Proceedings

OF THE

Tenth Annual Meeting

OF THE

Interstate Association

of

Live Stock Sanitary Boards,

IN THE

Senate Chamber,

SPRINGFIELD, ILLINOIS,

August 15-16, 1906.
COMPLIMENTS OF

The United States Livestock Sanitary Association

R. A. Hendershott, Secretary
Tenth Annual Meeting
OF THE
Interstate Association
of Live Stock Sanitary Boards
HELD IN THE
..Senate Chamber, Springfield, Illinois..

August 15-16, 1906


Meeting called to order by President M. M. Hankins, of Quanah, Texas, at 10.30 A. M.


The President appointed Ex-President W. P. Smith, of Monticello, Ill., to introduce Governor Charles S. Deneen for an address of welcome.

Mr. Smith in introducing Governor Deneen, said: "Gentlemen of the Association you have probably all heard of Illinois. We are rather proud of it. We have a good many big things in the State. One of the biggest things we have had recently has been an investigation of the live stock interests, but notwithstanding that the Live Stock Board of
Illinois has been rigidly investigated we are proud of the fact that we have come out of it unscathed."

There are other things we are proud of. One of the biggest is Governor Deneen, and I take great pleasure in introducing Governor Charles S. Deneen.

Address of Welcome on Behalf of the State of Illinois, by His Excellency, Governor Charles S. Deneen.

"In some way or other the gentlemen in my office omitted to tell me I was to speak here and I did not discover it until a few minutes ago. We have had troubles of our own in the past months. There is very little to say at a meeting like this. Where an audience is very large we think together as one and sometimes they are carried away by exaggeration, but where a few gather together we are required to talk facts and sense, and to talk sense about things I know little about is a task. The governor is expected to know a little about every thing. Our state is very much interested in your work. As you all know we have lately been investigated. I don't know how the board escaped but they did. I don't know whether they got in a cyclone cellar or not but the fact is that notwithstanding charges were made our board escaped and no charges were made against them. The gentleman who wrote the book that caused the investigation to be made lived for eighteen months near the stock yards. My residence is within three miles of the stock yards and through legal affairs I have been intimately acquainted with it. That man resided back of the dump for eighteen months gathering material for his book. He went there as a critic and I think it is a compliment to the State that there was no protest or charges made against the State. I think also that the charges were over-stated to a very great extent.

But the department with which you have to deal is interstate. The people are giving more attention to food. Our state takes steps not only as to that but to the coal mines. We do not leave it to one man how to mine coal; the state regulates that. The State does not leave it to the factory how to manufacture goods. I believe the State will multiply and increase its duties and will be a silent partner in all business, and the nation will have to do it. One man becomes known in his neighborhood by the class of goods he produces but the government is known at large. One man may manufacture good goods but he can not afford to have his neighbor manufacture bad goods. In England the government has insisted on honest work. Goods made in Germany are known throughout the world. Recently the "Deutschland" when sail-
ing across the Ocean had a large banner printed across it "Made In Germany and sold in England." Here the time is coming when the legend made in America ought to carry with it the highest record of any country in the world and we will have to do it. It is necessary to send consuls to other countries but it is more necessary that the government impress its approval on everything that leaves this country.

I think your work here is more interesting than heretofore because people are more interested in food products and it is to your advantage to consider things wisely and sanely, not to be considered in a political passion and then when you have done so see that they get wide publicity and further that they progress. I believe that the business men have allowed the politicians to take advantage of them. They have held back objecting and opposing the State, and what the governor should do. We have seen what happened in the meat inspection. A number of things happened that were unwise but after discussion they were acted upon wisely. The meat industry had very little to do with it. The general public got the idea that the meat industry was doing all it could to prevent progress. This is not the right view but it was the public's view. The people should be taken into a kind of partnership. I have said enough. I can only give you the impressions of a layman and not an expert. I believe we should have a settled policy of distributing to the world articles of one kind and character.

