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Kansas Improved Stock Breeders' Association

A GREAT MEETING OF STOCK-BREEDERS.

The Twelfth Annual Meeting Held in Representative Hall, State Capitol Building, January 6-8, 1902. The Sixth Annual Banquet, the Great "Bumper" Event.

Officers for 1902.

President.....E. Harrington, Baker
Vice President.....Chas. E. Sutton, Russell
Secretary-Treasurer.....H. A. Heath, Topeka
Assistant Secretary, H. W. Cheney, North Topeka
Directors—J. C. Robison, Towanda; H. W. McAfee, Topeka; Col. J. F. True, Perry; F. H. Avery, Wakefield; R. S. Cook, Wichita.

"It was the best ever held," was the expression heard on all sides at the close of the twelfth annual meeting of the Kansas Improved Stock Breeders' Association. The program was carried out almost to the letter as outlined. The numbers on the program and the discussions, throughout, were of unusual excellence and merit.

The attendance and interest greatly exceeded that of any previous session. There was a very large increase of new members, so that the membership of 1902 promises to reach, if not pass, the five hundred mark.

Governor Glick made a model presiding officer, and had not his vigorous protest prevailed, he would have been unanimously elected again.

The breeders' sixth annual banquet, complete report of which appears in this issue, was the most enjoyable feature of the kind in the history of the association. No one present will ever forget the evening, owing to several new innovations.

Secretary's Annual Report.

H. A. HEATH, TOPEKA.

The year 1901 has been the most flourishing in the history of the association, and to-day we have the largest active membership, and with every indication that the year 1902 will show a material increase over last year. Never before has there been such a receipt of advanced memberships as this year.

We have already received up to and including Saturday, January 4, 1902, 123 membership applications for 1902, of which number 91 are new members, and still there are more to follow. Our total membership for 1901 numbers 284, and does not include the names of 1900-members who renewed their membership for 1901. It is the top-notcher record for members since the consolidation with the Kansas Semi-Breeders' Association in 1899 brought the membership up to 172. In 1900 it increased to 188, and last year, 1901, the membership advanced to 284. If the good work and interest continues the present year should realize at its close at least 500 active members. It ought to be 1,000.

By reason of a very expensive report in 1899, we started in the year 1900 with a deficit of $60.90; but recent prosperous conditions have overcome that, as shown by the following statement of our resources for 1901:

RESOURCES FOR 1901.	
Total cash receipts for 1901	$258.00
Due from members and sundry accounts	89.50
Total resources	$347.50
EXPENDITURES.	
Deficit of 1900 after paying the Secretary-Treasurer $50	$ 38.40
Other expenditures for 1901	275.29
Total expenditures for 1901	$313.69
Balance credit for 1901	33.81

The expenditures shown include all expenses for the eleventh annual session, and about $40 for a portion of the expenses of this, the twelfth annual session. This includes all expenses up to December 31, 1901. The plan hereafter is to close the books with the year.

Your secretary has grown gray in the service of this association, but since he was so handsomely watched by the indulgent members two years ago, and voted a salary of $50 per annum, he has had a most earnest desire to show his appreciation and earn the salary. The duties seem to have multiplied tenfold, and the officers and directors have felt it incumbent to see that he earned his salary by permitting him to do all the work. So, if the program is not right in every particular, please blame the secretary; he is always guilty. I think that, however, we have the best program in the history of the association. It is the result of suggestions received from members, and so far as it was practical, they have been utilized in this program.

What members should do to strengthen and further improve the works, usefulness, and influence of this association:

First, be an active member fifty-two instead of one week in the year. Carefully preserve everything of value you have learned or observed that has benefited your business or the great live stock industry.

Second, induce other breeders to become members of the association. Every member can easily add one or more new members. That would mean much—probably a thousand members.

The key-note of success in the work of this association was sounded by our distinguished president, who was elected during his absence from a part of one session, as a reward for the only time he was ever tardy, who, when introduced, said:

"Mr. Chairman and gentlemen of this association: I thank you for the honor conferred upon me. I was not present when the selection was made, and I did not understand the congratulations of friends when I entered the room this morning. Had I been here I should certainly have declined the election, and insist that my good friend, Mr. Robison, should have remained as your president, because I think he is the ideal farmer of the State of Kansas, and should have held the place. I am out of the business of breeding stock, but I have not lost my interest in the work, and I take more pleasure in visiting herds of any line of good stock, and in talking with the pioneers of Kansas breeders than in anything else. But I promise to discharge the duties of the ensuing year to the best of my ability, and want to see every member here to-day present next year, and bring with you as many as you possibly can. It is to the benefit of yourselves as breeders, and the State at large, that you should be here. You may come here and give this association the benefit of your years of experience and receive some in return that may be valuable to you."

Ex-President C. A. Stannard, in his annual address in 1900, said:

"Another suggestion I would offer is that this association should have a standing committee on needed legislation, and we think that the Legislature should make a small appropriation to pay for publishing and mailing our reports, so that they might be had by farmers and those interested, on application. And in regard to a State fair, I believe we have made some progress, and I hope to see the time when Kansas will have a State fair that we may point to with pride, such as Illinois has. Now, I had hoped that Kansas would not be the last State in the Union to make appropriations and arrangements for a State fair, and as long as the Legislature in old Missouri held out, there was hopes, but Missouri has changed. She has decided to show and not be shown. I hope when we do get a fair that it will not be least, if it must be last."

One year ago your late president, J. W. Robison, urged the following:

"Your society in connection with dairy, poultry, and other kindred societies should receive aid in publishing their proceedings, and placing them in the hands of Kansas farmers so that all advice in these lines may become well known in every household within our border. Our society, in connection with enterprising breeders and a wide-awake Kansas newspaper, the Kansas Farmer, managed by your worthy secretary, placed twenty thousand copies of your last year's proceedings in the hands of farmers at a cost of less than the paper they were printed on. Such enterprise will be appreciated by the breeders and farmers."

We have on hand a big bunch of good literature at our disposal, consisting of 1,600 copies of the Stockmen's Annual, and 1,400 copies of our 1899 Annual—a 124-page book. It costs 5 cents to mail these two reports. I suggest that the members of this association mail them to their friends and customers. They will be appreciated and preserved by everyone receiving the same. Your secretary will on receipt of your list of names mail them out for you with your compliments.

It may be of interest to give you some idea of the preliminary work that has been done for this twelfth annual session. In the first place, about the latter part of November I sent out a letter to every member of the association, asking him for suggestions for consideration at this time. The response was quite satisfactory, and while it was impossible to utilize all of the wants, when we come to our free-for-all session, if the parties are not here, we can have their views presented at that time.

I sent out about two thousand five hundred invitations to owners of pure-bred stock, who are not now members, inviting them to join the association. The response has been quite satisfactory to all of these communications. The daily and weekly press of the State, and Kansas City, as well as the outside stock journals, have been exceedingly kind and liberal in their treatment in advertising this session and publishing our program. The Shawnee County members of this association have materially assisted your secretary in looking after the details incident to this meeting. They have secured special rates at the leading hotels and a list of accomodations elsewhere, so that every one attending this meeting will be sure of comfortable quarters while in the city.

The Kansas Poultry Association has given us a number of complimentary tickets to their thirteenth annual show, which is being held in the new Auditorium.

It has been the earnest effort of your secretary to see that every member of this association shall get his one dollar's worth, whether he was in attendance or not. Of course, those who attend these meetings will not be guilty of missing them hereafter, because the acquaintances made and information obtained are worth a trip across the State to any stockman, and a further compensation is the advertising you get in the Kansas Breeders' Directory, which contains only the names of the members of this association.

In closing this report, I desire to call attention to our sixth annual banquet, which will be held at the rooms of the State Horticultural Society, in the State Capitol Building, on Wednesday evening, January 8. This is the great social session of the week, and a number of distinguished speakers will be present, including our own talent, which we all know takes nobody's "dust." Tickets can be secured from the banquet committee. I desire to especially thank the membership for their prompt replies to all communications addressed them by the secertary.

On motion of M. S. Babcock, the secretary's report was adopted, the treasurer's report was referred to the financial committee, and both ordered printed in the official proceedings of this annual meeting.

President Glick appointed a committee of three to wait on Governor Stanley and request his presence at this meeting to address the association upon the subject of "Trade Relations With Mexico."

The secretary announced the previous appointment of committees, with chairmen as follows: On banquet, G. G. Burton; on reception, O. P. Updegraff; on entertainment, A. E. Jones.

On motion of Col. E. Harrington, the president appointed a committee on resolutions, to whom was referred all resolutions except those pertaining to business immediately before the meeting, as follows: Col. E. Harrington, S. S. Benedict, and J. W. Robison.

On motion of M. S. Babcock, the following committee on needed legislation was appointed by the president: M. S. Babcock, O. P. Updegraff, and E. D. King.

The committee appointed to invite Governor Stanley to address the meet-

ing returned into the hall with the Governor, and the president introduced him to the association. He spoke as follows:

Trade Extension Wth Mexoc.

GOVERNOR W. E. STANLEY.

I have been asked to talk on a question about which I absolutely know but little. The fact that I thought it advisable to call a meeting of a great many business interests here a short time ago, which has been adjourned over to the 20th of this month, does not indicate that I am at all posted upon the question.

Reciprocity has been in the air for some time. It has long been advocated by some of the strongest men in both of the political parties. The late President McKinley took quite advanced ground upon that question, and President Roosevelt advanced the idea in his message. While this matter of reciprocity was being considered, I was led to notice that the Eastern manufacturers and the large interests of the East were taking hold of this matter and trying to get these reciprocal treaties that would benefit them. As I kept a general run of it in the current news of the day, the thought occurred to me, What is Kansas going to get out of this? We are not a manufacturing State. We are a purely agricultural and stock State. I find in my short examination that the foreign trade in manufactures amounts to only a small part of the foreign trade; that the agricultural products and meat products are much greater; and that the agricultural interests and the stock interests are to be the most largely benefited by this reciprocal treaty, if carried out. I find we are practically shut out of Mexico. Except in the matter of grain produce, we are nearer to Mexico than any other agricultural State. California has about the same advantage in point of distance that we have on its flour and wheat.

A little further investigation led me to see that on our meat products and our corn products, the duty fixed by Mexico practically prohibits them from going it. It is an embargo on our shipping in there. A little further investigation led me to know that we were a few years ago shipping large quantities of hogs into Mexico. These are now shut out. It was suggested to my mind, Why can't we bring about a movement to open the doors of this Mexican market and of these South American states to the products of this State? We produce a large surplus of meat products, of seeds, of lard, of grain, of almost everything. Here is a market very near to our doors. It also occurred to me that there might be a difficulty in the matter, in the way of these reciprocal relations, from the fact that our large stock interests would object to the opening of the doors to the importation of the stock of Mexico—that is, the general stock for market—not the improved stock. I talked over the matter with some men supposed to know, and they said that it didn't relate at all to the improved stock; that there was a growing sentiment there in favor of improving the stock, and of coming into the United States for the purpose of elevating and improving the tone of their herds.

With that in view, I called a preliminary meeting—and it was a very small meeting, too—to ascertain if possible whether it was advisable to call a more general meeting. It was decided that it was. That meeting was called, representing the produce interests, the agricultural interests, the farm implements business, the creamery, and every other line of business possible; and after a pretty full discussion it was the unanimous opinion that there ought to be an organization formed in this State to get a sentiment behind this movement that might lead to the opening of the doors of Mexico and the South American states to this trade of ours. I find that the duty upon corn is prohibitive; so also is the duty on lard and upon butter; and we are practically shut out of that market on a great many of these products.

I also find in the recent development of social and political conditions of Mexico there is a continual up-going of the people. They dress better, they feed better, they are better educated, they are getting more elevated in their tastes, getting more modernized in their notions and in their lives; and it affords a splendid market to us. I believe here is a good opportunity presented to Kansas. It may do much good; it can not possibly do any harm. If we can get up a movement devoid of politics, with the business interests of this State behind it, with this one object in view, I am confident that it will help the trade and business of Kansas to a wonderful extent. There is a great opening certainly, and if we can accomplish the object of this by getting the business men interested in it, it will result in great good all around. I hope to see this association endorse the scheme heartily, and that you will see that the association is well represented at the meeting called for the latter part of this month.

Secretary Heath: This association had two or three members present at the preliminary meeting referred to by Governor Stanley, and we have been asked that this association send a strong delegation to this convention called for the 20th of the month.

President Glick: So far as the fine stock interests are concerned, when they understand conditions, they will take a deep interest in the movement initiated by Governor Stanley. Some years ago I visited Old Mexico and talked a great deal with men who were engaged in raising cattle in that country, and I found that they all took a deep interest in the introduction of thoroughbred cattle and horses. Those are the only two classes of animals that they seem to have any special interest in. The Governor of Chihuahua was very anxious that intercourse of that kind should be established with the United States. About four hundred miles west of El Paso I found another ranch controlled principally by a gentleman by the name of Major Zembleman. He raised about one thousand eight hundred bushels of wheat the year I was at his place, and had a lot of fine cattle. He had one Shorthorn bull for which he told me he had paid $1,000. They are especially interested in fine horses—draft-horses and trotting-horses. There is another interest that would be very valuable to our people in Kansas. Butter, in the City of Mexico sells for $1 a pound, ham for 75 cents a pound. You can see the advantage we would have if we could have an open market. It would be a better market for our butter than the European countries or even than our Eastern States.

J. B. Zinn: It has been my experience in Mexico that the people all want improved stock; but in buying stock in this country, with the long hauls and freight charges, the great cost of getting it there, together with the heavy duties we have to pay to get into Mexico, it becomes a very expensive matter for the Mexican to buy. I am trying to do all I can for this country—and I am shipping all the Holsteins I can. They are not able to buy the cows; I don't think, in fact, they are ready to buy cows yet. They must first learn to handle our cattle; in other words, they must learn to crawl before they can walk. Their grasses are short and not so nutritious as our grasses here; and, too, our animals from here can not stand the amount of travel the cattle have to make to get the growth on them.

J. W. Robison: Is there any duty on registered stock to get into Mexico?

Mr. Zinn: No, sir, not on registered stock. But by the time you get good registered stock there, it makes it cost them so much they are slow to take hold of it. At this time in Mexico there are thousands and millions of sheep—but nothing to fatten them on. Their crop down there in June was killed by the frost. That is when they have their main crops. They had a very short crop in December and January; so that there are parts of the country now out of feed. And that is a country in which you can not buy feed, either, no matter how much money you have, because they simply haven't got it to sell. Now, they produce oranges that ripen when we haven't an orange ripe in the United States. We could take the duty off of their oranges and let them take it off of our apples going in there, and by making a trade like that we would all be benefited. That could be done all along the line, with a great many things. It would not be necessary to take the entire duty off the sheep. They are willing to pay a small duty.

S. S. Benedict: It seems to me that we have all we want now. This association is only interested in improved stock. Registered stock you can ship into Mexico without any tariff, at any time. We don't want their longhorns here. They admit free the cattle we are interested in. What more do we want?

A. B. Hulit: In my intercourse with the Mexicans I have seen the apparent need of thoroughbred animals in that country. I have always realized that there was a market there if those people could be aroused to the importance of our stock. I took the first herd of Hereford cattle to Mexico that was ever taken in, I think. I was requested to bring a herd of those cattle to the fair at the City of Mexico, to be held in October. I took the cattle there as requested, and the government paid every cent of my expenses—something over eight hundred dollars, Mexican money. The cattle were in very good shape. They were turned on the grass about the 15th of July and ran there until about October, and they were in fine form. It was the only American herd exhibited there. There were about two hundred and fifty head of cattle in all. The Swiss cattle predominated; they are the thoroughbred cattle that are being sent there. I was the only Gringo down there, and it was quite an experience. Their methods of conducting a fair are not unlike our own. The Mexicans are now bringing about a quarantine against the low-altitude cattle, which is a good thing. At the windup of the fair we won the grand prize. During the fair I received calls from some nine hundred different cattlemen and others interested. They were astonished. They had never seen anything like it before. In the Agricultural Society of Mexico there are 3,200 members; they have an official paper that goes to each and every one of those members. The question of tariff on the importation of cattle into Mexico is not a serious matter. The importation of cattle to Mexico, under the circumstances as they exist now, is not a vital question. The conditions have changed there, and are continually changing. At Chihuahua we have a $650,000 packing-house, and there is refrigerating service on all the railroads. Last year there were 92 breeding bulls shipped to Mexico; this year there were 1,195. This shows the increase. It behooves you all to look after the trade in Mexico. The trade is there. The cattle that go there now are gradually rising in quality and the trade must be looked after before it is too late. Mexico is not a butter-making country. One firm in Topeka shipped 350,000 pounds to Mexico last year. The duty on butter is 10 cents a pound. There were nearly a million pounds of lard shipped to Mexico last year, paying 10 cents a pound duty. These matters ought to be looked after. It is worth your while, and you will make no mistake in looking after it thoroughly. There is a change taking place in Mexico and it behooves you to take advantage of that change and to keep abreast of it. Three thousand six hundred Mexican boys came to the United States to school last year, and it is these young men who are interested in this more than the old men. There is only a very small portion of Mexico that is subject to Texas fever. The high altitudes exclude it, although they have deaths down on the coast; but none in the high altitudes from Texas fever.

Mr. Babcock: I move you, gentlemen, that President Glick, Secretary Heath, and all members of this association attend this convention called for the latter part of this month; that they all be delegates to that meeting from this association. (Motion adopted.)

Secretary Heath read a paper by D. P. Norton, of Dunlap, the author not being present at the meeting. The paper is as follows:

Color in Shorthorns and the "Red Craze."

D. P. NORTON, DUNLAP.

You ask for suggestions of subjects for discussion at the meeting of the Breeders Association. I have been studying the question, and, from the standpoint of a Shorthorn breeder, would say that I think the subject of color in Shorthorns, or what is called the "red craze," is of overshadowing and overwhelming importance to-day, and is beyond any other subject of the Shorthorn breed.

No one but a breeder of Shorthorns can realize the importance of this question. The greater number of the small stockmen of this great West, or at least of Kansas, Nebraska, Texas, and the Territories, who own small farms, have the color craze so deeply imbedded in their craniums, that they will pay more for a poor-grade Shorthorn bull that is red, than for a good and high-class bull that is pure-bred of any other color. They care more for red hair in a bull than for pedigree or quality and will pay more for it. As a rule the first question they will ask is "have you got a red one?" not "have you got a good one?" A great proportion of them have

not yet learned the difference between the grade bull and the pure-bred bull.

Our stock journals do not discuss these questions in their columns as they should. If the people were sufficiently educated upon these questions it would be a safe prophesy to say that the value of the stock, in the States mentioned, would, on an average, be worth double per capita in the next six years over what they are now worth. All the breeders of pure-bred cattle could not supply half the demand for pure-bred bulls. The general ignorance upon the subject of grade bulls, and their comparative value with the pure-bred stock for breeding purposes, is so great as to be appalling. In my opinion the breeders of pure-bred stock could make no better investment than to employ a competent man to write a book upon the subject and give it free circulation among all owners of cattle, irrespective of breed, in the territory before mention. Then why not give these subjects a discussion at your meeting?

I know it to be a fact that thousands of stockmen are so shrouded with ignorance upon this subject that they can not believe it possible that a red bull can be produced by a roan dam or sire. Some even look upon white marks as evidence of impurity of blood. The consequence is that these people will buy red grade bulls in preference to pure-bred sires of other color. The Hereford breed is equally interesting with his Shorthorn brother in this question, for with the ignorant stockman a bull with a white face has been satisfactory to thousands upon thousands of those who prefer the Hereford, no matter what percentage of Hereford blood he may have carried, and the general failure of the great Hereford to produce satisfactory results has caused untold damage to that breed.

J. B. McAfee being called for, said: "I don't think I am qualified to talk on that subject. Of course, I breed the red, but simply because the public wants it. If it wanted roans or whites or anything of that sort, I would favor it. It is nothing to me what the color is just so the public wants it. That is the reason I breed the purest reds I can get."

Governor Glick: I am reminded of the man in Iowa who carried the red idea so far that he insisted on writing the pedigrees in red ink. [Laughter.]

J. W. Robison: Whenever you find a great mass of reasonably intelligent people that demand a certain article, there is generally a reason for it. It is conceded, I think, by everybody that there is a great demand for "red" by a large number of intelligent breeders, and therefore there must be some reason for it. That reason in my mind is that the red crosses much better with the native stock than any other color. It improves the color of the native stock more. The red universally improves the color. I don't think there is any Shorthorn man here that will contend that a red, or roan, or white is any better as in indivual animal than any other color. They are probably equally desirable if kept up in that color, but when you let it branch out it is not so good. The great mass of people that have tested it prefer the red, especially where it is to be used on grade animals.

President's Annual Address.

G. W. GLICK, ATCHISON.

I am sure the gentlemen composing this association take a deep interest in annual meetings. I feel that I have a right to make this assertion, basing it on the lively interests that have characterized your zeal and devotion to its interests in the past.

Three hundred breeders of fine stock have enrolled themselves as members as this association, and I hope this membership will be largely increased at this meeting. There are many who have commenced breeding improved stock who I hope will join this army of progressive breeders and help swell the ranks of the enterprising and energetic men who are now doing so much for Kansas.

It has been a prosperous year for your business, with no serious drawback to mar the happiness of your calling. The demand for improved stock has kept you busy supplying the demand. You were not scared out of business by a few extra warm weeks nor by the neglect of the United States Weather Bureau to supply all the moisture you thought you needed, nor by the grass in your pasture becoming neglectful of the daily demand of your stock.

The Kansas breeder is full of resources and expedients and is ready for all emergencies. He surmounts all difficulties and comes to the front at the end of the conflict with the happy reflection that he is still in business and has paid no costs in a court of bankruptcy.

A view of his beautiful animals basking in the sunshine in the blue-grass or clover pastures makes him forget any little slips in the economy of his year's business.

