe St., Topeka, Kans.

STRAYED—February 25, bay filley, 3 years old, no
marks or brands. Return to John Howard, 210 East
Fifth Street, Topeka, Kans. and get reward.

FOR SALE—Two black registered Percheron stall-
ions, from imported stock; Will sell cheap for cash if
sold soon. Call at 213 West Fifth Ave., Emporia,
Kans. W. H. Richards.

HAMBLETONIAN STALLIONS—For sale, 2 fine
stallions, coming 4 and 5 years, splendid individuals.
Six crosses Hambletonian 10th blood and tracing direct
to Justin Morgan. W. A. McCarter, Topeka, Kans.

PERCHERON STALLION FOR SALE—A pure-
bred, black, 4 years old; a magnificent breeder, with
pedigree unexcelled. W. T. Pence, 1335 Topeka Ave.,
North Topeka, Kans.

TWO BLACK JACKS cheap for cash. Will ex-
change for other stock. Box 8, Moran, Kans.

FOR SALE—On account of my moving I will sell
very cheap two Percheron stallions and one 16-hand
jack. S. S. Spangler, Ness City, Kans.

FOR SALE OR TRADE—For a good jack, my
Percheron stallion, dark gray, weight, 1,700 pounds; a
fine breeder and a sure foal-getter of high-class horses.
Address W. Q. Hyatt, Carbondale, Kans.

TO TRADE—For draft stallions, one of two good
jacks. J. Sharrock, Girard, Crawford Co., Kans.

FOR SALE—A car-load Coach-bred mares, 2 to 5
years old. All bred from native mares. W. Guy
McCandless, Cottonwood Falls, Kans.

FOR SALE—One span of well-matched, black work
mares. Brookhaver Bros., Eureka, Kans.

FOR SALE OR EXCHANGE—A fine 3-year-old
road stallion, should at maturity be 16 1/2 hands high
and weigh 1,200 pounds. A nice bay and good mover,
with plenty of Hambletonian blood in him. Call on
or address C. O. Chapman, Lakin, Kearny Co., Kans.

FOR SALE—French Coach stallion, Bismark 1925.
Address C. E. Hayes, Stanley Iowa.

FOR SALE—Black Percheron stallion Montherer
13162 (24057), 12 years old, weight 1,800 pounds; an extra
breeder; price \$400. Address G. W. Southwick,
Riley, Kans.

FOR SALE—Four big black jacks. Address J. P.
Wilson, Wellsville, Mo.

FOR SALE—Two jacks 5 years old. One Shire and
two Belgian stallions. Address Chas. H. Giffin,
Scandia, Kansas.

FOR SALE—At a bargain—young draft stallions.
A. I. HAKES, Eskridge, Kans.

PROSPECT FARM—CLYDESDALE STALLIONS,
SHORTHORN CATTLE AND POLAND CHINA
HOGS. Write for prices of finest animals in Kansas
H. W. McAfee, Topeka, Kansas.

SHEEP.

FOR SALE—Thirty full-blood Shropshire ewes
and lambs. J. L. Bass, Route 4, Ottawa, Kans.

FOR SALE—Plain Merino ewes, 150 head; Merino
rams, 45 head; at low figures for quick sale. L. C.
Walbridge, Russell, Kans.

SWINE.

FOR SALE—2 pedigreed Duroc-Jersey boars, one
yearling of Washington strain and one July pig. Nice
colors and form. H. A. J. Coppins, Eldorado, Kans.

SOME EXTRA nice fall pigs. Poland Chinas, both
sexes. For sale at bargain counter prices. Also a few
bred sows. H. W. Cheney, North Topeka, Kans.

LARGE ENGLISH BERKSHIRE BOARS, sows
and gilts, safe in pig to two of the best boars in the
West, for sale. E. J. Oliver, Lone Spring Farm, Dear-
born, Mo.

SEEDS AND PLANTS.

STRAWBERRY PLANTS
Best varieties, true to name. Also, raspberry, black-
berry, dewberry, gooseberry, currant, rhubarb, peach,
pear, apple, plum, cherry and grape vines. J. C. Ban-
ta, Topeka, Kans.

SEED POTATOES Choice ones, true
to name, raised by
owner. J. P. Davenport, Mendota, Ill.

GREENHOUSE PLANTS Carna-
tions, Coleus, Roses, Fuchsias, Heliotropes, Geranium sorts.
Samples by mail, 1 doz. 25c. Mrs. T. Montgomery,
Larned, Kans.

BERRY PLANTS For Sale—40 varieties,
moderate price. Send
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SEED CORN—Choice, large yellow 1900-grown, \$1.50
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ENGLISH BLUE-GRASS SEED—\$2.00 per statu-
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Seamless American "A" sacks, 17c.; 3 bushel to sack.
Write, Jno. S. Gilmore, Fredonia, Kans.