I am glad to meet you gentlemen and we extend to you the courtesy of the city and State. We have here some things of National importance. The Lincoln Home is here. We had represented at Portland a replica of Lincoln's home and I have been told it attracted more attention, that humble dwelling, than all others. You ought to see it and the monument. Shortly after I was inaugurated the railway engineers had a meeting and after it was adjourned the railway magnates brought two trains here. It happened that the ten days in which I have to sign bills after the legislature adjourns was about to expire and I could not be with them. Those men came out here in two special trains. They got on boxes and made speeches and men who are informed said they never heard better speeches than from men from Asia and Africa and at a banquet which I attended I heard several mention that the Lincoln monument was the finest thing they saw, that it was magnificent. You ought to go out to see it. Then the cavalry is to parade this afternoon. We have a fine militia and I believe you would appreciate that. We give you the freedom of the city. We want you to be good but I will agree to pardon any of your frailties that happen after dark. I am glad to have met you and I thank you.
Dr. Butler was upon the programme to respond to the address of welcome. His Excellency, Governor Deneen was called away immediately at the close of his address. The response was therefore omitted.

The annual report of the Secretary-Treasurer, S. H. Ward, of St. Paul, Minn., was read and on motion approved.

**Report of Secretary of Inter-State Association of Live Stock Sanitary Boards.**

S. H. Ward, Sec-Treas. August, 1st, 1906

In account with Inter-State Assn of Live Stock Sanitary Boards

Dues received from:

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$100.00

1906.

Paid for stationery $3.50.
Stamps. 3.00
Badges. 2.25
Exchange on checks .40
Printing programmes 3.50
Due Sec-Treas from 1905 15

$12.80

Balance in treasury. $87.20

I have no apology to present to the Association for the failure to publish the proceedings of our last meeting which convened at Guthrie, Ok. The papers were discussed so freely and rapidly by those present that the pencils of the stenographers literally burnt up the paper and their notes were unintelligible.

In order that some record may be had I have endeavored to prepare a short synopsis of a part of the proceedings.
The following resolutions were offered by the committees and were adopted by the Association.

Your committee on Line and Open Season beg leave to report as follows:—

That we recommend to the United States Department of Agriculture that the quarantine line remain as enforced at the present time with the following exceptions:

1. That the counties of Fisher, Scurry and Crane in Texas be released from the restricted quarantine district and that the federal quarantine line in Texas be changed to run through Pecos and Terrell Counties on the line described in exception No. 4 of Rule 1 of B. A. I. Order issued May 1, 1905.

2. That the restrictions be removed from the counties of Roger Mills, and Washita, Oklahoma Territory, and that the portion of Caddo County north of the Rock Island R. R., and that portion of Kiowa County lying north of Township line between Township 4 and 5 north be placed in the restricted quarantine district.

3. That the movement of cattle under restrictions similar to those allowed Osage reservation be allowed to and from that section of the Cherokee Indian Reservation, lying north of the line formed by the continuation of the north line of the Creek Reservation, Indian Territory.

4. That all restrictions be removed from the counties of Surry east of the Mitchell River and all of the county of Alexander, Davie, and Iredell and Rowan, North Carolina, and the following counties in said state to be placed in the restricted quarantine district: Stokes, Forsythe and Davidson.

And we further recommend that the inspection season for the movement of southern cattle to states contiguous to the quarantine line be from November 1st to January 31st, except for the states of Virginia and North Carolina, where the season shall be from December 1st to March 15, and that the inspection season shall extend to March 31st for the movement of cattle to Missouri from the two north tiers of counties, Arkansas: and that during this inspection period, as excepted, Southern cattle admitted for any purpose to all other states without restrictions except as provided by state regulations.

Dr. J. C. Norton, Chairman
Dr. S. H. Ward, Secretary.
Committee.
SHIPMENT OF CATTLE TO NORTHERN STATES FOR FEEDING AND GRAZING.