The live-stock interest is the foundation of the greatest wealth-producing interest in our State. It is not affected materially by the flood or drouth or the capricious contingencies of the sun or sky. Hence the stock-breeder is certain of his reward, and adds wealth to the State, and furnishes meat for the markets of the world. He may be a benefactor who, by his skill, doubles the amount of grass that may be grown from the soil. But much greater is the man who, by his skill as a breeder and feeder, can produce, in 1902, a beef steer that at the end of two years will weigh as many pounds and make much better beef and sell for more money than his ancestors could produce after feeding a beef steer till he was seven years old. The feed and risk for five years makes a material difference when the cost bill appears on the ledger.

The example of the energetic and enterprising breeders of Kansas is doing much to improve the live-stock interest of our State. Their example teaches the farmers of our State the benefit, yes, the necessity, of improving the character of their live stock. They demonstrate the necessity of improving the character of the live stock of the country if the farmer wants to make any profit on his stock. They demonstrate the fact that scrub stock does not pay either in the feed-lot or in the stock market.

It is not pretended or claimed that every farmer should be a breeder of pedigreed stock, but it is claimed, and has been fully and conclusively demonstrated and proved, that it does pay for every man who raises live stock of any kind, to use pedigreed males.

This practice is becoming more general yearly, as the breeders of the common stock are learning the necessity of improving the character of their stock if they are to get cost for it at the stock-yards or markets. They are learning that the use of pedigreed males, in three or four generations, adds a very large per cent to their values in the improved quality of the flesh for human food, in the earlier maturity for market and less time for feeding and risk, and in the increased value.

By the use of improved males $10 to $20 would be added to the value of each beef steer in the market, making a sum far in excess of the amount necessary to pay the entire levy for State taxes for any one year. I am pleased to state that this system of improvement is rapidly being adopted and is materially changing the character of farm animals and furnishing a market for thoroughbred males, bred by the enterprising and thrifty members of this association.

The demand for such males is largely in excess of the supply. But buyers want good animals and the breeders who know how to breed and feed scientifically will always have customers for all their surplus, either male or female.

Kansas is in the great corn-producing section of the country, and will always be preeminently a cattle- and hog-feeding and breeding State. It has no rival that can drive it from its vantage ground or interfere with its natural advancement. It is daily demonstrating its claim to first rank as a meat-producing State. Two years ago it furnished more meat-producing animals to the Kansas City market than were furnished by seven of the largest meat-producing States tributary to that market.

I have made an earnest effort to get statistics showing the number of animals sold from Kansas for the year 1901. The superintendent of the Chicago Stock Yards advises me that no separate record of the origin of shipments to those yards is kept, but that many cattle, hogs, and sheep were received from Kansas.

The superintendent of the St. Joseph Stock Yards furnishes the following statements, showing 10,043 cars of stock shipped from Kansas from January 1, 1901, to December 1, 1901, eleven months, as follows: Cattle, 107,741 head; calves, 3,597 head; hogs, 396,607 head; sheep, 30,315 head; horses and mules, 2,305 head.

Heretofore the Kansas City Stock Yards Company has kept records showing the origin of the shipments of stock, but for the past year that policy was abandoned. The shipments to those yards from Kansas for the year 1900 were as follows: Cattle, 1,104,358; calves, 46,969; hogs, 1,993,984; sheep, 310,366; horses and mules, 36,368.

These figures will give us an idea of the immense number of animals that Kansas furnishes to that market. The number for 1901 is certainly largely in excess of last year's shipments, as the total increase of 1901 over 1900 was 779,023 animals. Kansas contributed a large amount of that excess over 1900.

These figures, while they do not show exact data make a magnificent record for the live-stock industries of our State. It is to be regretted that those great marts of trade now fail to make records showing the origin of shipments. Such a record would place Kansas in the front rank as the greatest meat-producing State, and make a magnificent showing for our breeders and farmers.

Kansas occupies no mean place when we classify the active, enterprising breeders of improved stock within its borders. There are 85 members of this association breeding Shorthorn cattle; 44 breeding Hereford cattle; 8 breeding Galloways; 9 breeding Polled-Angus; 11 breeding Red Polled; 6 breeding Jerseys; and 4 breeding Polled-Durhams. There are 87 breeders of Poland-China hogs; 14 of Berkshires; 7 of Chester-Whites; and 13 of Duroc-Jerseys.

There are representatives of the different classes of horses in our association: Percherons, Clydes, and Standard-bred horses are represented by enterprising men who are in the front rank of their special calling, while some of them have bred some of the fastest horses that have won honors on the trotting course.

The list of 300 members does not contain the names of all who I know are engaged in breeding fine stock, and it should be the earnest work of each member to induce all others engaged in this laudable and fascinating work to persuade them to unite with us and help swell this stream of enterprise, and give character and thrift to the stock interest of our State.

Your vocation has been prosperous in 1901. The prices of well-bred animals have been satisfactory. The sales at the great Kansas City and Chicago shows and sales have been phenomenal. These sales demonstrate the importance of two things: The pedigree must be faultless and the animal a typical representative of its class. Here is where the skill of the breeder and feeder comes in play, and where merit pays. The character and word of the breeder has much to do with his success in his calling. It is a great honor to the breeder to have his customers say, you can rely implicitly on his word. Such a reputation is worth many dollars to the breeder. It places his character for honesty and integrity so high that its value can not be measured by dollars. Greed sometimes smothers honesty, and while the business prospect may be alluring for a while, customers will not return a second time, and no amount of effort will secure the return of a client whose recollection is seared by a false representation or a false deal. We are on the lookout for customers, and these reflections teach us that no breeder should take advantage of the ignorance of the young or prospective breeder. To such customers no animal defective in form, type, character, or pedigree should be sold, without every defect being pointed out and carefully explained. They should be informed at the outset that only the best should be used for the foundation of a herd or flock. That a bad cross or defect in a pedigree can not be obliterated. That success depends on starting right and then proper skill in mating, care and scientific feeding, success is assured. The old and experienced breeder can take care of himself. No one need try to fool him.

There is to be the greatest fair and exposition that the world has ever seen in 1903, at St. Louis, Mo., to commemorate the Louisiana purchase. There will be a magnificent live-stock show at that great convocation. I hope our State will be represented in all classes of live stock. I think I can promise that the breeders of Kansas will be there with their flocks and herds and make such a magnificent showing that every loyal Kansan will feel proud of our young Commonwealth. The State of Kansas will make a large appropriation for the purpose of enabling the great and magnificent resources of the State to be fully and satisfactorily displayed. The stock interest can and should make an exhibit equal to any of our sister States. With proper encouragement and financial assistance from the Kansas board of managers such an exhibit of our Kansas live stock could be made that all of us would be proud of the Sunflower State, and thank kind Providence for our casting our lots in sunny Kansas.

To make the proper exhibit of our live-stock industry the board of managers for the State of Kansas should set apart for this interest at least $15,000. I suggest that a permanent committee of five members be appointed, whose term of office shall exist for three years, with power on the part of the president to fill vacancies if any occur. It would not be advisable to change the committee while this work was being done. The changing of such a committee while the work was in progress would result in confusion and might result disastrously to our breeders.

Kansas is an agricultural State. Its prosperity and the well-doing of the people are based on its agricultural and stock-raising industries, and any measures or plans that foster, build up, and increase the importance of these two great industries, and better their condition, will always be hailed with satisfaction by our breeders and farmers.

An important adjunct and aid to our importance and prosperity is the Kansas Agricultural College. Its importance and influence is becoming more potent in its work and beneficial in its results, as the young men leaving that institution carry home to the farms the vast store of practical learning and experience that was taught them at that farmers' college and apply it to their daily work in farming and stock-raising. There is an impression prevailing among the farmers and stock-breeders of Kansas that it is the purpose of some parties to reduce the present high standard of that college in the department of agriculture and stock-raising to a lower level. That is, in short, to dispense as far as possible with the teaching of the science of agriculture, horticulture, and stock-raising. I hope this impression is not well founded. If such a course were adopted and maintained it would be an irreparable calamity to the great industries of our State. The farmers and stockmen of Kansas pay about 75 per cent of the taxes, and they certainly have a right to expect and demand that the Kansas State Agricultural College should be conducted in their interests and for their benefit, and the interests of the farmers and stockmen be advanced and improved annually, instead of being minimized or smothered.

Governor Stanley has initiated a movement to increase the business intercourse with Mexico and other Southern countries: a movement that should commend itself to every business man who believes in extending reciprocal business intercourse, wherever there is a market for the products of our State, remembering that we can not expect to sell to those from whom we refuse to buy. If that movement can be fully installed, and the Governor's plans perfected, it will be worth millions of money to our people. The breeders of fine stock will be beneficiaries of a vast business with Mexico if advantage is taken of policies that may be adopted. A few car-loads of fine stock sent to some point in Mexico, in the hands of a discreet agent, would soon attract attention, and result in many sales at good prices. Mexican cattlemen should be induced to visit Kansas and inspect the fine herds of cattle, hogs, and horses that the breeders are producing. A mutual interchange of courtesies and acquaintance would soon result in mutual trade relations with great business benefit for both countries.

Pertinent Pointers for Breeders of Pedigreed Stock.

As the editor of the Western Breeders' Journal, of Clay Center, was unable to be present, no paper was presented on this subject. Instead, the editor's assistant propounded a few queries and requested brief comments on each. He said:

"A point I wish to bring to the consideration of the gentlemen this evening is inbreeding. It is well known that nearly all of the grandest individuals of the different breeds of fine stock have been developed through inbreeding, and very close inbreeding at that. We are told by experienced breeders that this matter is like a red-hot iron—that it has to be handled with great care; that a man has to understand his business and be thoroughly conversant with the types of breeding in order to inbreed without having his stock deteriorate. The question is, just how far is it practical for the ordinary breeder to carry this inbreeding, or had he better let it alone altogether?

"Another question is with regard to

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hogs. I have heard general complant, hogs. I have heard general complaint among farmers especially, or people that raise hogs for the money there is in it, as to how far they shall be bred. Haven't they been breeding too fine, or have they. Has the Poland-China hog been bred so fine that his constitution is harmed, until he can't thrive under the rough conditions he is expected to be put under?

"Another question that has been agitated somewhat in the press is what is termed the open door for stock. Of course it is well known among breeders that in England the charges for registered stock are so high that they are practically prohibitive, and that therefore there is no pedigreed stock sent from this country to England; that it all comes the other way. I presume no one questions the fact that the stock of this country is benefited by this new infusion from England. Why isn't it equally true that the stock of England would be benefited by the infusion of blood from this country? Why is it that so many Western breeders send East for their fine stock, instead of getting it among their own neighbors in the West? And why should not Western fine-bred stock be sent East as well as Eastern fine stock brought West? And why wouldn't both sections be benefited by this transfer from one part of the country to the other?

The matter of a market for pedigreed or fine stock has been suggested. Of course we want all the market we can get, but it seems to me the market right here at home has been overlooked. This association and these breeders ought to reach the farmer. The farmer needs them. There is an immense quantity of stock over the country that needs improvement—that needs registered stock. How are we going to get these farmers? We ought to have a more practical way of doing it.

President Glick: As to the shipment of cattle to England, some of the finest herds in England now trace their foundation to American-bred bulls. Large numbers of American male and female stock have been sent to England and have been used there very extensively. You will find by an examination of herdbooks that there are thousands of English cattle now traced to American thoroughbreds shipped to England.

Colonel Harrington: Forty-five or fifty years ago my father bought a bull. He was white all over except his ears. The old gentleman said he was a perfect type of the Durham. He came from England—from Durhamshire. Now we have bred the white all out of the Durham bull and our Durhams are red. When we ship our red cattle back to England and change the color of theirs, do they accept it as the perfect type of the Durham?

President Glick: Yes, sir; the English accept the red and the roan and the white as the perfect type. They are very liberal in that respect.

C. J. Jones: As to whether we have better cattle than England, the gentleman ought to go over and attend their fat-stock shows, and then he could judge for himself. I attended their fat-stock show ten years ago last November and the like of their cattle was never seen in this country. They may not have any better cattle, but they know how to feed them. That is a question we don't understand; we don't understand how to feed our cattle. They feed them on finely chopped hay and meal, mixed, and are as careful with it as you would be with feed for your baby. When they put anything on the market it is fat. They would never think of marketing the cattle we put on the market here.

T. A. Hubbard: I want to record my vote on the side of America. The man that visits the American fat-stock show to-day will see a thing of beauty and a joy forever. We don't fatten our cattle on hay and meal alone, but we give them a balanced ration of grain—oats, corn, bran, flaxseed-meal, gluten-meal, molasses, and sugar—and we put in a little milk, if necessary. We make the beef that will tickle the palate of the King of England or any other king—even the Boers. We gave them the best cattle in the world; the smoothest, the sleekest, the nicest; and they are the best-fed and best-handled on the face of the earth. Don't talk about the Old World. It is too far from America to ever amount to anything. [Laughter and applause.]

C. J. Jones: I think the gentleman misunderstood me. I spoke of the ordinary markets of this Western country. If you knew you had to eat some of the beef slaughtered at Kansas City, it would make you sick. But when they send a steer to market in the Old World he is fat. They feed them like babies and they fatten them. I don't say but what we can go to Chicago to the stock show there and find better cattle than you can find in England. That is undoubtedly true; but when you fatten your cattle for the market of Kansas City, or the general market, you usually send them before they are ready. You lose the best part of your labor and you don't get the top prices.

J. W. Robison: The question of how to get the improved stock to the farmer is just wrong end first. It should be, How shall we get the farmer to the improved stock? The farmer who hasn't enterprise enough to get around in his neighborhood, be it near or far, to hunt up improved stock, would not take proper care, after he had it, to keep it improved. That is the fittest will survive, and the farmer who is not fit to go and hunt up improved stock (and he need hardly go out of his own county any place in this State to find it), would not take care of that stock to make it profitable. I have heard it alleged that the farmer's hogs do not thrive when they come from the hands of the feeder. Who ever heard of a hog not thriving in Kansas if it had half a chance? We must educate the farmer so he will go and get the improved stock and to take care of it; and if he has the enterprise and the vim to go ahead, in a few years he will be an improved stock-breeder himself and some other farmer will be buying of him. The comparison between European and American cattle runs through the whole line of stock. We don't want to be in any way invidious against Europeans. If we hadn't begun at the fountain head, if we hadn't got a little improved blood from across the ocean, we would have all been Indians ourselves. Here is one of the grandest characterictics of American people. They have a great big hopper here and they take Englishmen, Scotchmen, Welchmen, Germans, Irishmen, and everybody else from every country in the world. They put them into that hopper and they grind them out good, enterprising American citizens. Now, going back to the human race, it is an improvement as is is improved only; it is an improvement as the best is brought here. Why is America to-day better than many of these countries? It was the enterprising people that came from there to this country. It was the loggerheads, that didn't have enterprise enough to move, that stayed there. The improved stock-breeder that has enterprise is using the best on the market, and if there is any better in any other country, he will go there and get it and make it American. We should search the world over, after we have used all our best efforts at home, in every line. It is a lesson worth any breeder's time and expense to go to Europe and spend a few months in the various countries there seeing their methods and manner and what they have and how they improve it. When we get so we can hold our own with them, we will be doing very well.

F. P. Maguire: One question asked was in regard to fine hogs or fine breeding. I could mention breeders that have a wrong idea of what fine breeding is. Some breeders think that a small hog is the hog we need. I think this is the wrong idea. What we want is a small hog at a young age. We want a good frame that will mature young.

Col. G. H. Moore: This same question has been discussed from time to time at these meetings. I have developed a great many hogs in my years in the business. I learned, after five years of feeding, this problem in regard to the hogs. I never feed a pig a kernel of corn until he weighs fifty to seventy pounds. The cheapest feed I have found to develop a pig to get an early hog for market is milk. In connection with the milk is oatmeal, and the man who loses sight of the oatmeal for the pig, from the time he is farrowed until he is marketed, makes the greatest mistake in developing the hog. If you will feed your pigs oatmeal and keep strict account of the cost, giving them all the milk possible until they weigh fifty to seventy pounds, then put your shoats on corn, if you shall choose, or behind your cattle, you will make a hog for market at six months to six months and two weeks that will weigh from two hundred and twenty-five to two hundred and forty-five pounds. Doubtless many of you have made the test. I am speaking from experience, not from papers or books. Where many men make their mistakes in developing the hog is in burning out the pig on corn. We are aware that corn produces a certain oil that is not found in any other grain, and that oil is what produces the solid fat in the pork, and there is no grain that finishes a hog like corn. Here is the common sense: First, develop capacity, and bone, and muscle to carry the weight. How do you develop the bone and muscle? By supplying the pig with all the salt and lime and a certain per cent of one or two other ingredients thrown into the lots, letting them run to it. Never attempt to administer to your hogs in troughs or in certain portions at a time. A hog has far more sense than the majority will give him credit for, in partaking of what he thinks he needs. Provide your hogs with plenty of salt and lime and saltpetre, and you will never ring a hog; and you will never have a hog-root on your place. I say again, first develop capacity, and don't burn out the capacity. When you have the capacity and a certain amount of age, then put your hog on the corn and you will develop him into a marketable animal in the time I have stated. In regard to this inbreeding I will say something. You gentlemen have had thoroughbred hogs with long noses. What do you do? You pick the sire that has the short nose, where the dam has the long nose, and you make the cross to develop a certain nose. A hog has an ear that is long and lops down over the eye; another one has a straight, short one, that stands almost straight up. What do you do? You take the dam with the small ear and the sire with the larger ear and you make a cross to get the right kind of an ear. So on with back and limb and shoulder and ham. This is just common sense. It is nature's law, and you can't change it. The only way on earth you can bring out what you want or the points you want is to bring them together in a commonsense way. This inbreeding a few years ago was carried on to a very great extent. A number of years ago the breeders took up this question and discussed it among themselves, and they made the change then and there, and I question to-day whether very many men in this country inbreed to a very great extent—very little, and only to get a certain type of hog. The man who is breeding for market or raising hogs for market that keeps the hog in his feed lots after that hog is seven months old, I will venture to say, if he keeps a close account, is losing money. Every man should so develop his hogs that they can be put into the market at six and a half to seven months old.

A gentleman: Mr. President, when I announce my name you will think I ought to talk intelligently on this subject; but I can't. My name is Hogg! [Laughter.] I am from Ohio, and am a farmer there, and I also have interests in Kansas. I am out here looking after those interests, and that is why I am here to-day. It is said there is nothing new under the sun, but since I have heard of a hog that won't root I concluded there is something new under the sun. I am told that a hog properly fed won't root. I am glad to have that confirmed here to-night by these gentlemen; but still I don't believe it. [Laughter.]

W. S. Hanna: Instead of inbreeding, we may breed in line. That consists in uniting forms which are dissimilar in order to cure forms. Mathematically considered, it consists in breeding in the third and fourth or the fourth and fifth generation from one-eighth to one-fourth of the same blood. The reason for having hogs with small bones is on account of the great prevalence of feeding so much corn in dry pens alone, without any bone-forming material. I agree with Colonel Moore, with the exception of one thing: I can't agree with him that after the hog weighs sixty or seventy pounds, that feeding corn alone is the exact way to do it. Whoever feeds corn alone feeds an article which is about one-seventh binding and he must feet shorts or something else to correct that binding tendency. The hog needs fodder as well as other animals. That is one reason why hogs following cattle have the natural cooked mush through the cattle, and, getting what fodder they want, do better for the farmers. There are two ways in which to look at this matter, two entirely different and distinct views. One is looking at it from the standpoint of the breeder, while the other, which is Colonel Moore's view, is from the standpoint of the feeder. These are two different views, and should not be confused in considering what has been said here.

Immunity and Protective Inoculation.

J. E. SHARTEL, KANSAS CITY.

Before entering into the discussion of the subject, "Immunity and Protective Inoculation," it will be necessary to briefly describe what is meant by these two terms. The word "immunity," as applied to contagious diseases, means the property possessed by man or animals to resist an attack of a disease. This immunity or protection may be natural or acquired. To illustrate a case of natural immunity, attention is called to the fact that the ox has never been known to have glanders, that is to say, it is naturally immune against the disease. Acquired immunity may be the result of an individual having undergone an attack of a contagious disease, which renders him proof against a future attack. For instance, if a man recovers from smallpox, he is usually proof or immune against that disease. Another manner by which acquired immunity is produced is by means of the anti-toxic serums, which are now being used so extensively for the treatment of certain diseases, both in human and veterinary practice. Anti-toxic serum, or "anti-toxine" as it is more commonly called, is the blood serum of an animal that has undergone an attack of the disease for which the anti-toxine is destined. For example, if a lockjaw anti-toxine is required, a horse is rendered immune or proof against lockjaw by artificial means, and when he is thoroughly immune, some of the blood is drawn, and the serum collected by methods known to experts, and this blood serum is lockjaw, or tetanus anti-toxine. In a similar manner other anti-toxines are produced, such as diptheria anti-toxine for the human family, and it is with this particular serum that anti-toxine has scored its greatest triumph. The anti-toxines used in the treatment of animal diseases, are, however, of greater interest to veterinarians than to live stock men, and special attention will therefore be given to another means by which acquired immunity is produced, namely: Vaccination, or protective inoculation, which is now so extensively practiced by live stock owners for the prevention of blackleg in cattle, and anthrax in all classes of animals.

Contagious diseases are the result of the introduction into the human or animal system of a contagious or infectious material, which is called a virus. The process of the introduction of the virus is known as "inoculation," whether it be in the usual way, whereby the virus enters through sores or wounds, or with food or water, producing disease, or artificially, in which instance the process is usually for protective purposes, that is to say, a weakened virus, known as a vaccine virus is introduced into the system, and the individual undergoes an attack of the disease, severe enough to produce no serious symptoms, or sometimes even perceptible symptoms, and yet not too mild but that immunity results just the same as with a severe attack of the disease. In other words, if it is desired to vaccinate an animal against blackleg, it is necessary to inoculate it with the weakened virus of blackleg, called blackleg vaccine, and the animal then undergoes a slight attack of the disease, though the only apparent symptom is a slight rise in temperature, which can be detected with a fever thermometer, and in about a week the animal is immune against blackleg, provided, of course, it had reached the age when it could take the disease.