FOR SALE—2,000 bushels choice seed—1,500 bushels
of cane-seed, \$2.75 per cwt.; 200 bushels yellow milo
maize, \$2.50 per cwt.; 200 bushels black hulled White
Kafir, \$2.50 per cwt.; 100 bushels alfalfa-seed, \$5 per
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house), Florence, Kans.

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sacked, \$2.50; seed-corn, several varieties, per bushel,
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Dwarf Essex rape, per lb., 8 cents; per 100 lbs., \$7.
Write for catalogue. Trumbull & Co., Kansas City,
Mo.

FOR PRICE LIST of Strawberry, Raspberry and
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rence, Kans.

WANTED—If you wish to buy or sell corn, oats, hay,
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feed line, correspond with us. Western Grain & Stor-
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HIGHEST PRICE paid for cane seed, alfalfa, millet,
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SOME BARGAINS in farms and ranches. Corre-
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AGENTS.

WANTED—A good, active man with horse and wa-
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vestigation. Imperial Stock Food Co., 902 Jackson
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sas Avenue, Topeka, Kans

MISCELLANEOUS.

WANTED—Pasturage reasonably near Topeka for
50 head cattle; all one brand. Address, stating terms,
Thomas Page, North Topeka, Kans.

FOR SALE—Page Woven Wire fencing. O. P. Up-
degraff, General Agent, Topeka Kans.

FOR SALE—Farm and county rights of Singley's
Boss pig-trough. Pigs can't get in it to waste feed;
easily made and cheap; can be put on old troughs.
Send for circulars and prices. J. J. Singley, Meade,
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HAY FOR SALE—50 tons good prairie hay. James
Stephenson, Clements, Kans.

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Positive Cure for Rheumatism. Ingredients powerful
but inexpensive. Will last for months. A cure ab-
solutely certain. Not taken into the stomach to de-
stroy it. F. E. Hamel, Capital Ave. North, Lansing,
Mich.

WHY WAIT until the middle of May to put your cat-
tle on pasture, your alfalfa is usually large enough by
April 1. Bush's Gas Releasing Bits prevent Bloat.
See ad elsewhere in this paper.

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VISITORS TO TOPEKA—Rooms for rent for tran-
sients, northwest corner 12th and Polk Streets, Topeka,
Kans. Meals served. Mrs. E. Porter.

WOOL WANTED—We have just completed our
New Woolen Mill in North Topeka and want at once
200,000 pounds of wool for which we will pay the mark-
et price. Write us if you have wool for sale. Western
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Man or Beast. Druggists, 25 and 50 cents. Trial size
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we wish to close out cheap. Call on P. W. Griggs &
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you can afford to pay. H. C. Thompson,
Peabody, Kans., on Santa Fe and Rock
Island roads.

The Stray List.

For Week Ending February 27.

Greenwood County.
STEER—Taken up by Frank Dibert,
Bachelor Tp., on February 15, 1902, one
red and white steer, short yearling.

Rawlins County, A. V. Hill, Clerk.

CALF—Taken up by Paul Goettl in Hern-
don Tp. (P. O. Herndon), on October 20,
1901, one black female calf; valued at \$8.
Also taken up by same, one black male
calf, white spots on head; valued at \$8.
Pottawatomie County, A. P. Scritchfield,
Clerk.

STEER—Taken up by W. W. Philipps, in
Green Tp. (P. O. Stockdale), on November
9, 1901, one red and white or roan steer, de-
horned, 2 years old; valued at \$30.

Week Ending March 6.

Johnson County—J. G. Rudy, County Clerk.

CALF—Taken up by M. S. Glynn, in
Olathe tp., (P. O. Olathe), February 8, 1902,
one dark red heifer, has horns and ap-
pears to be of Western stock; valued at
\$15.

Week Ending March 13.

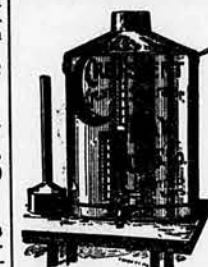
Montgomery County—D. S. James, Clerk.

MULE—Taken up by Stephen Stille, in Parker tp.,
(P. O. Coffeyville), February 12, 1902, one large, blue
mare mule, 18 years old.

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Dueber-
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The best ladies' watch in the world. 14 kt. Gold-filled. 25 years' guarantee. Assorted engravings. Buy at Wholesale and save the middleman's profit. Send for catalog.

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TREES and PLANTS THAT GROW and bear fine fruit. We grow thickened, large stock. Honest dealing. Low prices. We pay freight. Budded Peaches 6c; Grafted Apples 6c; Concord Grapes 2c. English or German catalogue free. CARL SONDEREGGER, Prop. Box F, Beatrice, Neb.

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Apple, 3 to 4 ft., \$3.50; Cherry, 3 to 4 ft., \$4.50; Peach, 3 to 4 ft., \$4.50, per 100. Catalog of all varieties free; it will pay you to have it. Address Bower Nurseries, Box 8, FAIRBURY, NEBRASKA.