Be it resolved that the Bureau of Animal Industry be requested to modify, amend or rescind its order prohibiting the shipment of southern cattle to states north of the national quarantine line for feeding and grazing purposes, whenever and wherever any northern state through its Live Stock Sanitary Board shall grant a permit for such shipment into the state which they represent; provided such permit shall require that the consignee of such cattle have facilities for the unloading of such cattle directly onto his premises from the car or boat in which such cattle are transported, and that the car, or boat which transports such cattle shall be disinfected by the consignee immediately after unloading and before such car or boat shall have left the unloading chute.

And provided further, that the consignee of southern cattle shall make affidavit to the effect that such southern cattle have been unloaded strictly in conformity with such permit and further that the car or boat that transported such cattle has been thoroughly disinfected according to the rules laid down for disinfection by the Bureau of Animal Industry of the United States, and is to forward such affidavit to the Secretary of the Live Stock Sanitary Board granting such permit.

And further provided, that such southern cattle shipped out of the quarantined territory shall be placed in quarantine by the authorities of the state to which they are consigned, and shall remain in quarantine until the end of the closed season, unless shipped for immediate slaughter to a point where provision is made for the supervision of such cattle.

EXTERMINATION OF FEVER TICKS.

WHEREAS, the Federal Government, in the exercise of its duties in protecting and fostering the live stock industry of the nation, has expended large sums of public money in the successful control and eradication of such diseases as contagious pleuro-pneumonia, foot and mouth disease, scabies, etc.,

WHEREAS, the Southern cattle tick, tick fever, and the federal cattle quarantine restrictions cause much greater loss to Southern Cattlemen than the diseases above named ever caused the Northern States,

WHEREAS, the cattle tick and the resulting federal quarantine restrictions are the greatest obstacles to the development of the cattle industry of the South, and

WHEREAS, the work of tick extermination already done demon-
strates that it is entirely feasible to eradicate the cattle tick; therefore, be it

RESOLVED, that it is the sense of this meeting that the time has arrived for active and substantial assistance and cooperation from the Federal Government with the Southern States in their efforts to exterminate the Southern Cattle fever tick.

(Mr. M. M. Hankins.
(Dr. Tait Butler.
Committee—(Dr. J. C. Norton.
(Dr. L. C. Tiffany
(Dr. J. G. Ferneyhough

RESOLVED, that this association fully recognizes the efficient service and benefit to the livestock industry accomplished by the Federal Bureau of Animal Industry under the able direction of Dr. D. E. Salmon, as chief of said bureau, from its organization to the present time, and sincerely regrets that he has seen fit to tender his resignation.

(Dr. Tait Butler.
(Mr. M. M. Hankins.
Committee—(Dr. J. C. Norton.
(Dr. L. C. Tiffany.
(Dr. J. G. Ferneyhough.

RESOLVED, that the thanks of this association are due and are hereby tendered Mr. Thomas Morris of Guthrie for his successful efforts in arranging accommodations for the Association meetings, and for his thoughtful courtesy to all our members while in this city.

(Dr. Tait Butler.
(Mr. M. M. Hankins.
Committee—(Dr. J. C. Norton.
(Dr. L. C. Tiffany.
(Dr. J. G. Ferneyhough.

Recognizing that a large proportion of the recent outbreaks of tick fever above the quarantine line result from the use of cars that have become infected within the quarantined area and have subsequently been taken, without disinfection, to points in the safe area, loaded with articles other than southern cattle, in violations of the regulations of the U. S. Department of Agriculture, and then used without disinfection for the transportation of uninfected cattle for stock and feeding purposes, thus infecting them; therefore, be it

RECOMMENDED, that the regulations of the Department of Agriculture, dated May 1, 1905, be so modified as to require that all cattle
cars to be taken either empty or loaded with articles other than southern cattle, from the quarantined area to any point in the area north (or above) the tick fever quarantine line, be first cleaned and disinfected under the supervision of an employee of the Bureau of Animal Industry.

President Smith in his annual address called attention to the B. A. I. order restricting the shipment to the north of southern cattle during the closed season, except for immediate slaughter and recommended that said order be modified under certain conditions.