It is quite evident, therefore, that artificial protective inoculation is vaccination, or in other words, the production of immunity by artificially introducing into the system of an animal a substance which will produce a mild attack of the disease, though sufficiently strong to render the animal immune. This substance is known as vaccine virus, though the word virus is usually dropped, and the term vaccine used in connection with the name of the kind of vaccine, for example: Smallpox vaccine, blackleg vaccine, or anthrax vaccine; these vaccines being used for protective inoculation against smallpox in man, blackleg in cattle, and anthrax in all kinds of live stock, respectively.

It must be understood that blackleg and anthrax are two distinctly different diseases, arising from different causes, exhibiting different symptoms, and requiring treatment with two different vaccines. That is to say, blackleg vaccine and anthrax vaccine respectively. The time will not permit of a lengthy discussion of the symptoms of these diseases, and furthermore, those of blackleg are well known to all of you, so it would be needless to describe them. In brief we would state that the characteristic symptom of blackleg is the appearance of a swelling or tumor under the skin, which crackles on passing the hand over it. This tumor usually occurs on the thighs, though it may appear on the neck, shoulder,

breast, flanks, rump, or even head, but not below the knee or hock joint. The animal becomes lame, which lameness rapidly increases in severity; high fever sets in, and dullness, weakness, loss of appetite, and rumination are noticed. The disease is generally fatal, death taking place between thirty-six hours and three days following the first noticeable symptoms. Blackleg is a germ disease, that is to say, it is the result of the introduction into the system, either through sores or scratches, or with the food or water, of certain germs or micro-organisms, known as blackleg germs, and these, together with their poisonous products, are actually the virus of blackleg. The germs are very hardy and live in the soil for a number of years. They may be carried long distances and be deposited upon lands heretofore uninfected. The grave of an animal that has died of blackleg will keep a pasture infected for several years, and cattle grazing upon such pasture are liable to contract the disease. A stream running near such a grave will carry the infection all along its course, and grass cut near the spot will communicate the disease to the animal fed upon it. Cattle driven through a district where the germs of blackleg exist are liable to, and frequently do, catch the disease. The germs multiply so rapidly and are so easily spread that an entire herd or neighborhood may become infected from a single case.

Blackleg is an incurable disease; all remedies thus far tried have proved unavailing; and nearly all animals attacked die. The only scientific, practical and satisfactory way of contending with blackleg is to prevent it.

All kinds of remedies and methods have from time to time been tried, but invariably without permanent success. Among the drugs used may be mentioned hellebore, assafœtida, salt, saltpetre, and sulphur; and among the methods employed may be cited setoning, roweling, nerving, bleeding, driving, changing pasture, etc. It is well known that animals of good blood or in good condition are more susceptible to blackleg than inferior stock or cattle in bad condition. The idea, therefore, has been to impoverish the blood or reduce the condition. Cattle are raised and fed for profit, not for pleasure; anything, therefore, that interferes with their rapid growth is a source of loss. The less doctoring a healthy animal has the better, and it is essential for its well-being that it be allowed to graze tranquilly and remain always on full feed. All the above named so-called remedies are therefore directly opposed to the profitable conduct of the cattle business, as they retard the development and reduce the condition of the stock. Moreover, it is useless to resort to any means which will not actually protect against infection, if infection should present itself.

As to change of pasture—that is, removal of apparently healthy animals from a pasture infected with the germs of blackleg to a pasture not already infected—this is all very wall in its way, but in the case of small holdings it is not possible, and it is useless to own or rent pasture if it can not be used with absolute safety for grazing purposes. Moreover, there would be no security in making such a change, for the new pasture might become in fected at once. Bleeding an infected animal is certain to distribute blackleg germs over the pastures, thus spreading the disease, or if not already diseased, the germs may enter the cut or scarified places when traversing an infected pasture, and the animal thereby be attacked with blackleg. This method is not only useless, but doubly dangerous.

It may, therefore, be safely said that none of the remedies or methods heretofore in use have proved of any practical or permanent value for preventing blackleg. It can only be done in one way, and that is by a timely and intelligent application of the Pasteur system of vaccination.

Vaccination has been practiced for over a century, and indeed, dates from 1796, when Jenner discovered the vaccine for smallpox in the human being. Live stock vaccination, however, only began in 1880, in which year Pasteur and colleagues discovered the method of converting the virus of anthrax into vaccine virus. The anthrax vaccine is applicable to cattle, horses, mules, sheep, and goats, and has been successfully used upon about 20,000,000 animals in Europe, Australia, and America. Following this important discovery by Pasteur in conjunction with Chamberlin and Rous, the vaccine virus of symptomatic anthrax, or blackleg, as it is commonly called was developed by Aloing, in conjunction with Cornevin and Thomas, in 1884. Both the anthrax and blackleg vaccines have been most successfully and extensively used in nearly all parts of Europe ever since their discovery. The vaccination of live stock was introduced into North America by the Pasteur Vaccine Company in the spring of 1895, and the vaccines for anthrax and blackleg, respectively, placed on the market. The success of the vaccines made by the above mentioned eminent scientists, and furnished by the Pasteur Vaccine Company, is too well known to need comment at this time. So far as blackleg vaccine is concerned, the double vaccine in powder form was first used, inasmuch as it was mostly pure-bred calves that were being vaccinated, and the herds were comparatively small. However, as soon as vaccination became better known, and it was desirable to extend the system to range or common stock, the single vaccine, also in powder form, became most appropriate, and was furnished accordingly.

In 1897, Dr. Thomas, above mentoned, devsed the method of preparing blackleg vaccine in the form of an impregnated cord. As soon as the success of this method was clearly demonstrated by experiments and extensive practical tests, the cord form of blackleg vaccine, or blacklegine, as it is called, was placed upon the market by the Pasteur Vaccine Company, in the summer of 1899. This has been used with remarkable success, and the cases where it has apparently failed are too few and far between to take into account. Moreover, these failures were due to lack of appreciation of the fact that the cord was impregnated with vaccine, or lack of care in applying the cord, which was supplied in a length instead of separate doses as at present.

Although the testimony in favor of the cord form of blackleg vaccine in the United States and Canada is so emphatically in favor of this method, yet the following extract from the minutes of the meeting of the Veterinary Society of the Department of Haute Marne, France, held on April 24, 1900, under the presidency of Senator Darbot, will be of particular interest. The society resolved as follows:

"The members who have used blackleg vaccine in the form of an impregnated cord unanimously declare that it has given full satisfaction; that the results have been constantly perfect, both as regards its harmless nature as well as its effective character. The system so simple, so easy, and so convenient gives excellent results, especially if the precaution is taken to cut off the ends of the vaccinal cord close to the skin. The society congratulates Dr. Thomas upon the services that his method has rendered to cattle raisers."

When it is stated that over 10,000,000 animals are vaccinated every year with the original vaccines, it can be understood that stock owners have found that vaccination against anthrax and blackleg, respectively, is eminently successful when Pasteur vaccines are employed.

The Pasteur vaccines are the original and genuine products, and are prepared by well known, skillful, and experienced men, viz: The codiscoverers, Messrs. Chamberland, Arloing, and Thomas.

The Surest and Most Profitable Forage Plants and Grasses.

JOHN M. FITCH, LAWRENCE.

The past year has been unusually prolific in experiences tending to demonstrate the value of the various kinds of tame grasses and forage plants grown in our State, and it is an evident fact that their important relations to the stock-breeding and growing industry, has become much better understood and appreciated. Certainly, plants that have proved their ability to withstand the weather conditions of such a season as the year just closed has furnished us, may be safely depended on in almost any like future emergency. Such old standbys as timothy and red clover have made but a sorry showing the past year or two, while alfalfa has easily and successfully disputed possession as king of the clovers; and meadow fescue, or as it is commonly known, English bluegrass, has proved its supremacy among the most profitable grasses. Indeed, there appears to have come about a revolution in the old order of things in Kansas products, in the line of pasture and forage plants. Part of this may be due to chemical changes in the soil, by which its wild nature is subdued until it becomes adapted to the nourishing and growth of a new type of vegetation. But it is mainly, I fancy, because our farmers and stockmen are benefiting by the unremitting efforts of the seedsmen; agricultural editors, and others engaged in forwarding their interests in Kansas and sister States by constant trial and experiment to ascertain what forage or grass crops are best adapted to our climate, and will yield the most certain and profitable returns.

Surely, with the abundant means at hand there can be no excuse for ignorance among the patrons of husbandry, and the experience of the past years should teach us to take careful note of such results as have been shown in the respective yields of alfalfa and meadow fescue, and that they have proved most profitable under unusually adverse seasonable conditions. Since we are discussing the "surest and most profitable forage plants and grasses," it would seem at the outset that if yield, quality, and certainty in the highest degree are to determine their standing, that the question were already decided in favor of two just mentioned. A brief review, however, of the progress made in the past year's experimenting may prove interesting to the members of this association, and especially to those who, for lack of time or other causes, have been unable to follow the reports of our esteemed coworkers, Secretary Coburn and staff, of the Kansas State Agricultural College, in the bulletins issued from that institution at various times on this and kindred subjects.

I am not in a position to say accurately just what the increase in acreage of alfalfa in Kansas has been during the past year, but presume it has been at the least estimate fully one-third more than any one year preceding it. The season just closed seems to have been an ideal one for alfalfa so far as weather conditions are concerned, the yield of both hay and seed being abundant and of unusually fine quality, many localities reporting four crops of hay, while the crop of seed reached as high as ten and twelve bushels per acre, in several instances. For ability to resist drouth and come up smiling under conditions that would prove fatal to most other crops and still remain worthy of dependence right along year after year alfalfa is surely at the head of the procession.

In the November number of the World's Works for 1901, I recently read an article on the "Pivotal Farm of the Union," which is certainly worthy of careful perusal and thought to every man engaged in farming or raising stock. The writer states that the owner of the farm, which is situated in the central portion of Nebraska, near the Platte River, began in 1890 with a few acres of alfalfa and finding it stood the protracted drouth of that year, gave the matter serious thought, and in 1893 put in twelve acres. So entirely satisfactory did he find it that he increased his acreage till they now number 2,500, and he is still sowing more. He has chosen alfalfa as the "fundamental crop" in his "fight against the drouth," among other things, because of its habit of deep-rooting. The writer recommends "feeding the crop to stock rather than selling direct, to the end that a double profit may be obtained, the securing of a continuous income throughout the year, the affording of employment to a greater number of men, and the saving of an important part of the crop in manure." As proof of the wisdom of his conclusions he states that the owner of this model farm has been able "to rent 1,500 acres of alfalfa for a term of three years at a rental of $7,000, and in the further fact that his dairy already yields a like sum. This result being produced on land of original selling value of $7 to $15 per acre, and with a dairy of less than 200 cows."

The experience of this farmer does not vary, except, perhaps, in the magnitude of his operations, from that of every other farmer who has given alfalfa an intelligent trial. Too much can

not be said as to the importance of every detail in the foundation of the crop, since it is to be a permanent one, and all after success depends on their strict observance. The best time for planting, the preparation of the soil, the amount of seed required per acre, methods of planting, and above all the securing of choice and perfect, clean seed, are items imperatively necessary if an even, uniform stand is expected. Along the Republican River in southern Nebraska, and almost across the State of Kansas on the north, are appearing, more and more each year, the beautiful stretches of "living green," to delight the eye and relieve the landscape of its erstwhile desolate aspect in the late fall and winter months, and giving an air of prosperous fertility to the country, which in itself is no mean feature of attraction to the seeker after Western homes. And my trips, that I used to dread because of their dusty, dreary nature, I now look forward to with pleasing anticipations, instead; for the landscape is bright and attractive, the old-time sod-houses are fast disappearing, and an air of successful thrift has taken the place of undiversified sameness of a few years since.

Passing along the road last year, in early November, I saw, feeding on a field of stubble of alfalfa recently cut, ducks, geese, chickens, turkeys, hogs, cattle, and horses, and over in one corner a flock of crows were "filling up." Pretty generally relished by stock and poultry, was it not? And yet, every once in a while I hear some one say that only hogs or horses will eat it. Now, when it comes to realizing an average of three cuttings per year, a total of from three to five tons of dry hay to the acre, and with a price generally of about $8 per ton, I should like to know why that is not a "sure and profitable crop" to grow.

Meadow fescue, or English bluegrass, as it is most generally known, is attracting this year more than usual attention, and the acreage in the localities where it has been grown for some years has been greatly increased. The inquiries about it are much more numerous and the prospects indicate it will be more extensively sown in future than ever. Owing to a scarcity of the crop of seed the past season, the price ruled very high, which has stimulated the demand, and many farmers will be induced to give it a trial who have neglected it heretofore. Aside from the profit derived from the seed, the hay and pasture are of excellent quality. As the blades of the grass lie close to the earth when cutting for seed, and the seed stems extend considerably above them, they remain undisturbed by the machine, and furnish abundant and nutritious pasture during the late fall and winter months. It succeeds in almost any soil that will grow timothy or kindred crops, has life of five or more years, and may be sown either in the fall or early spring. If in the former, a crop of seed can be secured the following season. It is a good drouth resister, and an all-round profitable grass to grow. Owing to the shortage in seed, prices were higher than usual, and upwards of $250,000 were paid the growers for seed the past season in Kansas, and it is grown in only a limited number of counties at that.

The interest in Bromus Inermis, or Hungarian brome-grass, is still keeping up, and if the present year proves favorable for a thorough trial of its merits, I have no doubt it will justify all that is claimed for it. Last year the season was absolutely unfitted for getting a stand of any grass sown in the spring, and consequently here in Kansas nothing satisfactory was accomplished in experiments with this valuable forage plant. Its adaptability, however, to different climates and classes of soils goes to show that it only wants a chance to become one of our most profitable and reliable grasses. This grass is asserted to be of European origin, according to bulletins issued by the South Dakota Experiment Station, and grows in the more sterile soils in waste places, along road-sides, fields, and pastures; known to earlier botanists and praised greatly by them for its drouth-resisting qualities, hardiness, and great value as a forage plant. The same authority states that the smooth or Hungarian brome-grass "is a strong growing, perennial grass, with rather slender root stalks, and smooth, leafy stems, which are from one to three or even four feet high. It forms a tough, even sod, soon crowding out other common forage plants and weeds. It is one of the first grasses to come up in the spring on the station grounds, and is ready for grazing before many other forage plants are fairly started. It blossoms in June and the seed ripens before the leaves dry up; hence, with proper treatment, the seed may be saved and still a large amount of forage of a good quality be obtained. The fall growth is abundant and remains green and palatable well into the late fall and winter months." Also that it does not winter-kill in the least. It does not make seed the first year. The fertility of the soil, of course, influences the growth and yield of this grass as well as others, but it is claimed for it that it will grow and produce well on soils and under conditions which would be fatal to the grasses we are acquainted with. It is eaten readily by all kinds of stock and the aftermath in the field affords excellent grazing into the early winter months.

Reports from Kansas, as well as several other States, speak very favorably, in so far as it has had anything like a fair test. The reported yield is from one to three tons per acre in accordance with the fertility of the soil. The roots penetrate easily into the stiffest clay and in all cases form a dense, tough sod. It is claimed also that it will drive out the Russian-thistle and the black mustard. (Our friends in northern Kansas take note of this, please.) Like alfalfa and all other novelties, in their first introduction, the seed will be in strong demand, and those who are first in raising it will realize handsomely from their investment, and have their crop of grass free.

The North Dakota Experiment Station, at Fargo, is credited with the following reports on brome-grass as compared with timothy: "Brome-grass produced a fair amount of pasturage in the dry year of 1900, while timothy made very little growth. Animals prefer brome-grass to timothy, as shown in their grazing for 1899, when there was an abundance of both grasses, and in 1900 we have like results. There was but little difference in chemical composition between pasturage grass from brome and from timothy. The total yield per acre was much in favor of the brome-grass. Brome-grass made a fair crop of grass in 1900, while about twice as much potash as timothy. Brome-hay does not contain more fiber than the average for timothy grown in all parts of the United States. Brome-grass sends its roots down deeper into the soil than timothy and furnishes a great mass of roots in the first root of soil, and hence the soil may be expected to blow less when plowed. Soils on which brome-grass has been grown, contain more organic matter and humus than those on which timothy has been grown. Brome-grass is a better humus-former than timothy, and leaves the soil in better chemical and physical condition than does the timothy."

Object Lesons from the American Royal and International Live Stock Exposition in 1901.

C. E. SUTTON, RUSSELL.

The Royal and International have come and gone—unquestionably the greatest educators the live stock world has ever witnessed; monuments to the improved stock breeders and the live stock industry. Those fortunate enough to attend these love feasts of high-class beef producers were rewarded by seeing and comparing the masterpieces of the improved beef breeds. Housed in perfectly arranged and lighted quarters,—the most extensive and expensive in the world,—we found them —reds, whites, and roans; whitefaces and bonnie blackskins. There they were in long rows, separated by short, low partitions which were not visible when looking down the line.

It was a grand and inspiring sight, fully appreciated by the half million visitors that thronged those wide brick-paved aisles from morning till night. This perfect stall arrangement afforded every possible advantage to the interested spectators, and enabled us to make close comparisons, even though the animals were several stalls apart. As we stood admiring the cattle and watching those vast crowds move by, it seemed as though every Western farmer, stockman, and rancher must be there. Oh, that this might have been. What a wonderful change it would have wrought in the quality of the beef cattle of the West in the next five years.

Scrub bulls would have flooded the markets till bull beef at a penny a pound would have become a reality, instead of a saying. Registered beef-bred bulls of serviceable age would have been as hard to find as a suitable president for our Agricultural College.

Look! What are they? Soldiers? No; just a small army of agricultural college students dressed in suits of blue with brass buttons, or wearing long badges, bearing their college name—each squad as they entered the building giving their college Rah Rah Rah's. Sturdy farmers' sons they were, not bound for the Philippines, but for the ringside, where they were to compete for the $700 Spoor Trophy, and the Breeder's Gazette $150 cash prize, to be divided among the most expert in the agricultural college judging classes.

These young men just merging into manhood will soon take charge of the "old homestead." This knowledge and experience gained among these high-bred animals will enable them to stock the old farm with a class of cattle that will make money, restore the fertility of the soil, and be a pleasure to work among and care for. Maybe they will, and maybe they won't, says the man who don't allow his sons and daughters these (to him) unnecessary advantages.

"Ma and I never had 'em, and I guess you kids is jest as well off without 'em."

No wonder his boys and girls leave the farm. But a few minutes spent examining the wonderful specimens of finished live stock brought here by these agricultural colleges, fed and handled by these young men, would soon convince our doubting friend that these college boys could tell dad several things about feeding steers that would cause him to scratch the mosquitoes off his back; that they had already climbed well toward the top of the "feeders' ladder." Surely those balanced rations, full of protein, carbohydrates, and fat have agreed with their animals.

When the awards were announced in the fat stock division, these college boys were more boisterous and hilarious than ever. Their yells could be heard all over the grounds.

Win? Of course they did. Champion Shorthorn steer and herd; second prize on 2-year-old; first and third on yearling; first and third on calves; third on 2-year-old Angus; second on yearling Angus. In the class for grades and crosses, open to all breeds, they won first, second, and fourth for 2-year-olds in the forty entries in the ring; second and fourth on yearlings; first and second on under 1 year old; first on calf; and champion animal in this division. In the Shorthorn specials, they won second and third. In the Hereford specials they won first and second. And to cap the climax they won the grand championship on the block.

Wonderful! I guess it was! Speaking of these college boys, an old Illinois farmer said to his companion: "Their larning hain't hurt their steers none."

The world is moving on; we must keep pace with it. Science plays an important part in stock-feeding. The agricultural college furnishes this knowledge. Send the boys and girls there that they may combine the scientific with the practical, thus making the battle of life easier and more profitable. The farmer and his son can learn more in one week spent at these shows about breeds and types—points of excellence in form and quality—than they can learn in a lifetime on the farm.

The largest steer never wins at these shows. He is bound to be rough and coarse—a freak. Freaks belong with circuses, not live stock shows. Many a farmer that never before owned a pure-bred animal invested from $200 to $500 at these shows in bulls to use on grade herds of thirty to fifty cows. Were they foolish? Why, no. Every steer calf sired by a first-class bull is worth $5 more than a calf out of the same cow sired by a scrub bull. If the breeder fattens his own steers this difference can be increased to $10.

The heifer calves he retains; four or five years finds him with a perfectly uniform herd. You will all agree that a drove of steers or heifers, all one color and type, with the quality such bulls invariably stamp on their get, will outsell a common or mixed drove, any place, from 50 cents to $5 per hundredweight. Then the satisfaction of outselling your entire neighborhood, "topping the market,"—what is that worth?

But, says the farmer, I can't afford a $200 bull. I haven't got the money. Then borrow it; pay the bank 8 per cent; it only costs you $16 a year. Use the bull three years, then sell him for $100. He has cost you, say $60, probably not over $2 a calf. Now go out and look at his heifers. Will you take $5 per head over the market price of common heifers? No, of course you won't.

My neighbor is an economizer. He used a scrub bull, and sold his calves for $10. My calves sired by a $400 Angus bull sold to the first looker at $19. His cows were fully as good as mine. A good bull is more than half your herd. He can't be too good.

You can ruin the best herd of cows in Kansas by two crosses with a scrub bull while on the other hand you can make good cattle from the poorest herd in Old Mexico by using first-class bulls for two or three crosses. Your cattle can't get too good. The better bred they are the more pounds they will make on the pasture and in the feed lot.