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Grown in Kansas and Missouri

Address J. G. THAYER & CO., Atchison, Kas



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Grandest foliage and flowering plant yet introduced. Leaves 3 to 5 feet long by 2 or 3 feet broad, perfectly immense, and make a plant which for tropical luxuriance has no equal. Added to this wonderful foliage effect are the mammoth lily-like blossoms, 12 to 15 inches long, snow-white, with a rich and exquisite fragrance. Plants bloom perpetually all summer in the garden, or all the year round in pots. Not only is it the grandest garden or lawn plant, but as a pot plant for large windows, verandas, halls, or conservatories, it rivals the choicest palms in foliage, to say nothing of its magnificent flowers. Thrives in any soil or situation, and grows and blooms all the year, and will astonish every one with its magnificence—so novel, effective, free growing and fragrant.

Fine plants, which will soon bloom and reach full perfection, 25c, each; 3 for \$1.00, 5 for \$1.50 by mail, postpaid, guaranteed to arrive in good condition.

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40 Concord Grape Vines for \$1.

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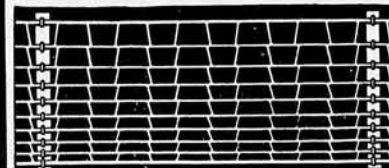
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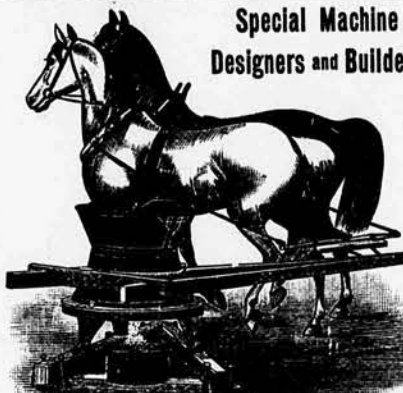


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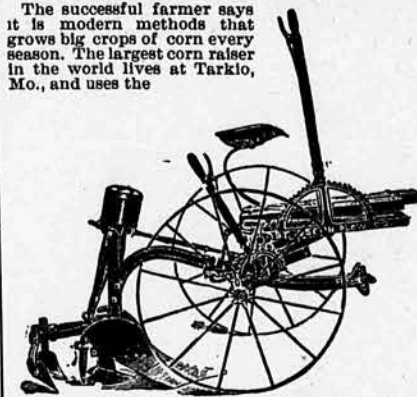
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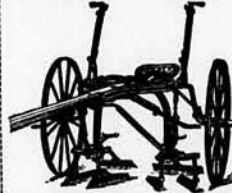
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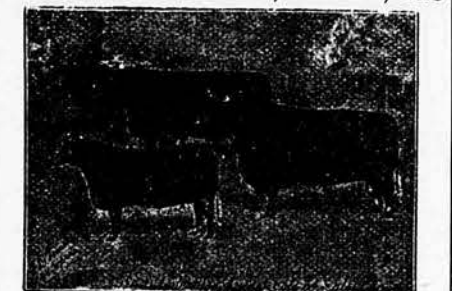
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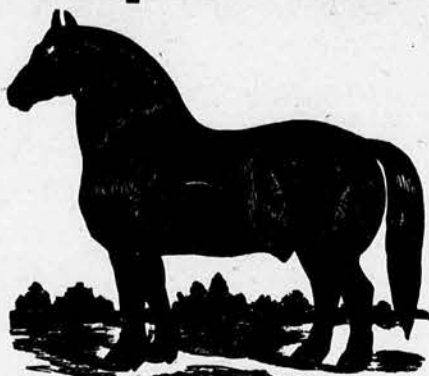
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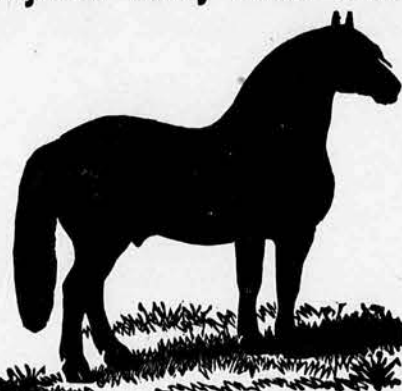
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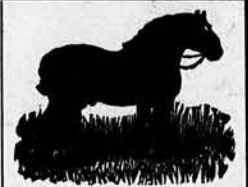


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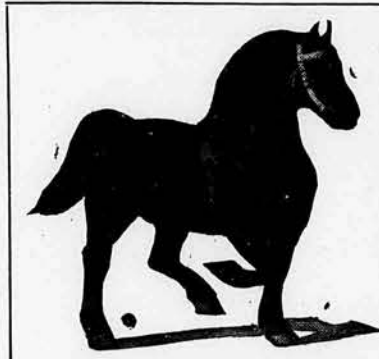
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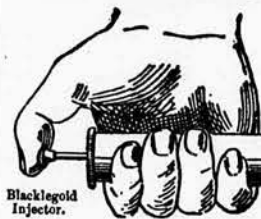
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