The question was introduced "what changes if any, should be made in the 28 hour law?" the president pointing out that the rigid enforcement of the law at times worked a great hardship. The subject of public horse drinking fountains was taken up, the writer recommending that drivers be required to carry their own pails.

Dr. L. C. Tiffany presented a paper "Mallein as a diagnostic in incipient glanders." The writer pointed out that it had formerly been the custom to condemn and destroy reacting non clinical cases. After conducting autopsies upon such cases and observing the lesions it was concluded that many of these non clinical reactors might throw off the disease, the custom of destroying such cases had been abandoned with apparently good results. The writers experience with mallein as a diagnostic agent in non clinical cases has been very satisfactory, he believes that the rise of temperature should be sustained for six to eight hours.

Dr. D. F. Luckey presented a paper "Oesophagostoma Inflatum of Cattle," entering into a full description of symptoms and treatment. Treatment recommended, Mag Sulp and an emulsion of gasoline and milk every morning according to the condition of the animal. The outbreaks which had occurred in Mo. had been traced to western or range cattle.

A paper upon "The importance of the county officials support to the State Veterinarian" was read by Dr. J. G. Ferneyhough wherein it was pointed out that to obtain general co-operation of the people it was necessary to educate the average man as to the requirements of the laws covering contagious animal diseases.

Dr. Tait Butler read an interesting paper upon "Tick Extermination."

PRESIDENT'S ANNUAL ADDRESS, BY M. M. HANKINS, OF QUANAH, TEXAS.

GENTLEMEN & MEMBERS:—

As your President, it seems that I should make you a report so as to conform to established precedent. I desire now to
thank you for the honor you conferred upon me by electing me your President at your last meeting,—an honor that I assure you is appreciated by me above any I have ever received.

Since your Association was organized the people have been educated very generally in the prevention of diseases affecting the live stock of the various states represented by this Association. The real cause for this organization was tick fever, at which time the great mass of the people of the various states did not believe that the tick was the transmitter of this disease. But so thorough has been the education of our people by this Association, assisted by the Bureau of Animal Industry that now only "Those who are so blind that they will not see" doubt. It was necessary for the people to be educated as to this disease before any real enforcement of quarantine regulations could be maintained, for without this education, the people looked upon such quarantine lines and regulations as being absurd, and experience has demonstrated that no local law can be reasonably enforced when the people look upon it with doubt and disfavor. This Association is to be congratulated upon the work accomplished in this line; and since our last meeting the Congress of the United States has made a very liberal appropriation to be expended by the Department of Agriculture in exterminating the tick, and it will be in order for you at this meeting to recommend such measures as in your judgment will assist the Department of Agriculture in carrying into effect the end contemplated by this appropriation, and in my judgment the educational features should not be neglected. The theory of starvation of the tick promulgated by Dr. Butler is correct but in countries where there are large pastures, poor fences, and the pastures fully stocked, it is a difficult problem to get the pasture owners to act, on account of the extra fences and short range. My own idea is that these owners must first be educated to the necessity of exterminating the tick and where possible have sheep or goats to run on the pastures sought to be cleaned. Again in practice it will be necessary for each state desiring the assistance of the Department of Agriculture to invite such assistance and probably in several of the states represented by this Association, laws will have to be enacted sufficient to give effect to such regulations as may be found necessary. I do not believe the people have as yet been sufficiently educated to put into effect strenuous laws. But whenever and wherever such is the case there will be but little trouble in compelling the extermination of the tick, but in such localities it will be necessary for the Department of Agriculture to amend its regulations "Except for immediate slaughter" clause and specially limit this to shipments after complying with laws at point of origin. I yet have hopes
that a dip will be found that will be satisfactory and if a dip is found that will be satisfactory, and be cheap enough to be used by all parties it will come nearer solving the tick problem than any other action in my judgment that could be inaugurated. The State Veterinarian of Texas, as also Dr. Joseph W. Parker, representing the B. A. I. located at San Antonio have been experimenting with the various preparations and no doubt you will have their report before you at this meeting.