When you want a dog to chase coyotes you don't borrow your neighbor's pug. When you want the doctor quick, you don't hitch up your Percheron or Clyde. When you want to raise No. 1 good, market-topping steers, good enough to win at the Royal or International, don't use a scrub. Don't have a "fit" if a breeder of good cattle asks you $200 for a good bull, but go look the bull over. He will probably be a better investment than the one he prices at $100. If possible, always see the bull before you buy. I would just as soon allow my present mother-in-law to select my third wife, as to allow a breeder to select my herd bull. Not that either would be at all unfair, but "ideals" differ. If this were not so each one of these forty exhibitors in the 2-year-old steer class at Chicago would have had the first prize steer, as each expected to win before they left home.

The "range" men furnished the surprise of the show. You all know they have been liberal buyers of first-class bulls at our big sales for years at prices ranging from $150 to $300 and in several instances have paid well up in the thousands. But who ever dreamed that Texas,—yes, Texas, only a few years ago compared to that region of extreme heat—would furnish the grand champion car-load? Won in the hottest competition over train-loads of cattle supposed to be good enough to win this coveted prize, before the comparison was made.

The breeding classes at Chicago contained practically all the "Royal" winners and many others from America, Canada, England, and Scotland. In fact this show was a meeting of champions competing for the championship.

Our improved breeders, with fat pocket-books, had visited the great herds of England and Scotland and to get the "best" had paid prices of a record-breaking as well as a pocket-breaking character. Among the newly imported celebrities were Choice Goods, said to have cost $10,000; Cicely, $6,000; Missie, 153d, $6,000; Protector, $6,000; and numerous other Scotch and English winners.

But strange as it may sound, it is nevertheless a fact, that not a champion could be found among them. This simply means that America's improved stock breeders who stayed at home, had been making hay, and feeding it.

America leads in the improvements of the beef breeds. When you have the best in the world you can rest assured it is the American production. To qualify this statement I quote the declarations of Mr. Marr, of Scotland, and James Peter of England. They say, "No such sensational exhibits have ever before been made."

The fattened pure-breds were a grand lot, consisting mainly of Shorthorns, Herefords, and Angus, with a few Devons, Red Polls, and Galloways. Each breed was judged separately, but all winners showed for the various championships. From among these pure-bred animals were found the grand champion, reserve champion, and highly commended animals of the show.

You may ask, Why were these pure-bred animals here as steers? The Hereford had red markings about his eyes, a plain head and horn, and a peculiar conformation of the hind leg. Were he offered to any of you as a bull in stock condition you would have hesitated before paying any fancy price for him. As a finished bullock he was grand. The Angus, Empress Damask, was a fremartin heifer, and the Angus, Tip Top, had a star and white stockings. So you see no great breeding animals were sacrificed to advance the interests of the breeds they represented.

To the improved stock breeder, the lesson of these shows was 'Down the scrub; use pure-bred males; commence with your horses and cattle, and don't stop short of your tom cat.

National Live Stock Association.

CHAS. F. MARTIN, SECRETARY.

I am interested in all forms of live stock as much as you members, but will not touch on local conditions, feeling as I do, that you know far more about them than I do, and that an attempt on my part to expand on those subjects would cause me more embarrassment than a young man feels at the time of his first proposal to his best girl.

My theme this morning will be the National Live Stock Association, and what it is doing for the industry in general. You are doubtless aware that the manufacturers will attempt at the next

session of Congress to secure the removal of the present duties on wool and hides. To this proposition the live stock men strenuously object and it is the intention of the National Association to bring every influence to bear in keeping up the duties on both those articles. The present duty on hides is about $1.25. There are around seven million cattle slaughtered in this country every year, the hides of the greater part of which are saved for use. Should the duty be taken off and the $1.25 be lost, the producers of cattle, not the consumer, the slaughterer, or the manfacturer, will be the loser. This in round figures is $8,500,000.

It is the same way with wool. When that article is admitted into this country free, the native product will have to sell at six or eight cents in order to compete with the foreign product. Figuring on the enormous quantity of wool raised in this country every year, the loss on the staple will be even greater to the stock raiser than was that of the hides in the foregoing illustration. The National Live Stock Association is using all means within its power to hold firm the duty on wool and hides.

Another thing we stand pat on is the regulations regarding the interstate commerce act. The commerce commissions generally do their duty in a satisfactory manner, but there is no government regulation which enables them to enforce their decisions. An illustration of this is the terminal charge at Chicago. Hundreds of thousands of Southern cattle are moved into that market from the South and the shippers are charged $2 per head by the railroads for unloading them at the yards. This is a loss of $600,000 per year to the Southern shippers. The Interstate Commerce Commission has ruled that the fee of $2 is unlawful, but it is not in a position to enforce its ruling. We want the government to empower it to arrest and jail all offenders who do not obey the regulations of the interstate boards.

We are also endeavoring to secure better railroad rates for breeders' stock. The matter has been referred to the traffic associations in the different States and will probably be heard from later on.

The interstate inspection of live stock is another matter that we think should be regulated. The association does not intend to do away with quarantine regulations. On the contrary, a safe and certain system for the prevention of the dissemination of contagious live stock diseases is desirable above all things, but we do not favor the separate States having widely different methods of quarantining cattle. We believe that a certificate of health from a government inspector in one State should be sufficient to enable the shipper to unload his cattle in other States, without being subjected to special inspections and the payment of extra fees therefor.

A classified assessment on all forms of live stock is another measure we are advocating. It should be uniform in all States. There should not be a promiscuous assessing on the part of each district assessor. This reminds me of a story of a St. Joe official who went forth one morning to assess the property of an Irishman. He found a goat on the premises and at once put the animal down at $12. The owner raised a series of objections, but the assessor turned to his printed instructions and showed he was upheld by the law which said he should assess every bit of property that was abutting the street. The goat came under this description.

The question of a government live stock census is one that is being agitated by the National Association. The census of 1890 was the first one of its kind ever inaugurated by the government. It was all right as far as it went and covered the ground pretty thoroughly, but the manner of taking the census consumes too much time. It was not until 1900 that the figures for the census ten years back were available, and then, while valuable as a matter of record and statistics, they were obsolete as far as practical value was concerned, for much of the stock that was counted then is now dead, or driven out of the country. There is a bureau for grain statistics, which gleans the figures for each year's crop almost as soon as the latter is harvested. I see no reason why some similar system can not be inauguarted that will enable the cattlemen to have their yearly census as well.

The English government has agreed to admit Canadian cattle into the mother country for the purpose of being fed for the markets of the latter country. We have cattle every whit as good as the Canadian feeders, any way you wish to take them, and the National Association is trying to secure the same rights for American thin cattle in England that the colony cattle have.

A vital question with the association at present is the oleomargarine question. We are not going into that fight with the purpose or intention of injuring another industry, viz, the dairy interests, but merely for the purpose of securing to the cattlemen the same privileges that the milk and butter people have. We do not object to the tax of 10 cents per pound on oleomargarine if the dairy butter is taxed the same amount. This shows that we are not in the fight with an ax to grind, but are there merely for the purpose of securing equal rights with the dairymen. The old bug-a-boo scare that was gotten up about the unhealthfulness of olemargarine has now been disproved by the best authorities and I noticed that within the past sixty days two of the leading hospitals of Washington have discarded dairy butter from their bill-of-fare and taken on oleomargarine in its place. The claim has been made that oleo butter will not assimilate at a temperature as low as that of the human body, but statistics of medical authorities have shown the fallacy of that theory.

In conclusion I wish to say that the National Live Stock Association extends a hearty invitation to the Kansas Improved Live Stock Breeders' Association to join its membership. You Kansans have had a prosperous year, from all that I can glean, despite the fact that you have suffered from a severe drouth, and now that you are in this happy condition, I think it is a fitting time that you join forces with the National Live Stock Association and do all in your power to help the latter in its struggle for the betterment of the condition of the live-stock industry. We hope to see you in Kansas City this year.

O. P. Updegraff, of Topeka, arose at this juncture and formally presented a motion to the effect that the Kansas Improved Stock Breeders' Association join the National Live Stock Association. President Glick at once presented the motion and it was carried without a dissenting vote. Mr. Martin arose as soon as the motion was carried and thanked the breeders for their action.

Free-for-All Five-minute Remarks.

Mr. Howard: Mr. Glick has made the statement here that he had a sure cure for pink-eye. I now move that he impart to us as a public the information in regard to the cure of pink-eye.

President Glick: I am not a veterinarian. I cure my own cattle. I never lost a cow from pink-eye. I have had pink-eye prevail in my herds a few times. I used two remedies and both were effective. One was sulphate of zinc. Dissolve and use a little syringe holding about half an ounce. Turn up the eyelid and press the syringe and let the fluid spread over the eye. I would do that twice a day, and I always effected a cure. There is another cure that is effective and is more rapid when it does effect a cure. There is an old medicine called Harlem Oil, sold in bottles holding perhaps an ounce. Take a feather, dip the fine end of it into the Harlem Oil, turn up the eyelid and paint it carefully and thoroughly with the Harlem Oil. Do that twice and it generally effects a cure. If it don't cure by the third operation, it is probable evidence that it won't cure that case. I have used these two remedies repeatedly and I have never lost an animal by pink-eye. Nor have I ever lost the sight of an eye of an animal either.

Colonel Moore: If any of you ever have pink-eye in your cattle and will let us know, we will send you gratis enough remedy to cure all the pink-eyed cattle in Kansas. It is called Car-Sul Dip. There is no occasion for any of you gentlemen to ever lose a brute from pink-eye. You are welcome to send there at any time. It only takes a very little to cure. It is diluted 1 part to 150 parts of water.

Mr. Treadway: If we were going to cure a headache I am sure the method would not be simply pouring something on the head, because the disorder arises from another cause. We would go to the stomach—the origin of the trouble. Hence I would like to have an answer from the Doctor as to how to reach that pink-eye. I believe it is a disease in the system and is not simply a disease of the eye. After they have been affected in the eye some two or three weeks, they will be reduced in flesh many per cent, and surely it is not simply because their eyes are sore; but their eyes are sore because they are otherwise diseased.

Col. J. W. Robison: The cure is one of nature. I never knew a case of pink-eye that didn't get well in the winter time, whether you did anything for it or not. And I have no doubt Governor Glick's cure will work well if it is used late in the fall. [Laughter.]

O. F. Nelson: The best remedy I ever discovered was to take the animal and tie it in a dark stall for a few days, when the disease usually disappears. I have tried it a dozen times or more and it has never failed.

Mr. Sutton: I think this pink-eye in the summer, when the flies are prevalent, is carried by the flies. I don't believe it is any disorder of the system or anything of the kind. Take these animals and lock them away in a dark stall as fast as they are affected, and any cooling, soothing application will assist them in recovering. I think the flies carry it all through the herd. Every one I have put in the dark has got well.

Mr. Abbott, of Missouri: I should like to know if the Kansas live-stock people consider alfalfa bad for work-horses?

A member: I find on the farm it is the best product I ever fed horses.

Colonel Robison: I am feeding 250 horses with alfalfa. I haven't had but one horse diseased in a year. I feed it to driving-horses, farm-horses, draft-horses, and horses of all kinds. It is not a good feed for riding-horses that are to be driven fast, where they get too warm and churn up the contents of the stomach. I have mares that have grown up on alfalfa and weighed 2,000 pounds apiece. They have borne the finest kind of colts.

O. P. Updegraff: As to driving-horses, for ten years I have fed from one hundred to three hundred horses every winter, and they have lived almost entirely on alfalfa. I say "almost entirely" because that is virtually without grain. My work-horses receive no other kind of hay than alfalfa. Of course, they don't work probably as hard as some horses work here in town, with heavy loads and pulling continuously; but as a farm team they live on alfalfa. My family driving-mare, which is used almost continually every day, is fed on alfalfa. She isn't driven hard; but she lives on alfalfa as her sole hay feed. The only place where alfalfa is injurious to any kind of a horse that I ever heard of is when they are required to be driven at an excessive rate of speed. Then alfalfa won't do.

Mr. Thisler: My experience with alfalfa has been good. I like it very much and am seeding more every year.

Colonel Robison: We have tested our alfalfa and I think I know what it is. There are few things it is not good for. It is not profitable or safe to pasture ruminating animals on alfalfa. The bloat will be so great as to drive all thoughts of profit out of existence. After the frost has struck it, we can turn them on the field all right. With hogs and horses and mules there is none of that trouble at all. Alfalfa must be cured without this excessive dust—no matter whether it is first crop or third, fourth or fifth crop. Alfalfa is a filling, bulky food, and it is wholesome, without a question, for all its proper uses.

Mr. Warner: I have had two losses from alfalfa. One was from feeding it to fast driving-horses. The other was feeding it to cattle (the last cutting of alfalfa, when it was in the sweat). Otherwise I believe it to be all right.

General Discussion.

W. S. Hanna took up the question of the seller quaranteeing an animal as a good breeder, maintaining that if ever he could afford to do so, he certainly could not afford it at present Kansas prices. Mr. Hanna also spoke on the subject of barren sows, stating that in twenty-five years he had had but one such, and that in his opinion barrenness was the result of overfeeding and that the only remedy, so far as he knew, was to put the animal in thin flesh.

Mr. Maffet: I had a little personal experience in the matter of a guarantee of a Poland-China that came from a thoroughbred herd of this State, which I tried to breed. I took all her flesh off, but could not get her to breed successfully; and then I put her back in flesh. After nearly a year's correspondence with the seller, he finally told me that no demand had ever been made to make the animal good; that he belonged to some grain association, or was a member of a board of trade, or something of that sort, and made it appear that a demand must be formally made. That man had been transacting business on sharp practice methods and expected an every-day farmer or breeder to do the same. You must have good faith, truth, and honesty. The guarantee of pedigree is not worth a continental if a man's word is not good. Another instance. This time another personal experience, too. A daughter of Chief Tecumseh 2d was barren. During all the hard summer she had three apples twice a day—but I couldn't get a pound of flesh off of her. I treated her shamefully. I starved her until she ate the coal-dirt I put in her pen. I put her out on blue-grass and she refused to eat it. The next day she was down helpless, and her jaws were set. We got her up but she died from infraction of the bowels within an hour. I never made a demand to have that barren animal made good, because the man's guarantee is not worth a snap of your finger.

President Glick: I have been engaged in the breeding of Shorthorns and of hogs for over thirty years, and I want to say that the honest breeder can not afford to guarantee. A cow might be injured in calving, and would not breed after that. Should the man who sold that animal be held responsible? You could not expect him to be. An abor-

tion may be produced, which may prevent her from breeding ever after. Should the man who sold her be held responsible for the usefulness of the animal? Another thing I want to say is that the man who sells an animal can have the pedigree ready when he makes the sale and ought to do it. I have sold animals for thirty-three years and one never left my premises without the pedigree being delivered. Why should not the buyer of the animal, when promised a pedigree, get it when he gets the animal? It is his fault more than the breeder's.

Some Evils of Over Fattening Young Sows.

CHRIST HUBER, ELDORADO.

I have been waiting to say my little piece on young sows, but for fear I could not make it plain I have kept silent. To keep silent is not the best way to learn, so I will just give it in my own way. I have been raising Poland-China hogs for the last thirteen years, and do not believe I have had any of my young sows too fat for breeding purposes. I think it is wrong to have young sows too fat, because if they are too fat three out of every five break down generally before they are 10 months old, and before they are bred at all. My remedy, if I discover a gilt getting too fat, is to slack up a little on such feed as corn and give them plenty of good water, and range on which to run, such as alfalfa pasture. Such feed as ground wheat and oil-meal, also oats, makes a good ration. Last spring I went to one of our fellow breeders here in Butler County to see about a couple of nice young gilts I wanted to buy. They were among his fattening hogs and were fed all the corn they wanted.

"Neighbor, you have some nice young gilts," I said.

"Yes," said he.

I told him I might buy a couple of them, but as he was not quite ready to sell I decided to wait. I said, "Neighbor, you ought to take those nice gilts out of that fattening yard away from the corn. Give them plenty of range and light feed, or they will break down before they get to be 8 months old."

What do you suppose I saw at our fair, October 7th to 11th? Well, he had tne three gilts there, and said they had done very well, and that he was now ready to sell, and that I had better look at them. I jumped into the pen, got them upon their haunches so I could see them on their feet. They were coon-footed, bow-legged, and sunk in the back. These were the gilts which four months previous had been as straight as any I ever saw, but they had been overfed. Two years ago one of our breeders had a nice male pig shipped to him. He asked me to look at him and tell him what I thought of him. I told him that he had a nice pig if he knew how to take care of it and that some day I might buy it from him. He said he gave the pig all it wanted to eat. Last spring I received a card from him saying he wanted to sell the pig. As I was very busy I sent another man to look at the hog and describe him to me. After hearing the description and upon learning that the hog had been overfed, I decided that I did not want him.

Now, fellow breeders, I do not believe in over-fattening young sows or young male pigs—just keep them in good growing condition.

Dipping Hogs for Health and Thrift.

BY COL. G. H. MOORE, KANSAS CITY, MO.

During the middle ages a plague, called by learned physicians Asiatic cholera, visited the densely populated cities almost yearly, and claimed human victims by the tens of thousands. This destroyer was first checked and turned back in its death dealing course through the vigilance of those in authority, compelling all citizens to keep their bodies clean as well as their places of abode, and in many instances public baths were established and their use made compulsory. When these sanitary measures were the slogan and watchword, plagues invariably ceased and the terrors and fears they brought were gradually replaced with confidence and health.

The death rate in Jacksonville, Fla., for more than forty years, according to the number of inhabitants, was greater than any city of like size in America. Since proper drainage and sewerage has been established, this city boasts of the smallest death rate of any city of like size in the United States. The same has proven true in that death hole of Havana, since the American people have compelled the inhabitants to clean up all premises, both public and private, and taught the Cubans the true value of American sow-belly and corn bread.

The hog and the man, both occupants of the animal kingdom, are identical in construction and anatomy, save in the veins and pores. Both breathe the same air and subsist on similar foods, and in disposition and gentleness of character the society of the hog is often preferable to that of some people. These being facts established by nature's laws, and if cleanliness for man is next to Godliness, will not the same rule apply to the hog? By nature the hog is a cleanly animal; man alone has made him filthy, and is largely responsible for the death rate in the hog family that is chronicled by our secretaries of agriculture yearly.

What has been done to restore the hog to his healthy and contented throne that has been usurped by man, who has derived more revenue from the hog than any other product of the farm?

Believing that the hog must be clean to be healthy, I originated the dipping tank, and being a graduate in chemistry, I also made a preparation for use in both dipping and feeding. Many people engaged in hog culture ridiculed and laughed at the idea of dipping hogs, and giving the same remedy internally to rid them of their worst enemies, lice, mange, filth, fever germs, worms and indigestion. I was called a freak, crazy, an egotist, and crank. But true to my convictions, I adhered to what I believed would some day be adopted by every sagacious and successful breeder and feeder of hogs, and the thousands of hog dipping tanks now in successful operation in all parts of the country, stand as monuments to the plan I originated and have so strongly advocated for these many years. In this great and progressive commonwealth—Kansas—that produces more wheat than any other State in the Union, and more alfalfa than all the others combined, and whose banks contain over forty million dollars to loan on good security, there are in use more dipping tanks for hogs than in any other State in the Union.

Now, gentlemen, in conclusion I wish to say that if you will dip your hogs every three or four weeks throughout the entire year, always presuming that you will use a remedy that is known to be efficient, you can keep them entirely free from lice, mange, and scurvy, keeping their pores open and improving their condition to such an extent that they will be much less susceptible to any disease germs that may be unintentionally brought into your feed lots.

During the past year many leading live stock journals and representative veterinarians have advocated and are still advising the use of the dipping tank for hogs. Many men are deterred from dipping their hogs because they think it expensive. The original outlay is not great, and after your tank is installed it will last you many years, and cost you only about five cents per hog per year to dip them and administer enough of the remedy to keep their digestion in perfect condition and remove all worms and other internal parasites. You all know perfectly well that when hogs are kept in good physical condition they will be much less susceptible to, and far better able to withstand the ravages of disease. Will it pay to dip your hogs?

DISCUSSION.

Mr. Maguire: What kind of a trough or tank do you use?

Colonel Moore: A No. 20 tank, of galvanized-iron.

Mr. Maguire: How do you get the animals to this?

Colonel Moore: Through a chute fifteen or twenty feet in length, back from where your hogs enter, having it run on an angle of about thirty-five degrees down to the tank. You put on cleats two or three inches apart, so the hogs won't strain themselves. The hogs go through the chute, which is built about eighteen inches wide, one at a time. They slide into a tank, holding 150 cubic feet of water. You can dip from three hundred to five hundred hogs in an hour. As long as there is an ounce of the solution remaining it is good. The foundation of it is carbolic acid and sulphur. You can use it over and over again.

A member: What per cent of swine will your remedy cure after the swine-plague is once introduced into a herd? I understand your remedy will destroy microbes, etc.

Colonel Moore: I have saved from eighty-six to ninety-eight per cent from what people call hog-cholera.

A member: I believe it is a good thing. I don't know whether it would cure cholera or not. I have my doubts about it. The difficulty I had was in getting hogs to take it. I think you had better send something along to drench them. As to dipping, I consider it very good. I thought it was a little expensive. As to the claim of its curing hog-cholera, I would like to hear from some one who has had a different exeprience than mine. I didn't have success in curing it.

Colonel Moore: The difficulty lies with you gentlemen yourselves. As long as a hog will eat you continue (most of you, not all of you), to glut him. Should any of you ever have another sick bunch of hogs on your place, shut those hogs away from feed from three to five days, not giving them a thing to eat or a drop to drink. This may seem barbarous, but I know this from experience. As long as a hog has any fat on his entrails he is going to live. I have seen that tried and tested thoroughly and know it to be a fact. When a doctor is called in to see a patient who is threatened with typhoid-pneumonia, he says this patient must not have a thing to eat for sixty hours and begins to try to get rid of these ulcers. The hog is the same. When this hog is recovering from the fever some of you will give it corn, which is the worst thing you ever did. Being hard and rough, it cuts its way through the stiffening and the hog dies from your administering and not from the disease. We urge you in every way possible to use common sense on your own farm. Kansas, Missouri, Illinois, Iowa, Nebraska, Ohio and Indiana will bear me out that 98 per cent of all the men who use this tank succeed. If I were to go to your feed-lots I would ask you to remember to give the hog more attention and to use more common sense and to invariably have your hog squeal, or grunt, and make known that he is hungry, and then you will succeed better in the future than you have in the past.

Mr. Abbott: What does the dipping-tank cost?

Colonel Moore: The one we have built, generally about fifteen dollars on board the cars in Kansas City.

The Scotch Collie, HANDSOME NELLIE 63739, Vol. 18.
W. B. WILLIAMS, Proprietor, Stella, Neb. See Advt.

State Fair Discussion.

President Glick: Any gentleman wanting to discuss the question of a State fair can do so.

Mr. Maffet, of Lawrence: The matter of a Kansas State fair is too important a subject to let go by default. When the question is asked, "What did the prize-winner at the Kansas State fair get last year?" it provokes a smile and is usually left unanswered or met by the frank avowal that Kansas has no fair. In either event the live-stock interests of the State suffer. We have not had for years in this State a State fair, and every breeder here has been injured by reason of this fact.

A. L. Sponsler, of Hutchinson: This year I have attended the American Royal and International fairs. I was raised in a county that promoted a fair in its early history in Illinois, and next year will hold its fiftieth annual meeting. I believe in State fairs and we—the people of Kansas—should have a State fair, and it should be backed by the Kansas Legislature with a liberal appropriation.

J. W. Robison, of Butler County: I had the pleasure of visiting the Hutchinson fair last year and will say the association did everything that could be expected of an association. One thing it did was to pay the winners of prizes their premiums before leaving the grounds. These fairs have been a success. Good county fairs do much towards making State fairs. We should, by all means, have a good State fair. We have the people and the material for the making of a great yearly exhibition.

Secretary Heath: I sent out two hundred or more letters to the members of this association asking them to give me an expression of their wishes for the association. The one response, more than any other, was for a State fair, and urging the keeping up of the talk and agitation until it was an assured fact. I would like to have something done in this matter. Kansas, however, does not want a State fair unless it is representative of the resources of Kansas. The people of the State are anxious for a State battle-ground where we can show up our resources, our live stock, and every other industry. I don't believe the farmers of Kansas will be able to get a bill through the Legislature. Backed by a lot of politicians the bill would go through with flying colors.

H. W. Avery, of Wakefield: Two years ago we had this same qquestion up—didn't we Mr. President?

President Glick: Yes, sir. Two years ago a committee was appointed with instructions to prepare a bill and submit it to the House and Senate. The committed prepared a bill and appeared before the House and Senate committees and made the best argument it could, but the result was a failure to get the bill through either branch of the Legislature.

O. P. Updegraff: All of our associations have been in favor of a State fair, but we have not been able to get it, and I don't think we will get one until we all take hold in earnest. We need a State fair. It should be here in Topeka, but if we can't have it here, let us have it some place in Kansas. I hope the resolution will carry. Our trouble has been with the Legislators—not the Legislature—many of whom come here to make $3 a day because they can not earn it at home. Let the Legislature give us a decent appropriation for a State fair and we will have one which will be of benefit to the interest of farmers and live stock men and all interested, and one that will be a credit to Kansas.

S. S. Benedict: The Legislature, as everybody knows, has always had a majority of farmers. The trouble in the way of getting a State fair heretofore has been that there has been so much jealousy and rivalry. There is but one place where a State fair should be held, and that is in Topeka. The State capitol.

Geo. W. Maffet: The reason the bill for a State fair didn't go through was because this association is made up of farmers. The reason it didn't go through was because there is always something else in the minds of the Legislators. There was not money enough in this. If we could get that foremost we might get it through. We want it non-political.

W. W. Guthrie: I was one of the live members of the first State fair as-

sociation organized in the State of Kansas. I have seen county fairs rise, flourish, and decline. Since 1864, I have seen the State fair rise, flourish, and decline, and in all cases these organizations died lingering deaths. I don't believe this a sentimental question. It is a practical question. I should like to see the time come again when we could go through the rise and flourish portion. I have found by observation, and a touch of experience too, that there are particular conditions under which such organization can be made successful, and particular conditions under which they can not. Speaking of conditions back in the early days, we didn't then have a great exposition somewhere every year with reduced rates of transportation to attract attention to them. I received a letter asking me for my idea as to the asking of an appropriation for State fair this season. I gave my opinion against the wisdom thereof. You will all bear witness that here in Kansas there was considerable agitation of the Pan-American at Buffalo, which was a bigger show than we could get up. Another thing suggested in that connection was that there has been a tendency for the past few years toward combination, where the biggest might control the smallest. You have seen small railroads gobbled up, and match factories, and soap factories, etc., and you will see it continue until it results in their downfall, and in my judgment that won't be long. I have said, and must say it hereafter, that one of the dangers of a State fair project is that the season may be unfavorable. It takes something more than wishes to make a successful fair. Atchison, Leavenworth, Jefferson, Jackson, Brown, Nemaha and Marshall, which are among the most reliable counties in tne State, have had their flourishing county fairs. Where are they now? Governor Morrill owns one in Brown County, and I believe I am pasturing my cattle on the old Atchison County fair ground, and have been for several years. I do not think it advisable for the association to resolve itself into a lobby to get the Legislature to make an appropriation, which is the sole agency upon which this association must rely. The agency of a committee I believe would be better than a matter of resolving. Let us look at it fairly and don't let us think that wishes are horses in order to get a ride. I don't believe we can compete with Kansas City, or even with Chicago, if we should have a State fair.

Hand Fed Calves at the Kansas Experiment Staton.

PROF. D. H. OTIS, STATE AGRICULTURAL COLLEGE.

The well-built and well-fed calf is a very important factor in Kansas farming. There is no question but what first-class calves can be raised when one calf is nursed by one or more cows. Where pure-bred beef calves are raised for fancy breeding animals this is probably the only method to employ. But for the man of limited capital, who feels that he must get all that he can from his milk, as well as from his calf, and especially since the advent of creameries, the raising of calves with skim-milk is a subject of vital importance. In order to solve some of the problems connected with the feeding of calves by hand the Kansas Experiment Station has been carrying on a series of experiments which are recorded as follows:

STERILIZED V. HAND SEPARATED SKIM-MILK.

Thirteen calves of various ages were divided into two lots of six and seven respectively. Their grain ration of Kaffir-corn-meal and their roughage of mixed hay was fed alike to both lots. The results are as follows.

Experiment.	No. of calves.	Days fed.	Average gain per head.	Daily gain per head.
Sterilized skim-milk	6	142	250	1.76
v.				
Hand separated skim-milk	7	142	251	1.767

It will be noticed that there is practically no difference between the two classes of skim-milk. There is one important point, however, that needs to be emphasized in the feeding of creamery skim-milk. It should be thoroughly sterilized or pasteurized, preferably by live steam, so as to add as little water as possible. The temperature should go to 200° F. or above. Where the skim-milk is sterilized at the creamery, and well cared for on the farm; the calves are sure of getting good sweet milk of uniform quality at each meal. Sterilization is not necessary where the milk is separated and fed immediately after each milking.

SHELLED CORN V. CORN CHOP FOR YOUNG CALVES.

Twenty calves were divided into two lots as nearly equal as possible. The average weight was 127 pounds. All were fed mixed hay for the first nine weeks and prairie hay for the next four weeks, and a mixture of prairie and alfalfa hay for the next six weeks. Each lot was treated alike except that one received its grain in the shape of shelled corn and the other as corn chop. The following figures give the results:

Experiment.	No. of calves.	Days fed.	Average gain per head.	Daily gain per head.
Shelled corn	10	133	232	1.74
v.				
Corn chop	10	133	212	1.59

It will be seen that the calves on shelled corn made the best gains by 200 pounds, or 20 pounds per head, and they made the cost less by 20 cents on a hundred pounds of gain. We found that calves relish shelled corn and would begin to eat it when 3 to 4 weeks old and would make better and cheaper gains on it and were less subject to scours, than those fed corn chop. This experiment shows that it is possible to raise good, thrifty calves that will gain 1.75 pounds daily per head on feeds produced entirely from the farm and in a form that requires no preparation of the feed outside of harvesting, except the shelling.

WHOLE KAFFIR-CORN V. GROUND KAFFIR-CORN FOR YOUNG CALVES.

Since the calves in the above experiment did so well on unground corn the question arose as to how well calves would do on unground Kaffir-corn. Twenty calves were treated similarly to those in the above experiment, except that Kaffir-corn was used in the place of corn. The experiment lasted for 112 days, with the following results:

Experiment	No. of calves.	Days fed.	Average gain per head.	Daily gain per head.
Whole Kaffir-corn	10	112	140	1.25
v.				
Ground Kaffir-corn.	10	112	158	1.41

In this experiment the best results were obtained with the ground feed. Kaffir-corn is hard for young calves to thoroughly masticate and digest. It shows, however, that it is possible to raise very fair calves on skim-milk, whole Kaffir-corn, with such hay and roughness that may be available on the farm.

The two experiments just given indicate that possibly the best grain ration for young calves would be a mixture of shelled corn and ground Kaffir-corn and the Kansas Experiment Station is conducting an experiment to test the value of this mixture.

SKIM-MILK V. WHOLE MILK, V. CALVES RUNNING WITH DAMS.

Twenty head of grade Shorthorn and Hereford calves were divided into two as nearly equal lots as possible. They were fed a grain ration of equal parts corn and Kaffir-corn with alfalfa hay for roughness. The only difference in the feed of the two lots was that one received whole milk fresh from the cows while the other received sterilized creamery skim-milk. In addition to these two lots the station received the privilege of weighing twenty-two head of high-grade Hereford calves which were running with their dams in a pasture near the Experiment Station. The comparison in results are shown in the following figures:

Experiment.	No. of calves.	Days fed.	Average gain per head.	Daily gain per head.
Skim-milk	10	154	233	1.51
v.				
Whole milk	10	154	287	1.86
v.				
Running with dams	22	140	248	1.77

Figuring milk at 15 cents per 100 pounds, whole milk at creamery prices for butter-fat, and grain at 50 cents per 100 pounds, and hay at $4 per ton the feed cost of raising these calves was as follows:

	Cost per head.	Cost per 100 pounds gain.
Skim-milk lot	$ 5.27	$2.26
Whole milk lot	15.72	5.46
With dams	12.00	4.41

At the close of the above experiment all these calves were placed in the feed-lot and pushed for baby beef, with the following results:

Experiment.	No. of calves.	Mon'ths fed.	Average gain per head.	Daily gain per head.
Skim-milk.	10	7	440	2.1
v.				
Whole milk	10	7	405	1.93
v.				
Running with dams	22	7	422	2.0

This experiment shows that the feed cost of raising a good skim-milk calf need not exceed $5.25 in contrast to $15.75 for a whole-milk calf and $12 for one raised by the dam. The skim-milk calf becomes accustomed to eating grain and roughness early in life, is handled enough to be gentle, and when transferred to the feed-lot is ready to make rapid and economical gains.

DRIED BLOOD AS A CALF TONIC.

The Kansas Experiment Station has been very successful in using dried-blood as a tonic for weak or sickly calves. In the spring of 1899 the station had a calf that did very poorly, as is shown by the fact that in seventy-nine days it gained only four pounds. After trying various other remedies, dried-blood was used with success. The calf began to gain, and by the time it was a year old weighed 578 pounds.

In October, 1900, a heifer belonging to the Agricultural College dropped her first calf. The calf was small and sickly and for the first few weeks did very poorly, as is shown by the fact that on December 1 it weighed two pounds less than on November 1. For a few weeks its life was in a very critical condition, but when induced to eat a little dried-blood with its milk it began to improve, and has been making fair gains ever since. Dried-blood has also proved an excellent remedy for scours.

In feeding dried blood a teaspoon at a feed is a great plenty. This should be continued until the scours disappear and in case of a weak calf, the allowance may be gradually increased to a tablespoon at a feed. The dried-blood should be well mixed with milk as fed to prevent it from settling to the bottom of the pail.

The above experiments show the possibilities of skim-milk in combination with various grains and roughness as feed for calves. It is understood, however, that in the feeding of skim-milk certain precautions must be observed. The milk must be fed sweet, at blood temperature, and in clean buckets. The preferable grain ration is a mixture of shelled corn and Kaffir-corn-meal. Soy-beans are very loosening and should not be fed to very young calves. Never mix the grain with the milk. The best roughness is either prairie or mixed hay. Alfalfa hay is too loosening for very young calves although it may be gradually introduced into their ration as the calf grows older. It should be provided with fresh, clean water, salt, plenty of sunlight, shelter and bedding in cold weather, shade in summer, and regularity and kindness in treatment. Such precautions will usually insure good, thrifty calves that will gain from a pound and a pound and one-half to two pounds daily.

A. B. Mull: What would be the effect of over-feeding dry blood?

Professor Otis: I don't know. I have never tried it.

A member: Is it expensive?

Professor Otis: No, it is a cheap food. You can get it for two or three cents a pound.

A member: Hoy many times a day do you feed milk?

Professor Otis: Twice.

A member: Don't you always feed young calves three times a day?

Professor Otis: Yes, until about ten days old.

A member: Were those calves vaccinated?

Professor Otis: Not at that time.

A member: Do you believe in vaccination for blackleg?

Professor Otis: Yes, sir.

A member: Do you practice single or double vaccination?

Professor Otis: We have been using double.

A member: Do you consider it important that the creamery milk should be thoroughly sterilized?

Professor Otis: Yes, sir; I do.

A member: Is heat all you use?

Professor Otis: Yes, sir.

A member: Do you ever use blood food on hogs?

Professor Otis: Yes, sir; and with very good results on shoats.

A member: How many doses do you give a calf?

Professor Otis: Usually two or three times; sometimes for a week, and in one bad case we ran it for a month or more.

Dairy Stock and Products as Viewed In My Tour Around the World.

J. E. NISSLEY, TOPEKA.

When your secretary, Mr. Heath, asked me to speak upon this subject, at this time, I told him that the subject was a big one with comparatively little in it. That is to say that it presented rather a wide range of latitude, and longitude for that matter, too, in which to take observations. While actually the stock and products did not really exist.

A tour around the world opens an interesting field of education, experience, and discovery. Much to please the eye, broaden the intellect, and inspire the heart; therefore, observations along almost any line of industry, art, literature, or religion, are fraught with particularly interesting phases. True, in a hurried tour, such as I made, extending over a period of one hundred and seventy days, sixty-three of which were spent on water, to say nothing of the actual time consumed by virtue of Oriential customs and inconveniences, will at least, partially, I hope, justify me in saying that my observations along any particular line were crude, shallow, and extremely limited.

The tour that I have just recently completed was a westward movement. Sailing from San Francisco and landing at New York. In order to be more specific, I have divided my observations into four sections. Namely: Japan, China, India, and Europe.

Improved stock in Japan, alas there is none. The only semblance to it that I saw was an ox hitched to a dray on the streets of Kioto, doing service side by side with a Coolie—Coolies, do 95 per cent of all labor intended, or rather which should be intended, for beasts of burden. Practically speaking, there is no stock of any kind in Japan. During all the time that I was there I doubt whether I saw a dozen head of horses and cattle.

The consumption of butter and cheese, while increasing, is as yet of a limited nature. All the butter that I ate while in Japan came from the European continent, chiefly the Netherlands. It seems to me here is a question for the enterprising Yankee genius of America to solve. Why America, 4,000 miles nearer to Japan than any other butter producing and exporting country in the world, should not have all, or at least nearly all, of the butter trade of those islands, and I might say, incidentally, that that trade is rapidly and materially increasing, and in keeping with the general and wide-spread commercial expansion of the Japanese people.

In China the same conditions exist as in Japan. Of course, in a few of the larger cities, such as Shanghai and Hong Kong, where a goodly number of the people are foreigners, up to date dairies are maintained, the products of which are of a fair quality and go rather into exclusive channels. Much of the butter used in China, and especially at the sea-port cities, comes from Australia, and is a very good article, considering the climatic conditions to which it is subjected and the distance that it is shipped. I might add, however, that the native Chinaman uses no butter and hence the demand for butter is limited only to the foreigners, of whom there are a great many in the commercial centers to which I have already alluded.

Probably nowhere in the East is there as much effort made, in the matter of improving stock and dairy products, as in India. This is easily accounted for by virtue of a larger number of foreign inhabitants as well as the general predominance of English rule and customs. And yet in view of all this the nauseating spectacle of goat's milk and buffalo's butter, confronts one while sojourning in that notoriously goat infested country. So-called mutton is one of the chief items of meat diet, lamb chops for breakfast, mutton stew for dinner, and roast leg of mutton for supper, are painfully familiar terms to tourists in India. And judging from the infrequency of seeing flocks of sheep and the extraordinary presence of goats everywhere, in the streets, in the alleys, and even in the doorways, gives rise for what I call well grounded suspicions.

But there are some cattle in India. Way up on the crest of the Hymalaya Mountains, 7,000 feet above the sea

level, where the rainfall and temperatures are such as to produce very good grazing, I found a herd of cattle, owned by the Alighari Dairy, that is a very creditable dairy indeed, comparing favorably with our own herds. On the plains, however, the cattle are small, scrubby, and poor, a sort of cross between our lowest strains of Jerseys and the typical Texas ranger. The buffalo cow is a very useful animal through all India. Not the American bison, or buffalo, but the genuine full blooded stock, without the wild and wooly appendages so characteristic of our buffalo; not the big-headed and still bigger front quartered animal, found roaming over our Western prairies before the advent of civilization.

A large, coarse-featured, mouse-colored, almost hairless animal, weighing from 1,200 to 1,400 pounds, with long, flat horns extending parallel with the body. They are used for ploughing and all kinds of field work, while their milking propensities are very small and the butter produced from the milk without body, flavor, and altogether tasteless.

I saw a great many of these buffaloes, not only in India, but as well in Egypt and Palestine, and I confess that "buffalo's butter" was one of the constant delicacies that we could not well escape, during at least a month or more of our absence.

A visit among the dairies of Switzerland brought me in contact with the beautiful, large, yellow Swiss cattle, so predominant among the Alps. While ascending Mt. Stansohorn, near Lucerne, I passed many herds, grazing on the steep slopes of the mountains, all sleek and fat, an unmistakable evidence of the richness of those pastures. Below in the valley, where land values are much higher and the congested condition of the farms much more intense, the cattle were kept in the stable all the time and fed on the soiling system. The value of a good average Swiss cow, in her own native baliwick, is 300 francs, about $60, and upon this valuation pays a reasonable return for the capital and labor employed. Notwithstanding the fact that she is kept on land that is worth about $500 per acre.

The words Switzerland and cheese are synonomous, yet you can not well think or speak of one without being reminded of the other. Unlike love, the subject is never new, at least one thinks so after being about and surrounded by by it for awhile. But then as some poet puts it, we first detest, then tolerate, and finally relish it. Cheese shops or stores are as numerous in Switzerland as lemonade stands at a country fair. And if in the crowded portions of the Swiss cities, their location is unnoticed to the eye, unless your sense of smell is too severely shattered, their presence becomes glaringly prominent, even though you be many paces away.

From the varied observations of my world travels, in my judgment, there are two things in which Switzerand can not be excelled in, viz: In the superb granduer of her mountains and in the manifest strength of her cheese. I hesitatingly and with some degree of humiliated American pride, make the first admission, but the last, I gladly accede her this supremacy, and only hope that she may ever retain it, as well as the nauseating odors that without which it would be impossible. I might also add before closing with Switzerland, that she seemed to have the finest horses of any country in which I traveled; large, active, well kept, and gentle.

Next to Switzerland, Holland impressed me most in point of fine cattle. The Holsteins, doubtless predominate. I certainly saw more cattle per square mile in this little Dutch, quaint, low, level, water lined country than anywhere else. Let me digress just for a moment from my subject to say a word about this peculiarly odd country.

Fancy a country, which costs its inhabitants over $3,000,000 a year to keep it above the waves, or to be more correct, to keep the waves above it. Where, as soon as they cease pumping they commence drowning; where the frog, croaking among the bull-rushes, looks down upon the swallow on the housetop; and where ships float high above the chimneys of the houses. Fancy a country so precarious that its people are trained at college to fight against water, as we in the West are legislating and fighting for water.

Like lower Egypt, much of Holland is a delta, parts of which are even thirty feet below the ocean. Where the wild waves of the North Sea have been literally walled out by dykes. Yet such is Holland. A little, odd, quaint, interesting country all on one floor. Miles upon miles of canals stretching their shining lengths in every direction, forming their high-ways, their lanes, and even fences or dividing lines between fields and farms. Upon which you see barges with merchandise, produce, and passengers, gliding along smoothly. In the bright green fields many of them lakes, before the Dutchman pumped them dry and converted them into rich pastures, herds of black and white cattle quietly cropping the moist grass, and as a superbly odd back-ground, like monstrous giants, stand hundreds of Dutch wind-mills that seem more like useless conglomerations of clumsiness rather than an absolute thing of necessity. Of all the world Holland is most interesting. And of all her resources her cattle are not the least important.

In every town of any consequence, cattle markets seem to be the most conspicuous centers, where folks congregate for general barter and sale. Holland makes a great deal of butter, good butter, yet the character is somewhat different from that made in our country. It is a mild, rather salvey product, and one of the peculiar characteristics of not only Holland, but of all the European butter, is the lack of salt. I think nowhere do they salt the butter even half as much as we do, while in many instances, for local consumption, it is not salted at all.

The principal market for Holland is across the North Sea, England. And this brings me to another subject, namely, the English market for dairy products.

England, with 46,000,000 people grouped together upon an area not as large as the States of Kansas and Missouri combined, of course, is an immense consuming center, towards which the products of all the world are tending.

In speaking with a large dealer of dairy products in Manchester, I was surprised to learn that butter is regularly shipped to their market from every known butter-producing section of the globe. I confess that prior to my visit there, I had the impression that the only competition we had on that market was Denmark, Australia, and possibly a few nearby European countries. But to my surprise, I learned that the Argentine Republic, Canada, Russia, and even Siberia shipped immense cargoes of butter each week in the year to England. One station in Siberia alone ships a car-load a week, which gives a slight conception of what comes from that country, that we have probably never recognized as anything but a big, frigid, frozen up plain, with nothing but ice, snow, and their accompaniments existing there.

It seems to me that there is not much inducement for the United States to try to get into this dumping ground of the world, with the finest products of her dairies. At best it will be a long drawn out effort to secure a profitable recognition, and my thought is that the same time, money, and energy expended to develop markets, naturally belonging to us elsewhere, will in the end accomplish greater, better, and more profitable results, than possibly could be had by cultivating English export trade. If we have a serious surplus periodically, it may, of course, be all right to dump it there, but if we do, my judgment is that we give them what our best trade does not want. Something that we can afford to put into this free for all competition, something that we expect to take some chance with. The fact is, may we not soon be where we ourselves will need all the good products in this line that we can produce.

After making such a trip as I have, and seeing the various countries on the circle, one inclines strongly to the belief that after all there is but one America, and that is the country in which to live. The country that has finer horses, finer sheep, finer cattle, more progressiveness, more push, more improvements, not only in live stock, but as well in every avenue of industry, than any country on the face of the globe.

The Angora Goat Industry.

W. T. M'INTIRE, KANSAS CITY, MO.

The last page is written, the book is closed, and Volume Nineteen Hundred and One rests upon the historical shelf.

It is true that many of its pages are blotted by misdeeds; others are stained by wrongs, social and political. Evils have not been erased from the hearts of men, but the volume is not at all pessimistic. Its dark phazes are only the shadows intensified by the contrast with the good that has been wrought. Progress along all lines is written upon every page, in every department of life, and great forward strides have been made.

In this the American Angora Goat Breeders' Association has borne its part. The association was organized on March 14, 1900, and its growth has been phenomenal. The few comprising the first membership of the association were men who had thoroughly investigated the merits of the Angoras, in this and foreign countries, and some of them were residents of the great State of Kansas. As soon as the association was organized it commenced to educate the masses of our people as to what the Angoras were, and what they were good for, as comparatively little was known of this domestic animal. All available information through the press and by correspondence was given to the public. The more said and written on the subject, the greater was the demand for detailed information, which was freely given by the officers and members of the association.

Requests came in from Kansas, Teas, New Mexico, Arizona, California, Oregon, and other States. By the fall of 1900 many thousands of Angoras were recorded with the association, and the membership had increased to such an extent that the association felt perfectly safe in holding a show and sale in Kansas City in October of that year. This show and sale proved a grand success, not only in points of exhibits and sales, but also as an object lesson and educator to the many hundreds of the best farmers from the different sections of the United States. Many who attended took home with them some fine specimens of Angoras. The number sold on this occasion was about 1,200 head ranging in prices from $4.50 to $35 per head for does, and from $15 to $110 for bucks. Several extra fine bucks brought from $125 to $700 each. The news of that October show and sale spread throughout the country, and in consequence many more memberships were added to the association and the demand for Angoras grew fast from enterprising farmers representing nearly every State in the Union.

On February 25, 1901, another public sale of 1,400 Angoras was held in Kansas City. The prices then ranged from $4.50 to $11 for does, and from $20 to $32 per head for bucks. The next sale of 1,700 head was held April 5, 1901, the prices ranging from $3.50 to $8.50 per head for does, and $15 to $35 for bucks. The Second Annual Show and Sale was held in October, 1901, at which some of the best Angoras in the United States were exhibited and sold. People attended from nearly every State. Over $1,200 was given in premiums by the association for the best exhibits and displays. At the auction sales then made, prices for does were from $6.50 to $250 each, and bucks from $20 to $40 each, although some brought over $100, and the sweepstakes buck sold for $1,050.

Up to the first of January of this year we have three hundred members scattered throughout the foreign countries and the United States, with 22,700 Angoras recorded. It is now no longer doubted that the Angora is one of, if not the most, profitable domestic animal.

It was only a few years ago that this valuable little animal was not known nor appreciated by a majority of the American people. At the mere mention of a goat they thought at once of the old-fashioned barnyard billy goat, not realizing that there was and is as great contrast between the Angora and the barnyard goat as there is between the house cat and the polecat. They are both cats, and these animals are both goats, but the Angora is a very much improved one. You may put one hundred does in a barn in midsummer and they are as odorless as a white shirt. As to the resources of this little animal, it is second to none that walks. They can furnish the human family with almost their entire sustenance, including milk, meat, mohair, leather, robes and other needful articles of domestic use. Their milk for infants has no equal. It does not contain tuberculosis and you can not inoculate the goat with tuberculosis. Their mohair is in daily use and its value is nearly double that of wool.

The Angoras are more prolific, more hardy, and can be kept with less cost than sheep. They are essentially browsers, cleaning the farm or ranch of all brush and weeds and depositing the same on the highest and poorest spots, as those are the places where they camp at night. They are not grazers unless forced to it, and hence, are not in the way of other stock, which do not take the brush and weeds on the high land. Some think the Angoras are hard to fence in, but that is a mistake; they are as easily restrained as sheep.

I feel sure in saying that it will not be regretted by the farmers of Kansas, if they turn their attention to the Angora goats, especially those farmers having brushy, hilly, and weedy land. In two years' time the Angoras will kill out the thickest underbrush, thereby greatly enhancing the value of the land. Angora meat, called Angora venison, is now in great demand at prices remunerative to those who may have a surplus, which are not suitable for breeding. The breeding demand will continue for many years, and will not be overdone for a generation to come.

The Horse Our Farmers Should Raise.

T. A. HUBBARD, ROME.

How I wish at this time, when my knees have symptoms of fever and chills I could call on my friend Burton to draw you a beautiful picture of the to draw you as beautiful a picture of the as he did at our annual meeting in 1899, of the saddler. I can never hope to draw such a beautiful picture, or poorly picture or photograph on your mind of the horse or horses our farmers should raise. I am not here to make war on any breed of good horses. I love a good horse. Neither do I want to talk to you of the mistakes of Moses and the prophets, but to talk to you about my own mistakes and those of my fellow farmers.

I fully realize we will not all agree. But we agree to disagree, and that is one of the sweetest, brightest features of our order or association. We have grown up from infancy, a mere handful of breeders, to a full-grown association of 300 brothers, and when we meet and part the honey of God's love is on every tongue and lip.

It may be only the opinion of 1 in 300 that I express, but it is mine and I would not be a coward. For a lifetime I have watched the farmer who owned a small, nondescript little old mare, weighing about eight hundred or nine hundred pounds. She was black, and hence she was a Black Hawk Morgan. He takes his pet over to a three or five dollar scrub black horse, weighing eight hundred or nine hundred pounds, and of course he is Morgan too, and the good-meaning man and farmer says, "I ought to get something pretty fast from that cross. They are both foxy." There was not a thimbleful of Morgan blood in either.

Thousands of farmers have watched that cross, expecting to get a Creceus, Palo Alto, Allerton Nelson, Gentry or Patchen. What disappointment! They had no right to expect much. No farmer or breeder can afford to use a poor sire. Small, nondescript mares are not liable to produce speed or draft animals, but a mongrel lot of things that poorly fill any of the many demands of the market.

I think we should breed draft-horses. The draft breeds are all good. Raise a large, smooth, sound horse with good feet, limbs, and eyes; with as much style and action as possible—a high-headed good looker weighing one thouhand eight hundred or two thousand pounds well broken and fat and he will sell like wheat or Government bonds. The demand is good, the supply inadequate, and he will bring a premium on the Chicago or any other market. This animal as a colt will more than pay his way on the farm after he is 3 years old,

and should sell for from one hundred and seventy-five to three hundred dollars at 5 years old. A pair, well matched, 400 pounds larger and equally as good should sell at six hundred or eight hundred dollars a pair. Kirk paid $500 apiece for a team of six—$3,000 for a six-horse team. The large horses won at the Chicago International show. There is a great demand for such horses, and they are exceedingly scarce.

But few of our farmers can expect to raise such draft-horses from our present stock of mares but get as near this kind as you can. Buy better mares and breed the best you have and give away the rest. If not too heavy they will find a good market.

Major Carson, of the War Department, says: "We owned 16,000,000 horses when we went to war with Spain and now we have but 11,000,000."

During the last three years horses have risen in price from $40 to $140. Unless our army officers decide to pay the prices asked by our dealers, the latter can sell their horses to agents of England, France, and Russia. England has been one of our best customers and has taken as many as 8,000 horses at one shipment. She has poured more than $6,000,000 into the trade channels of our country, for the most worthless lot of small, nondescript horses, ponies, and mules that ever left the United States. They could have been given away with profit, and also a chromo thrown in.

The Boer cavalery horse only lives about four months in Africa, which appears to be a good place to get rid of the scrubs. They die with glanders, and diseases of various kinds, also Boer bullets. War is sad, very sad, but this Boer war has been a financial blessing to the United States.

The smaller draft-horses are wanted for expressers, bussers, hacks, carts, drays, and farming. Some go as artillery horses if of good style and action, at about one hundred and fifty dollars each. But, says some one, they are so slow, can not stand the work, and that my little mongrel pony can work them to death. Is it not possible you may be mistaken?

I have tried everything from the ox and pony to the elephant or large draft-horse, and am using both to-day. My 1,800 pound draft-horses will walk across the field, a half mile and back, with a plow, quicker than any other team I have. Of course they are not a carriage team, but four can pull a gang-plow to a good depth, while I put five or six of my lighter horses on the other two gang-plows.

If you do not like the draft and want to breed something faster and smaller, and wish to breed a coach-horse, select a few good, large standard trotting mares, and then use a good French or German Coach stallion. This cross will give you a beautiful horse that will sell as a coacher, double or single driver, at one hundred and fifty to five hundred dollars apiece, the smaller as cavalry mounts for $125, and the larger as artillery and army horses at $150. From this cross you can also get a good all-purpose horse for the farm and road. Or you may select a few Cleveland Bays and use a large standard American trotter on them. This cross should give you a good horse, the smaller selling as cavalry mounts for $125 and the larger for artillery for $150. This cross will also produce some good matched drivers, both single and double, that will command fancy prices in the markets if they are very handsome, with good style, action, and knee movement. Beauty and style sell better than speed, in matched teams, unless they are quite fast. They should be well broken and move as steady and smooth as a clock. They should wear good clothes when shown. Don't show them in a chain harness tied up with rope and strings. But if you must breed the trotter, select the largest and best and get as near the top as you can, then if you fail to get speed of a high order—a two-minute horse—you may get a fancy driver. The large, handsome, good lookers sell well at prices ranging from one hundred and fifty to five hundred each. Well-matched pairs sell at fancy prices.

Of course you will not all reach the top round of the ladder, although there is plenty of room at the top. All of the above breeds that do not meet the requirements of the markets, will make a fairly good all-purpose horse, or farm horse, in some capacity, but I would say breed for a fixed type of the best breed you handle. Do not send your horses to market unless they are in the pink of condition. Fat covers a multitude of defects and pleases the eye. The horse will make you money. The draft-horse can be grown as cheap as the steer, and possibly cheaper, if we would raise fall colts and work the dams during the growing season. Feed from start to finish and raise the best. The horse is a noble animal, a thing of beauty and a joy forever.

The Horse and Mule Industry and the Market Requirements.

JOHN M. GRANT, KANSAS CITY, MO.

In response to an invitation from your worthy secretary to make a few suggestions here to-night upon the horse and mule industry of your great and growing State, and the market requirements for the same, I feel that I have for my subject one that interests all and one to which none of us are strangers. Probably there is no other industry in your State to-day that comes so directly home to each one of us as this.

A few years ago when steam and electricity were seemingly supplanting the horse and mule so very fast, many supposed it would be only a matter of a very short time when the horse would be kept only by kings and lords for racing purposes, and a few of the rich as a source of pleasure and a thing of beauty, or as a mount for the gallant soldier in time of war. But as a matter of fact we find him to-day in greater demand than ever before, and with the increasing prosperity of our country broader fields of usefulness for him are opened each day. With the vast cotton-fields and sugar-plantations of the South, the large wheat-fields of the Northwest, the extensive railroads building over the entire West and South, the great coal-mining and iron industry of the East, the rich forest and lumber regions of the North, each in its turn, by its representatives, visiting our markets in search of animals suitable for their respective places. Add to this the many thousands that we are called upon annually to furnish for export demands, and the territory from which they can be had growing less each day, it is not strange we find ourselves with a shortage and in a condition where the demand exceeds the supply.

It has certainly reached the point where it is not a theory, but a condition that confronts us; and it means much for a State to possess a desirable location and natural conditions favorable for the production of horses and mules. We are all aware that the high-priced lands in England, Germany, and France have made it impossible to raise horses to any extent at a profit in these countries; hence, the very best buyers that we have at our market to-day are those who are buying and exporting in the neighborhood of 25 per cent of all our best horses that are sold in the different markets. In addition to the demand for horses for export purposes we have experienced in the last year a large demand from Cuba and the West India Islands for our mule product, there having been already several thousand head purchased for this market during that time. And it is evident that while the land is not high in these countries, the climate so closely resembles that of some of our Southern States that it is impossible for them to produce the stock they must use, so they look to our country for their supplies. What is true of these foreign countries is fast becoming true of the East, consequently they are all looking to the Middle West as the only place where this demand can be supplied.

To-day one of the greatest industries of my native State, that good State of Iowa, is the growing and feeding of horses and mules, where it is a common thing to find many of its farmers feeding and putting in condition for the market from one to four car-loads of good-boned, short-backed, heavy draft-horses, that when ready for market will weigh from 1,600 to 2,000 pounds, and for which they receive what our farmers and shippers would consider a fabulous price. It is not uncommon for them to realize from $200 to $250 per head by the car-load, as there is always a demand for the extra good ones at top prices. What our farmers and feeders seem to have never learned is that it is just as necessary, and more, to feed and put in first-class condition the horses and mules they expect to market in order to get the best results as it is any other animal on the farm, as there is no other animal we feed where a pound of flesh means one-half the price it does on the horse or mule, condition alone oftentimes puts them into a different class, where the market value is doubled. In many instances we can feed a thin Southern horse until he developes, if sound, into a first-class United States cavalry horse, or in other instances with strength and muscular development matures into a first-class cob worth many times his previous value.

What is true of Iowa and what is accomplished there can easily be accomplished in our State. I say our State, for when but a small boy in short pants, back in 1869, my father, with his family, settled in that good county, Labette, where I grew up, and engaged in the horse and mule business for myself when but a lad of eighteen, remaining there until five years ago, when I came to Kansas City (which, in my judgment, is the greatest of all future markets), that I might engage in the same business more etensively.

It was not until I had become directly interested in the market and its demands that I could appreciate the many advantages we had in the matter of central location, climate, cheaper lands, together with the great shipping facilities; and if we haven't to-day the greatest market on earth right at our door, which is a very important factor in this industry, it is only a matter of a very short time until this will be realized, as indicated by the receipts and number handled at that place.

No other market ever equaled or approached the rapid growth of that of Kansas City, which is practically a Kansas market and one of which we should be proud. There has been an increase in our receipts in the last ten years from our flattering figures of to-day, which our flattering gures of to-day, which show that in the last two years there have been over 200,000 head received and sold, representing in the neighborhood of $20,000,000, and Kansas has furnished the greater part of these. Only St. Louis and Chicago outnumber us, and then by the narrow margin of 8,000 to 12,000, which included through-shipments from our market, clearly showing that in actual sales Kansas City sold more horses and mules than any market in the world. Tell me, is it not an industry that we can well afford to encourage, and of which we should be proud?

In my judgment, never was there such an oportunity for the breeder and feeder of Kansas to make money in horses and mules as at the present time.

As to which is the more profitable to produce depends very largely upon circumstances and opportunities. We all know that the mule is a sure thing and that the inexperienced breeder is not so likely to make a mistake in the growing and marketing of mules as he is with the horse. The mule is the poor man's friend, and can be sold for the cash at any age and at any time so that we will render a profit to the breeder. The greatest mistake I think that is generally made is in not starting right. About the first thing a new breeder does is to buy a few old cheap mares that are practically worthless for anything else, and in reality no good for this, as the majority of them are barren; when, if he would use a little good horse-sense, or I would say, in this case, a little good mule-sense, and start in this season of the year in a community where he could procure them and buy the very best fillies, a year old past, even though they cost him high, he could breed them the following season, when they would bring colts at three years old. By taking good care of them after getting four sets of colts out of them he could put them in condition for the market, when he would have a fine set of 6-year-old mares that would bring him twice what they had cost and at the same time would have produced a class of colts worth twice what they would have been from an inferior, scrubby lot of old broken-down mares that were absolutely worth nothing, and would not have produced one-half as many foals in the same time. In the beginning I would not buy a filly that I did not think would weigh 1,600 pounds and up at maturity, with good bone and a good individual. Let us stop and make a few figures and see what we might reasonably expect.

I have made the statement that there never was such an opportunity. The time is now, the place is Kansas, and the enterprise the mule business. For

a matter of convenience we will start with 100 young mares, the kind I have described. (This, of course, is only to illustrate and for the small breeder and farmer any portion would give the same result.) In order to get good ones we will estimate the cost at $75 per head for yearlings, a pretty good price, which would make $7,500. The next thing we would do would be to buy two good young jacks, the best that money could buy, which we will be liberal and put at $1,000 apiece. From this kind of young mares and by using due dilligence, we ought at least to get eighty colts a year. It is now up to us whether we are prepared to grow these colts and mature them. If not, they are surely worth $50 apiece at four months old, weaning time, which would be $4,000 for each crop. (I think they are worth more, but wish to be conservative.) As evidence that I mean what I say, if some good reliable man wishes to give this a trial I have a customer who wants 100 colts a year and I will enter into a contract to take four crops of colts at the above price. And I am sure if one is prepared to take proper care of them, and feed them until they are 3 years old, if the demand for sugar-mules would get no better, or the prices improve from what they are now, they would at least bring $150 per head, and make him 50 per cent more money over and above expense of holding them, than to sell as colts. I have sold, during the past season, just such mules as these should be for $165 per head by the carload, and during one month alone sold 3,761 head that brought an average of 43 cents per head over $100. The cause of the low average in price was that a large per cent of these mules was a cheap class bought for the British trade, and for which there would practically have been no market if it had not been for this emergency, and as we do not always expect to have a war it is well to refrain from raising this kind, and instead breed a kind that is growing in demand.

After getting the four crops of colts and realizing a profit of $4,000 a year, or more than 40 per cent on the investment, these mares put into condition for the market, it is safe to say, will bring all they have cost up to the present time. The ones failing to bring colts each season can be used to do the farm work. The small breeder or farmer would have the advantage as he could use all of his mares if necessary. By giving the jacks the advantage of this good class of mares it is safe to say that they would have made a reputation and still be worth all they had cost, and during this time would have earned quite a snug sum on the side to pay sundry expenses. My idea in marketing these mares at this time is to get their full value while they are yet in their prime, and in case you wish to continue in the business buy a new set of young mares. There are many advantages in the raising of a mule for market over that of the horse, noticeably among which is the fact that they can be marketed at any age, and are considered marketable at 3 years of age by the trade, while the horse must be 5. If you breed 100 young mules you have 100 that are marketable and can be sold in a bunch to one dealer, and without working them, while probably not 50 per cent of horse colts mature absolutely marketable horses. It is not absolutely necessary that mules should be broken for the market, especially for the sugar trade, as for this they are preferred unbroken; but the horse, in order to sell to any advantage whatever, must be well broken and classified, each horse selling in his class and upon his individual merits, and probably for a different market. It also requires no little experience in order to be able to select the proper mating and judicious breeding of horses, and above all to discriminate as to soundness and to individuality in the sire, as is also very desirable in the dam. But at this enlightened age certainly no one is excusable for breeding to an unsound, ill-shaped, long-backed, leggy, curby-hocked, light-boned kind of a horse such as we have often seen at the head of some prominent breeding farms, which possessed a fashionable pedigree but no horse.

In many instances the breeding and raising of horses has paid much larger returns than we could ever hope to get from the breeding and raising of mules, but this is generally in a case where you have been fortunate and bred some phenomenal ones, and will not do to rely upon as a business proposition although there never will be a time when the judicious breeder can not produce the best class of horses at a handsome profit, if he is careful in selecting individuality and will breed with a view of producing the best in their class. Never has there been a time when strictly high-classed horses have brought better prices than during the past year. While the American people, by experience, have learned that they can not afford to pay fabulous prices for pedigree alone, they are at all times willing to give up their money for the first-class individual, or one that has the extreme speed and other qualifications to make him desirable and useful.

Whatever you do, try to breed in line and for a class. If you have a good-boned draft-mare select a good draft-stallion or jack with which to mate her. If you have a good road-mare select a good trotting-bred stallion with size and action of the right kind and one that is well enough bred that you have reasons to believe will be able to reproduce himself. After you have the foundation, feed and care is a necessary requisite in the production of desirable horses and mules for the market, and the reaping of a profit from the same.

The Evils and Extravagance of Horse Companies.

J. W. ROBISON, ELDORADO.

We have a great many kinds of companies. Some of them are on the right road; some of them do good, and some of them do harm, and, as we all know, there are many kinds of horse companies. Last year I was in France and in my investigations there I saw their national horse company, where they sent a commission of from three to five men to buy two or three thousand horses a year for the government. That was the largest horse company I have ever been familiar with or know much of its operations, but it is not, however, the kind of a horse company that I think was intended here. The kind of a horse company probably intended here is where an individual owns a horse and puts him into the hands of a salesman to go out and form companies to buy this horse; or the individual many times the importer himsel, goes out, with good smooth talkers, and forms those companies himself and sells the horses at considerablly more money than the same man would sell the horse for in his own stable. That is reasonable business. He could not be expected to bear the cost of sending an able talker and an able care-taker of the horses along and pay livery bills, etc., and get some assistance from other people through the country where he goes, without being compensated for it. So he has necessarily got to charge a higher price—and he does so. If the evil ended there we would have less cause for complaint. But if the stockman or horse importer has a horse that he is a little ashamed to sell himself, or to have go out under his own name or brand, he inevitably sends that horse into the hands of somebody to go and form a company. We have had these companies all over Kansas.

There are some things in those companies that are not altogether evil. It has something the same effect that the tree-peddler of years ago had, that went out over this country and sold a great many trees that never would have been sold or bought if he had not gone there with good pictures to show the people; and no doubt he misrepresented things or allowed the people to be misled by the pictures. These horses have gone out over the country where in many cases they never would have gone and never would have been in that country (where they may have done reasonably well), without the aid of that peddler or that company. If that company was carried on on an honorable and equitable basis, there would be less harm done. If we had any system in this country by which an able commission of veterinary surgeons and competent persons could pass on that horse and say whether he was fit for such service, much of that evil would be eliminated.

In France, where the government has taken more pains to produce a better horse than in any other country in the world, no horse is allowed to get into service without being stamped by the government and the certificate as carefully prepared as the pedigree of any of your stock in this country. That certificate is the evidence of permission from the government that that horse may be used for public service. Without that, the seller could not collect a cent and would be liable to penalties. When we have some arrangement of that kind in this country, we will then be able to wipe out much of the evil that arises from these companies.

A horse is the same whether sold by a company or an individual, it neither makes him worse nor better—but the worst ones usually go out into these companies. A joint note made by ten or twenty or more men—generally good men, because the man that is making up the company is sharp and he goes around and sees what these men's notes are worth before he makes the sale, and when he gets out into a Kansas community and gets a note signed by ten or twenty of the very best men in that community, all their names on one note and each one responsible for the whole debt, he has a good note that will sell in any bank in Kansas. Many of these individuals that buy do not know, when they sign that note, that they are becoming liable for the whole value of the horse, but usually that is the tenor of the note and the result. I think, as a general rule, Kansas horse-buyers and breeders are becoming better business men and know better than to do business in that manner. Horses are being sold in some communities and in others there are efforts being made to sell them for two or three times their actual value, but it is not the popular way of buying a horse today.

Many breeders that do not have the special knowledge to handle the horse, or to buy it, or to be a judge, should take a business method and send a man that does have that knowledge, and have every horse that he buys examined by a competent veterinarian. When the government does not step in and stamp the horse and say he is sound, let them do the next best thing they can and get somebody that is a skilled judge to give their verdict on the horse as to whether or not he is sound. Nobody knows better about the results of breeding from an unsound horse than the last speaker on the floor. Handling them by the car-load and train-load, he is used to seeing all the various kinds of blemishes coming in those horses. He has cautioned you carefully not to breed from an unsound animal; there are enough sound ones. The horses should be examined carefully and then the pedigree should be ascertained to be the genuine thing. Don't get a black horse with a gray pedigree—which I have known to be done by companies in this State—or a gray horse with a black pedigree; and don't get the pedigree of a 4-year-old horse when you have a 6-year-old horse. Those are mistakes that may happen in the selling of a horse by a company agent; but they don't happen with a good breeder that sends a horse to an individual or a company under his own certificate. They expect there to get what they bargain for. If they don't, they go back; and any court in the State of Kansas under those circumstances would refund the money. If he buys a horse at a price for a breeding horse and not a price for a working horse, he expects to get a sound horse for breeding purposes, worth something near the price he pays.

The quicker the intelligent farming community that understands business and horses, quits that way of buying horses and goes at it in a business way, the better it will be for them. Would you buy anything else in that way? Would you buy wagons from a peddler? Would you buy goods from a peddler? Would you buy anything else but a breeding stallion? That is what you do—and often without knowing whether a pedigree is good or bad, without knowing to any degree of certainty that your horse has a pedigree at all. How many of these farmers that buy in these companies are able to distinguish the signatures and the stamps on a pedigree to know of its genuineness? When a horse comes through the importing ports of this country, you are pretty sure that your paper is legally drawn up, according to the rules, because no horse can pass into this country without having three top crosses on both sides, certified and clear in these pedigrees.

Some gentlemen complain that they don't always get a pedigree when they get the animal. They take that pedigree at the port of entry, on bringing a horse into this country, and the collector examines is and scrutinizes it carefully. It goes through the hands of about twenty men; it goes to the Agricultural Department at Washington, and it has to be stamped there, and you get it back in from three to six months unless the grooves and the slides are oiled a little. We would have got our pedigrees there, by being very pleasant and sociable with those parties, after about thirty days, but we can not get them until there is some influence used. We didn't get our pedigrees on that shipment of ours recently brought into this county until we threatened to go to the department at Washington itself, and then they said, "Why, your brokers have filed the copies," and it is no use for a farmer or an ordinary person there to come through the port without employing a broker to pay his taxes and fees, costing from fifteen to twenty dollars on each shipment, large or small.

That pedigree, of course, must be nearly perfect to get through, but that doesn't make the genuineness of the pedigree certain. Pedigrees over in France are sold as merchandise, and they frequently do not fit the horse. Six horses were left at Havre when I left because the horses and the pedigrees did not agree. France isn't the only place that a poor pedigree may be palmed off on you, either. It may be done in any other country than France. (Applause).

H. W. Avery: "The horse selling firms employ from fifteen to twenty-five salesmen each and are at a big expense all along the line. This extravagance must be met by some one, and the one to bear the burden of the expense is the purchaser." Mr. Avery urged that the members of the association should lend all their assistance in discouraging the corrupt practice of the horse companies. Mr. Avery cited several specific instances which proved his statements in regard to the injustice that is being perpetrated upon the horse-feeders of the country by the salesmen of these companies, whom he referred to as "ex-sewing machine and ex-lightning rod agents."

Baby Beef.

PROF. H. M. COTTRELL, KANSAS STATE AGRICULTURAL COLLEGE.

In the latter part of October, 1900, the Kansas Experiment Station put into the feed lot 130 head of calves that had just been weaned. They were divided into lots to test the value of alfalfa hay, prairie hay, corn, Kaffir-corn, and soy-beans in the production of baby beef.

Sixty head of heifer calves were purchased in the Kansas City stock-yards, weighed an average of 418 pounds each, cost $4.25 per hundredweight at the yards, and cost an average of $18.25 per head delivered in the college feed-lot. These were range calves, grade Shorthorn, Hereford, and Angus. Fifty head were purchased of farmers near Manhattan, and had been kept with their dams through the summer in small pastures. Twenty head were mixed bred calves that had been purchased around Manhattan when born, and had been raised at the college by hand, ten being raised on creamery skim-milk and ten on whole milk. The calves were vaccinated to prevent blackleg. Without this safeguard we should not have dared to undertake the experiment. All lots were fed twice daily all they would eat, water and salt were always before them, and they were sheltered in common board sheds open to the South. The yards were fenced with woven wire.

The calves were fed seven months with the following results:

Feed.	Av. gain per head. Lbs.	Grain p'r 100 lbs. gain. Lbs.	Hay per 100 lbs. gain. Lbs.
Alfalfa hay and corn	407	470	544
Alfalfa hay and Kaffir-corn	379	524	626
Prairie hay, corn ⅔ and soy beans ⅓	378	520	486
Prairie hay, Kaffir-corn ⅔ soy beans ⅓	342	594	539
Skim milk calves, alfalfa hay and corn	440	439	436
Whole milk calves, alfalfa hay, corn	404	470	420

At the close of the experiment, May 27, the entire lot averaged 800 pounds per head in the college feed-lots. The shrinkage in shipping to Kansas City was 3 per cent. Thirty-two steers averaged 838 pounds and sold at $5.40 per hundredweight; 74 heifers averaged 758 pounds and sold at $5.35; and 18 heifers averaged 741 pounds and sold at $5.15. Six head of heifers went as springers.

The 32 steers dressed 57.2 per cent and tallowed 6.1 per cent. The 74 heifers dressed 57 per cent and tallowed 6.3 per cent. The 18 heifers dressed 56.6 per cent and tallowed 6.6 per cent.

DEMAND FOR BABY BEEF.

The packers report that they have never been able to supply the demand for baby beef, and that there is no likelihood of the market becoming oversupplied, even though stockmen generally should go to producing it. The best demand and the highest prices are in the months of April, May, and June. During these months butchers want light cuts and they find much less waste in baby beef than in that from larger cattle. After July 1 the price for baby beef has a tendency to become lower as light grass-fed cattle compete. The best prices are obtained for well-fattened calves weighing from six hundred to one thousand pounds. Calves either above or below these weights do not

op the market. The age should be rom twelve to fourteen months.

ADVANTAGES FOR BABY BEEF.

The production of baby beef makes great saving in feed. The remarkble feature of this experiment is the mall amount of feed required to make 00 pounds of gain. Last year the Kanas Experiment Station reported makng 100 pounds of gain on 1,000-pound teers with 718 and 780 pounds of corn. Many old feeders wrote us that they ould not make such gains with so litle feed. Professor Henry reports that he finds the average in a large number of feeding experiments with steers to e 100 pounds of gain for 1,000 pounds of grain and 500 pounds of roughage. These calves averaged 100 pounds of ain for from 439 to 594 pounds of grain nd 426 to 626 pounds of hay, about one-alf the amount required for mature cattle, and the calves sold for as high prices per 100 as the same quality of mature steers.

The production of baby beef returns igh prices for the heifers. These alves were put in the feed-lots at weanng time and were probably a little ver a year old when sold in Kansas City, May 29. The 32 steers sold at 5.40 and brought an average of $45.29 ach; 74 of the best heifers sold at $5.35 nd brought $40.60 each, and the 18 poorest heifers sold at $5.15 and rought $38.20 each. All the steers were home-bred, while 60 of the heifers were range-bred.

For equal weights and quality, the packers will pay as much for fat year-ld calves as they will for steers at the ame age, and this is the only time in he heifer's life when she will bring as much, pound for pound, as a steer.

The prices secured for these year-old heifer calves were fully as great as would have been secured if they had been kept under usual conditions and marketed two years later. The production of baby beef gives quick returns n the investment. The farmer who aises and fattens mature steers has to urnish pasture for his cows, the year-ings, the 2-year-olds, and often for the -year-old steers. He waits three years rom the time the calf is born until he ealizes on the investment, and only ne-fourth of his herd are cows producng calves. If the farmer will produce aby beef, he can fill his pasture to the ull limit with cows producing calves nd he will realize on the cavles twelve onths from the date of their birth.

The production of baby beef offers reatly increased profits to the dairyman. Experiments made at the Kanas Experiment Station show that the crub cow may be bought at ordinary rices and if selected for dairy farms ill produce from fifty to seventy-five ollars' worth of milk per year per cow t creamery prices. Our calves fed reamery skim-milk until weaning, ade the greatest gains in feed-lots and old at forty and forty-five dollars per ead. This shows that a gross income from ninety to one hundred and twen- dollars per cow can be made by the airyman who will push both cow and lf. When a farmer can sell a skim-ilk calf for forty to forty-five dollars, we sold these, it adds largely to the rofits from dairying.

HOW TO PRODUCE BABY BEEF.

The calves used in this experiment ere "common-bred" ones and they ade good gains. The farmer whose siness was producing baby beef ould use the best type of bull that he uld secure—a short-legged, thick-eated, blocky, and quick-maturing. No periments have been made to test the atter, but general observation indites that the quickest growth and aviest weight at a year-old can be cured by judiciously crossing the beef-eeds, using high-grade cows of one eed and pure-bred bulls of another. ith good breeding and good feeding average weight of 1,000 pounds may secured at twelve to fourteen months age.

Where dairying and baby beef are to carried on together the greatest inme may be secured by selecting good-ed grade beef-cows that are good lkers, and crossing them with pure-ed beef-bulls of the quick-maturing pe. Such cows are found in every mmunity in eastern and central Kans. The high-grade Shorthorn, with ominent dairy points, is an example. ch cows will give from fifty to sev-y-five dollars' worth of butter-fat ch per year at present prices, and ir calves when marketed as baby ef will bring forty to fifty dollars ch. In every case, home-grown stock de the best gains. In the first four s, there were in each lot fifteen ge-calves and five calves that had with their dams in small pastures under ordinary farm conditions. The home-grown calves made an average gain of 399 pounds, the rang calves 369 pounds.

In three lots that were fed alfalfa hay and corn, range calves gained an average of 396 pounds each, calves that ran with their dams in small pastures 436 pounds each, and calves raised on skim-milk 440 pounds each.

The tamer calves are when they go in the feed-lots the better the gains and the cheaper every pound of gain is put on. The farmer who raises his own stock and pets them has every advantage in producing beef cheaply over the ranchman and over the feeder who buys at stock-yards and gets calves that have had all the loss and excitement of shipping.

Alfalfa hay and corn gave the greatest gains, followed by alfalfa hay and Kaffir-corn. At all times through the seven months' feeding the calves fed alfalfa hay appeared to be in the best condition, and they finished the best. The corn and Kaffir-corn were fed whole for a little over half the experiment and were then ground for the finish. The soy-beans balanced up the prairie hay and corn and Kaffir-corn, helping to secure good gains with these feeds, though not as good as was made by alfalfa.

Kaffir-corn did not show as good gains as corn, but the calves did well on it, and it will be a profitable grain to grow on upland and in the dry regions of the West for feeding for baby beef. The farmer who produces baby beef should raise alfalfa and make it the basis for feeding both cow and calf. Cow-peas, soy-beans, field-peas, and clover-hays may be used to give variety, and all these crops increase the fertility of the soil, as well as supply the best feed at the lowest cost.

Mr. Avery: Do you think these calves on the 1st of October, which is the usual weaning time for calves, should be put on full feed to carry them up to May or June?

Professor Cottrell: You can make them earlier than that. They are growing all the time.

Mr. Adams: Would it be a detriment to farmers to let the calves at their mothers twice a day?

Professor Cottrell: Not up to time of six months, but after that the majority of calves would better be taken off milk. Now, in regard to this crossing—high-grade Angus to a whiteface—it is a mere theory of mine. I have no experimental authority to show the results claimed.

Mr. Robison: If I understand you, you were not recommending this crossing only for beef calves?

Professor Cottrell: That is all, but not for breeding purposes.

Steers to Feed for Profit.

J. D. SMALL, ATCHISON.

In the early days when our country was sparsely settled, and when its industries were in their infancy; when the wants of our people were simple and few; when our forests and streams teemed with game and fish; when all man had to do to provide his family with meat was to go forth with gun and rod and in a few hours return amply provided for the day's wants, it would not have been thought necessary for a great association to be formed and to gather together yearly to discuss the best manner in which to feed and raise cattle for market. But since these sources of meat-supply have disappeared and beef has become one of the great staple foods of the world, and the facilities for the handling and marketing of the same have been reduced to a science, and through necessity and for profit we have become one of the greatest beef-producing nations on the earth, it is meet that we should gather together from time to time to discuss the great questions relating to the raising, fattening and marketing of cattle.

One of these questions, a question that has called forth many experiments, and a question that no doubt interests more of us than any other, is the kind of steers to feed for profit. I was requested by your secretary to make this the subject of my remarks. This is a question that every feeder must decide for himself. The existing circumstances are not always the same. When feed is plentiful, and everybody is feeding cattle, the prices of beef will rule low. When feed is scarce, as it has been this season, the price of beef will rule high. But the price of feed will be apt to offset the enhanced price of beef, and the only way to overcome this is to buy your feeder at a price that under normal conditions will, when ready for market, make a reasonable profit. It makes no difference what kind of a steer is fed if he does not cost too much. We are too apt to be governed by the past rather than by the present. It is no reason that because under the present conditions beef is selling for 6 cents a pound that next season under entirely different circumstances it will sell for 5 cents. It makes no difference whether the steer is a high-bred Shorthorn, Hereford, or an Arkansas doby or long-horned Texan. The supply and demand will have something to do with the profits, and if the feeder has been bought too high we can not reasonably expect to reap a profit.

How many times have we seen the little 1,000 pound butchers' stuff selling at the same price as the big, heavy 1,500 pound export steer, the one costing perhaps only half or two-thirds as much as the other when it went into the feed-lot. A steer bought for 2 cents and selling for 3 cents will surely make a profit, when a steer bought for 4½ cents and selling for 5 cents will lose money. So when it comes to what kind of a steer to feed for profit it depends on the good judgment of the buyer and the circumstances surrounding the operation.

But if we wish to determine what kind of a steer will give us the greatest number of pounds of gain for our feed, it is another question. There is no doubt but what the well-bred steer of any of our well-known beef breeds, such as the Hereford, Shorthorn, Polled-Angus, or Aberdeen, will give more adequate returns in flesh than any poorly bred or scrub cattle, providing they are properly fed. All of these breeds have their staunch advocates as being beef producers, and all have their good qualities. But why is it that some feeders of all the above breds go to market with well-finished beef that always sells at the highest market price and others, feeding the same kind of cattle, fall far below the top? Is it the fault of the steer? No, decidedly, no. It is the manner in which the steer has been fed and cared for and until we learn how to feed cattle by giving properly balanced rations, good care, and kind treatment, it will be no use for us to ask the best kind of steer to feed for profit because the veriest kind of scrub will in some measure pay for this care, while the best-bred steer on the face of God's green earth will as surely return us in kind for poor feed, foul water, and ill treatment.

It has been said that he who has made two blades of grass to grow where only one grew before has been of great benefit to mankind. What shall we say of he who produces two pounds of beef with the same amount of feed that it took to produce one before? Will not the increased production of beef to the pounds of grain fed in a great measure solve the question of profits or loss? How many of us, after feeding our cattle, have been disappointed in the profits simply because the gain has not been as much as it should be? The steer has eaten enough, but because of some constituent lacking in the ration he failed to assimilate his food and did not give us the results expected and desired—in fact has not made enough pounds in gain for each pound of grain consumed.

It is no doubt a fact that five pounds to the bushel of grain is a good average gain for many of our cattle feeders to make; and I will say here that eight to ten pounds should be the amount of gain we should obtain for every bushel of grain fed to a well-bred good quality of beef steer.

When a feeder falls below a return of eight pounds of gain for every bushel of grain fed to a steer, he is not doing himself justice. His aim should be to make a gain of ten pounds of flesh for every bushel of grain fed. Then, if he has only reached a limit of seven pounds he has done well, and can figure from the standard of gain he is able to make, whether he can feed a certain priced feed to steers, costing a certain price per pound, with a reasonable expectation of reaping a profit.

Any school-boy can make the mathematical calculation that when grain is 30 cents per bushel, if we are enabled to make eight pounds of gain to the bushel the beef costs 3¾ cents a pound; if the grain costs 60 cents a bushel, the beef costs 7½ cents a pound; while if we make only 5 pounds of gain the beef in the first place cost us 6 cents a pound and in the second place 12 cents. So that the feeder who makes the greatest gain from a bushel of grain will have a decided advantage in the way of profits, as he not only gets more pounds of beef to every bushel of grain fed, but he gets his cattle ready for market in much less time.

We can only get these results first by supplying our cattle with a good balanced ration, fed in good, clean troughs; second, by always providing pure water where the steer can go and drink at his own pleasure. Do not forget to always keep salt in the feed-lot. There has recently been published various works on the constituents and feeding value of our different food-products, the careful study of which will enable any of us to provide a well-balanced ration for our steers, and to derive the best and most profitable results from our efforts in producing beef for market.

Professor Henry: How many times a day do you feed steers grain?

Mr. Small: We generally feed so many that it takes all day to feed them once; but you might say our steers were practically fed twice a day. We always feed a certain bunch at a certain hour in the day. Otherwise the cattle get uneasy. We endeavor, after the cattle are on full feed, to feed them just what they will clean up.

Mr. Warner: What roughness do you prefer to feed?

Mr. Small: Alfalfa.

Mr. Warner: Do you raise it in Atchison County?

Mr. Small: No, sir.

Mr. Mains: Do you feed anything else with your corn?

Mr. Small: No, sir. We used to feed linseed-oil-cake, which is about the only feed we ever mixed with any feed. Of late years I am running a mill and we degerminate the corn and this goes into the feed and that is the only difference except we feed corn and alfalfa.

A member: Have you had any experience with these stock foods?

Mr. Small: But little.

Mr. Avery: Do you recommend using cottonseed-meal?

Mr. Small: I will give you my experience with it, and you could not give it to me as a gift now. I fed it for a while. I did not over-feed it at any time. I had to take it away from my cattle and start them over. I had the best of experiment with it. I took three bunches of cattle and fed one bunch cottonseed-meal mixed with rough feed. I fed another bunch on corn-cob feed, and the other bunch on clear corn and linseed-oil-cake—ground corn. We fed them for about one hundred days, or,

if I remember right, one hundred and twenty days. The cattle receiving ground corn and linseed-oil-cake went to market first. Those receiving linseed-meal and corn-cob feed went to market next, but the ones that were fed cotton-seed-meal never did get fat.

A member: Do you recommend grinding?

Mr. Small: I grind everything and cut all the hay.

A member: Do you use any long hay in rough hay?

Mr. Small: No, sir.

A member: Do you mix hay and ground feed together?

Mr. Small: Yes, sir; altogether.

Mr. Mains: I am feeding cottonseed-meal with corn now, and never knew my cattle to do better. I would like to know the cause for the difference.

Mr. Small: My cattle did well for about sixty days.

A member: How much did you feed?

Mr. Small: About six pounds.

A member: Is not that too much?

Mr. Small: I don't know.

J. W. Robison: Gentlemen, I don't know that I can give you any definite information worthy the taking up of your time. I consulted Professor Cotrell about feed, but we did not quite agree on the amount that should be fed. I thought I would take my own way, which I did, commencing with two pounds of feed and fed alfalfa. We fed some alfalfa not so old, and then some that was 3 years old, which worked better than the new. Last week I threshed some corn and am now getting cattle onto feed with cottonseed-meal, twelve pounds wheat-meal, and corn-meal mixed. A preparation of corn was ground up, but the cattle did not seem to get the benefit from it that I expected. They were mostly on 2-year-old corn. Some of the cattle, while we were getting them on feed, were fed 4 pounds cottonseed-meal to 1¾ pounds a day. They were only on partial feed. We expected a gain of a pound or a pound and a half a day. I have found no injurious effects from the meal. I have kept close watch and have never had cattle do better than they are doing on 8 pounds of cottonseed. We find more good results with 8 pounds. I expect to increase the amount to 10 pounds a day before we ship. For one hundred days I think there is little danger of their going to pieces.

Mr. Small: At the time I was feeding cottonseed-meal I was not cutting hay at all.

The Relation of the Breeder of Pure-bred Stock to the Farmer and Feeder.

H. W. MUNFORD, PROFESSOR OF ANIMAL HUSBANDRY, ILLINOIS AGRICULTURAL COLLEGE.

For a long time we have believed that the relationship between the breeder of pure-bred animals to the feeder and market-cattle has not been clearly understood. Breeders, and feeders as well, have at times seemed to utterly disregard the possibility of mutual helpfulness and even of mutual dependency. The real place of pure-bred animals has frequently been lost sight of, which has led to practices that have not worked out for the best interests of breeders of pure-bred animals or the men whose rightful sphere of usefulness is producing animals for the block.

An active demand for good beef, coupled with a scarcity of prime steers, is bound to bring about relatively high prices for prime bullocks on hoof and hook. High prices for market beef-cattle invariably stimulate prices for pure-bred beef-cattle and as surely great activity in the breeding of the same. Usually the stimulation of this branch of the live stock trade, aided by the ever enthusiastic efforts and aggressive methods of stock-breeders, is at times, beyond a point warranted by the actual conditions existing in the open market trade.

Prices of pure-bred cattle at the beginning of such an epoch are at times slow in reaching values fully warranted by the trade, due no doubt to the fact that producers of prime market-cattle and prospective breeders are conservative. Doubtless the lessons learned during recent years of depression in the trade are still fresh in their minds, but as time goes on, pure-bred beef-cattle sell at prices which no more indicate their actual worth to the feeder and farmer than do the prices of champion steers at fat-stock shows represent the actual condition of trade in prime steers. To be sure, we do not all look at these conditions out of the same eyes, nor do we all interpret them in the same way; but I take it that we are all interested in looking at and solving these questions in such a way that ultimately the breeder and feeder shall reap the greatest and most lasting profits.

There can be but little doubt that relatively high prices for pure-bred beef-cattle influences many—I was about to say young and inexperienced men—but I may as well not qualify it and say what is undoubtedly true, that relatively high prices for pure-bred beef-cattle influence many men to embark in the breeding of pure-bred cattle that have no fitness either by nature, training, or experience for the work and consequently have no business meddling with it. Failure invariably attends those who thus embark in the pure-bred cattle trade. Many of these men fail not altogether because they lack experience, but because they are unable to own herds of a size that would warrant them being called breeders.

Some men seemed to have formed the idea that the breeding of fine cattle is an easy thing. It is unfortunate that many breeders make no effort to dispel such folly with a prospective buyer on the ground. The sooner men generally know and appreciate that it is no child's play to breed fine cattle the better, and breeders generally will make no mistake in aiding to establish such principles.

We have but to look back over the generations of the past and single out here and there a man who has really been a breeder and improver of cattle. Without exception they have been men of rare judgment and intellectual attainments. Men who have not gone into the business as a diversion, men strong enough to bear up under discouragement, resourceful and quick to catch at suggestions of promise. I do not hesitate to say that these are the men to whom we owe our gratitude for whatever of merit exists in our pure-bred cattle to-day. These are the men who have, during times of depression, saved our herds from utter anihilation; and, fellow breeders, it is to such men as these that we must look for whatever promise of permanency there is in this industry. Fortunate, indeed, is the man having but few cows, who is able to produce animals of outstanding merit. The rule is, and ever has been, that the breeding of fine cattle is a thing not to be trifled with, but gone into, heart and soul, on a scale large enough to bring results. The dabbler invariably fails.

A failure in breeding pure-bred stock is very apt to be followed by a lack of confidence in pure-bred animals as a necessary factor in live-stock husbandry, a conclusion as unfortunate as it is false. But you say the man who falls short of success in breeding pure-bred stock would fail as a breeder or feeder of market-cattle. This does not necessarily follow. The chances are that when a man fails in the breeding of pure-bred animals, we lose from the live-stock ranks an active man who may have been a success as a breeder and feeder of market-cattle, and as such increase the legitimate and rational demand for pure-bred bulls. Undoubtedly, we do not all agree as to the legitimate place of pure-bred animals in the live-stock trade of this country. We believe that there is no room for doubt as to the absolute necessity of the introduction of the blood of pure-bred beef-sires into the herds of farm and ranch where the object is the production of prime beef.

When we say the pure-bred beef-sire, we at the same time infer the necessity of good blood being attended by individual merit. Granted that the pure-bred sire is a necessity, we believe it is equally true that the pure-bred cow is not essential, advisable, or possible as a factor in the production of the prime steer for the open market. The use of a pure-bred bull on a herd of high-grade cows need not add $2 each to the cost of calves intended as the foundation for prime steers, while if pure-bred cows were to be used, it would increase the cost of each calf $25, at a conservative estimate, or beyond a point which would be profitable to the producer. Looking at the proposition from this standpoint, the case is a clear one that the rational relation of the breeder of pure-bred stock to the feeder is one of furnishing him with pure-bred bulls rather than cows. Which ever way we look at this question if we do so thoughtfully and with a desire to get at the truth, we must come to the inevitable conclusion that the breeding and sale of pure-bred bulls is really the back bone of the pure-bred cattle-breeding industry.

Pure-bred cows are sold not as producers of market-cattle, but as the foundation of breeding-herds of pure-bred cattle, that shall in turn produce pure-bred bulls and cows. Breeders of pure-bred cattle everywhere seem to have lost sight of the fact that every time a registered female is sold, competition is invited; but some one may say, why not invite and even encourage competition? I can only answer this by saying that in my judgment it is not necessary to invite, much less encourage, competition in this line. A business that is naturally as attractive as the breeding of pure-bred beef-cattle, that promises fair interest on the money invested, does not need any "drumming up." Besides, the kind of competition that is secured by inexperienced men embarking in the business under the influence of a stimulus of high prices is not the kind of competition that will tend to furnish a normal and stable market for pure-bred beef-cattle. Our judgment would be to eliminate as far as possible this element of competition by discouraging rather than encouraging the indiscriminate founding of herds by men whom you have great reason for believing will fail in the undertaking.

True they furnish a present market for a few females, but where failure is inevitable, they are bound to do the business, and the breed you represent, immeasurable harm. Undoubtedly, I will be considered as preaching a queer doctrine and one that will not work, by suggesting that breeders discourage the sale of cattle for which they have demand.

We have but to look back over the history of this industry in the past, to satisfy ourselves that the failure of a majority of breeders to recognize this principle of forcing a large number of females on the market when there is a demand for them by inexperienced breeders, is not wholly, but partly responsible for periodical slumps in the pure-bred cattle trade. We confidently believe that if a united effort were directed along this line by breeders of pure-bred cattle the country over, we should have a continuous, stable, and profitable market for all of our good cattle, a condition which would make steady improvement possible. As it is, we get nicely prepared for breeding some good cattle when suddenly we find we can not afford to do so, owing to a slump in prices. Again, the breeder of pure-bred cattle may well ask, What are we to do with the females we breed if we are not to sell them? We concede that this is the most difficult question you could propound; however, it is not unanswerable. Many of the breeders have no doubt observed the opinion expressed by Colonel Woods in his letter to the Breeders' Gazette and later by many breeders as to the advisibility of having one-third of our bull calves castrated. We are not prepared to say that this is the right thing to do, as we do not believe that this proposition strikes at the root of the whole matter.

That we have a large number of pure-bred beef-bulls going onto the market that ought not to, we admit, and still, looking at it from the standpoint of the breeder and feeder of market-cattle, practically every pure-bred bull now produced could be used to advantage. Not so, of course, from the standpoint of the breeder of pure-bred stock. While this is true for the present, the time is surely coming when there will be no market at all for inferior pure-bred bulls even to the producer of market-cattle. The sale of a pure-bred bull to a breeder of steers, even if that bull is not one of high individual excellence, is pretty sure to work such improvement in a common herd of cows that the purchaser of the first pure-bred bull is certain to want another and a better one later on.

Unless we have a smaller per cent of inferior bulls produced in our pure-bred herds in the years to come, we will not have these better bulls to meet the demand of the breeders of market cattle. Certain it is that there ought not to be as large a proportion of inferior bulls produced in our pure-bred herds as there is.

Let us consider briefly why this is so. First of all, we will agree that no matter how well selected a herd may be, both as to cows and bulls and at the same time granting that the herd has been carefully managed as to housing, feed, and the like, there is bound to be, now and again, an inferior bull produced. Second, as long as we have, and we shall always have, men who dabble in the business without experience and judgment sufficient to properly care for their herds, we shall have too many inferior bulls. Third, and I might say that perhaps the most potent factor of all, inferior cows breed inferior bulls. This last cause, or source, from which spring inferior bulls is worthy of our most thoughtful consideration. I say, with Colonel Woods and all the rest, let us castrate all unworthy bulls, but let us send the dam of all inferior bulls to the slaughter-house before the bull gets large enough to take "by the horns." Granting that one-half the calves dropped in a herd are bulls, and the other half heifers, there would be approximately the same number of males and females that ought not to find their way to the breeding-herd. In fact, there ought to be a closer and a more discriminating selection of heifers than bulls, as a large per cent of the bulls are expected to produce a worthy representative of the race.

For sake of argument, however, let us consider that if 33⅓ per cent of all the bulls offered for sale in the country should be castrated, then we hold that their dams should not be allowed to produce; while the dams of an equal per cent of heifers should not be permitted to go to the bull. This would take care of 66⅔ per cent of the females bred. We believe there would be little trouble in disposing of the other 33⅓ per cent of the females annually produced in any breeding-herd.

Nor need the heifers turned to the butcher be without their value to the breeder. Is it not true that we as breeders should make a more careful study of the carcasses of some of the cattle we are producing and calling pure-bred? We think so. Recently we heard one of the best, if not the best, informed man on fat cattle, on both hoof and hook, say that "Our improved breeds of beef-cattle were getting to contain so large a per cent of fat that they were not as profitable from the butcher's standpoint as a plainer-bred steer, and so far as quality is concerned a plainer-bred steer's carcass would have sufficient quality if the steer has been properly fed and ripened." Here certainly is food for thought for real breeders; and by real breeders I mean, not dealers and speculators who buy cattle in one sale to sell in another, perhaps before the cow would have time to produce a calf, but men who buy cattle in numbers sufficient to found a herd with the determination of improving certain characteristics of the breed.

Recognizing their proper functions in the live stock trade, the breeder and feeder must be brought into closer relationship and work more for each other's interests. Both are absolutely necessary, neither one could successfully prosecute their branch of this vast and growing industry without the other. Intelligent cooperation is always to be preferred to coertion.

Finally, farmers and feeders should not, and probably do not, look upon breeders as waiting and watching for their scalps; and on the other hand the breeders should not, and doubtless do not, look upon farmers and feeders as their possible victims.

World's Fair in 1903.

The President: The next thing on the program is "The World's Fair at St. Louis in 1903." Mr. Frederick W. Taylor representing the interests of the exposition company is present, and will now address the association.

Mr. Taylor gave a rough outline of the general plans of the exposition, but said no data of consequence has yet been arranged for the edification of the public.

"I can promise this much, however," said Mr. Taylor, "and that is the St.

Louis fair in 1903 will be bigger, grander, and greater than anything of its kind ever held in this country. It will be a typical World's fair. Enthusiasm among the different members of the special committees and commissions is at a red heat, and great progress is being made in pushing the preliminary details.

"A special effort is being made towards making a fine show with the live stock and agricultural department. A larger area has been devoted to these industries than had ever been given before by other fairs and expositions and the managers expect an immense showing in both branches. The principal agricultural building will cover some thirty acres of ground, and will be large enough to accommodate whatever the farmers of the West will contribute to the exposition.

"We look for the Kansas exhibit to be a thing of beauty and a joy forever. I come here to-day to ask the members of this association to see they do everything in their power to make the exhibition from their State a success. Citizens of a State are given too much to waiting for organized effort on the part of the commonwealth. I hope each member here will see that his own efforts are unflaggingly devoted to furthering the interests of his community in the St. Louis Exposition. We are expecting great things from Kansas, and I know we will not be disappointed."

World's Fair Committee.

G. W. Berry, Berryton; Fred Cowley, Columbus; A. A. Stannard Emporia; H. W. Avery, Wakefield; H. W. McAfee, Topeka; H. A. Heath, Secretary of Committee.

TABLE I.

Slaughter test of pigs fed protein-rich and protein-poor rations, weight per 100 pounds carcass:

Station and feed.	Shrinkage per cwt.	Blood oz.	Liver oz.	Kidneys oz.	Tenderloin oz.	Leaflard oz.	Strength of thigh-bones per 100-lb. carcass. lbs.
Missouri—							
Lot 1, middlings, blood	23	..	48	7.1	..	45	...
Lot 2, corn-meal	21	..	32	4.1	..	86	...
Wisconsin—							
Lot 1, milk, middlings, blood	19	55	27	5.0	17	80	503
Lot 2, corn-meal	20	42	24	4.2	14	89	380
Kansas—							
Lot 1, shorts, bran	23	51	45	7.4	13	65	357
Lot 2, potatoes, tallow, corn	21	37	34	5.8	10	75	332

TABLE II.

Feeding pigs corn-meal with or without bone-meal and hardwood ashes. Wisconsin Station results when feeding:

	Bone-meal.	Ashes.	Neither.
Corn-meal for 100 pounds gain, lbs	487	491	629
Strength of thigh-bones, lbs	680	581	301
Ash of thigh-bones, grains	166	150	107

President Nichols' Address.

The next paper on the program was that of Prof. E. R. Nichols, president of the Kansas Agricultural College, on the subject, "The Work of Agricultural Colleges."

Professor Nichols opened with a eulogy upon the life of Senator Morrill, of Vermont, the father of the National movement to establish agricultural schools in each State. He showed how, after the final passage of the bill and the signing of the same by President Lincoln in 1861, the different States and Territories availed themselves of the opportunity offered them by the government and established colleges within their boundaries.

"The object of the agricultural college is primarily to enable the farmer boys of the States to obtain a practical knowledge of the agricultural and mechanical arts," said he. "Agricultural colleges do not educate men to be farmers so much as they educate farmers to be men. They show the young men what to do with their hands and minds and also how to do it. While the progress of the colleges has been something phenomenal, I can not call the system a success until every schoolteacher throughout the State has a knowledge of agricultural matters, and until every school-yard is a small experiment station."

Professor Henry's Address.

Next on the program was an address by Prof. W. A. Henry, dean of the Wisconsin College of Agriculture. Subject, "Slaughter Test of Pigs, Fed Protein-rich and Protein-poor Rations."

Professor Henry discussed the development of the body of young pigs by various feeding-stuffs. He was equipped with a large chart showing the results of a series of experiments made at the Wisconsin, Missouri, and Kansas Agricultural Colleges. His talk was of a practical nature, and the stock-breeders appeared to think that nothing of more value had been presented before them; which is of little wonder, as it is conceded that there is no more noted agricultural experimentalist in the world than Professor Henry. He is the author of a book, "Feeds and Feeding," which is accepted as of the highest authority. Mr. Henry has carried on a wonderful campaign of education among the farmers of Wisconsin, and is credited with having caused land in the southern portion of his State to treble in value as the result of his teachings. He told his Kansas hearers that the great shortage of the corn crop in the State this season would prove a blessing, as it would lead to a better understanding of the value of wheat and alfalfa as feed. "There is a mine of wealth for Kansas in alfalfa and soy-beans," he said.

Professor Henry, in opening his speech, declared that it was not his intention to run down corn as a hog-feed, but rather to show what a mine of wealth the Kansas farmers have in alfalfa, wheat, and soy-beans.

The pigs fed under his direction were not over eighty or one hundred days old, so the experiment could not be fully tested as to its effects on early-maturing stock.

By reference to Mr. Henry's chart, which is reproduced below, it will be observed that the corn diet did not begin to compare with the other feeds tried in the experiment. Corn, he declared, has been fed too extensively in the past and in many sections has resulted in weakened constitutions, unhealthy fat, and finally disease.

The second table given below shows how much corn had to be fed when used in conjunction with bone-meal, ashes, or by itself. The result was decidedly in favor of the addition of the bone or ashes to the corn. Pigs, according to the Professor, crave gritty matter in order to kill the intestinal worms, and alkaline matter to overcome acidity.

Discussion.

A member: You spoke of wood-ashes; would you let them use coal-ashes?

Professor Henry: I would let them eat soap-stone, rotten-wood, coal-ashes, lime, or anything of that kind.

A member: Have you had any experience in the use of charcoal?

Professor Henry: I would feed it as a corrective to the stomach.

A member: Suppose you have no wood- or coal-ashes, what then?

Professor Henry: I should try to get some alkaline food. In your alfalfa you have protein and also in your soy-beans.

Mr. Hanna. Have you found any ashes better than cob-ashes?

Professor Henry: No, sir.

A member: Why do you feed dry blood?

Professor Henry: I wanted to use the registered protein food.

A member: Did you ever try using fresh blood?

Professor Henry: No, sir.

A member: Cottonseed-meal?

Professor Henry: Let the people in the Old World use that.

A member: Can you tell anything that will prevent the germs of disease in hogs better than the Government remedy?

Professor Henry: I don't care to get on that at this time. I want you to keep your hogs strong through the feed you give them.

A member: Which feed would you use for breeding hogs?

Professor Henry: Suppose you have sows of large body. If you feed too much corn they get fat. Recently the Government has been carrying on an experiment with soldiers so as to see how little they could live on for several days. You must not have brood-sows too fat. Corn is the best feed we have in Kansas and Wisconsin. Give your brood-sows blood and muscle.

Professor Plumb's Address.

The next address was by Prof. C. S. Plumb, of the Indiana Exprimental Station. Subject, "The Silo."

Professor Plumb talked for a short time on silos and silage. He traced the development of the silo from the old crude form of weights and boxes to the more modern structures with no covers whatever. The Professor praised the silage products as an economical feed. He found that but six in the audience owned silos, and appeared to be somewhat surprised by the showing. He gave advice as to the best manner of durable silos, and also how to care for the feed in the best manner. Professor Plumb stated that in view of the uncertainty of fall seasons, the man who has one or more silos is placed in a remarkably independent position with regard to his next year's feed.

A member: Did you cut the silage in the field?

Professor Plumb: We cut it with a harvester in the field.

A member: What is the average price?

Professor Plumb: It depends on the distance you must haul it to the silo, etc. I have estimated it will cost in the neighborhood of $1.25 per ton.

A member: Do you use anything but corn?

Professor Plumb: Yes; we put in all the corn we could get in our silo and filled in with soy-beans and pea-vines.

A member: Does a man take any risk in throwing the corn whole into the silo without cutting it?

Professor Plumb: I don't think he takes any risk at all. I would lay emphasis on this point: In building a silo make it tight, for the fewer holes there are in it the better the silage will keep.

National Live Stock Association Committee.

J. W. Robison, of Butler County, was named as chairman of the commission to represent Kansas at the meeting of the National Live Stock Association to be held in Kansas City next December, with O. P. Updegraff, of Topeka, as secretary; M. S. Babcock, of Nortonville; and E. D. King, of Burlington, were placed on the committee, and the officers of the association and the executive committee was empowered to make further additions to which the Kansas Improved Stock Breeders' Association were entitled to under its membership in the National Association.

Resolutions Adopted.

Resolved, That this association most heartily commend the suggestion of Governor Stanley for more intimate business relations with the Republic of Mexico, and that by reciprocity treaty or otherwise all honorable efforts should be made to extend our business intercourse with the people of that country; believing as we do that such intercourse would be very beneficial to the business interests of both countries.

Resolved, That we, the Improved Live Stock Breeders' Association of Kansas, believing that a State fair would be of far reaching and incaluculable benefit to our State, and of great value to every pursuit of industry followed by our citizenship, do hereby pledge ourselves as an association and as individuals to use our best efforts to promote a State fair; and,

Resolved, That the officers of this association use all possible honorable means to place before the general public facts and arguments for a State fair, that, in so far as possible, nominees of legislative conventions may be instructed to vote for such State fair proposition at the next session of the Legislature; and further,

Resolved, That inasmuch as the Central Kansas Fair Association propose to hold an agricultural and live stock fair in the city of Hutchinson this coming fall on a scale equaling the usual State fair, that we hereby tender to that association any help or assistance or endeavor we can to aid and further it as the battle-ground for the show material for the State of Kansas this year, preparatory to the Louisiana Purchase Exposition at St. Louis in 1903.

A unanimous vote of thanks was tendered the vistors from other States who contributed articles to the program. A

(Continued on page 65.)