Since our last meeting the live stock interests have caused a great deal of commotion, touching principally the rate bill, Packing Houses, Commission Companies, and meat Inspection. Agitation caused by each of these subjects, while it may tend temporarily to depress markets, will eventually prove beneficial. Especially do I approve of the Meat Inspection proposition and believe that cities could well afford to look further into their milk supply, as the City of San Antonio, Texas is now doing. But I doubt the authority of Sanitary Boards to act in this regard, as generally the laws creating such Boards or Commissions limit their authority to the control of contagious diseases among the live stock of their respective states.

As your President there has been submitted to me very few questions of importance touching interstate work, and none that deserve to be noticed in this report.

Our last meeting was not reported on account of the stenographer being incompetent, which is very much to be regretted inasmuch as the discussion of the different subjects by the members and especially of our Veterinary members tend to the enlightenment and education of people interested. I promise you, however that our former President Mr. Smith will not be found lacking in this regard here in his Capital City.

I have to report that Louisiana will no doubt pass a Live Stock Sanitary Law at the next session of its Legislature. This is anxiously desired by the States surrounding Louisiana on account of the prevalence of Anthrax in that state.

Dr. Luckey: I took the responsibility on myself to invite the cattlemen of our neighboring State of Arkansas to send a representative to this meeting and I thought the other representatives of the states would welcome him, and I move that this association welcome Senator Brownning of Arkansas.

President Hankins: We are pleased to accord the gentleman the privileges of this convention.

President Hankins: I will appoint one man from each State on the Committee on Line and Open Season. I will appoint Dr. Luckey, of
Missouri; Mr. Moore, of Texas; Mr. Morris, of Oklahoma; and Dr. Butler, of N. Carolina. If any other state wants representation let me know.

On the Committee on Resolutions I will appoint Dr. Tiffany, Mr. Sales, Mr. Dean and Dr. Lamb, of Colorado.

President Hankins: If we do not have a recess we can proceed with the programme.

Mr. Smith: I would suggest that this would be a very appropriate place in which to call up the President's Annual address for discussion and not take up time with what I may have to say. We will probably discuss it better and more intelligently.

President Hankins: If the meeting prefers we will proceed with the discussion of whatever occurs in the president's report.

Dr. Tait Butler: I haven't very much to say in regard to it except on one point mentioned. I want just an opportunity to disclaim the credit given to me. There is absolutely no question in my mind that some one deserves credit for the starvation method but I wish to disclaim credit of that sort.

"Now as to carrying out the method so as to adapt it to conditions and to make it a certain success I believe it is the only method you can ever make practical to a large area. On the large ranches it is possible there is a deficiency in the laws for a short time, but of a large part of the territory affected by the disease I am thoroughly convinced that the starvation method is the only one that can be made applicable and will do more good than any other method. I have discontinued others. Ninety out of one hundred men who undertake greasing fail. Now I grant that it is feasible if you make a success of it, but it is too difficult. As to the starvation method I want to say so far as I am concerned, so far as Virginia, North Carolina, South Carolina, Georgia, Alabama and Mississippi, and I believe you could go further west, so far as they are concerned, the starvation method is applicable. It is infinitely less trouble for me to induce men to divide the pastures than it is to get them sufficiently impressed to have their cattle dipped or greased.

By Dr. Luckey: Dr. Butler's idea of exterminating the tick by starvation is no doubt correct and while that is the principal method, bound to be the principal method, still we may use dips to great advantage. I want to call attention to the fact that no dip so far discovered kills all the ticks, especially mature ticks which are not always killed by the strongest dips as it is used as a preventive of cattle infested. I find that ticks remain on cattle dipped with oil quite a while and during the time they remain on the cattle it prevents them from attaching to other
cattle, and it kills young ticks. Now it is my advice to dip before the
moulting stage. After this stage when the ticks fill up there is noth-
ing that will kill them without injuring the cattle. It is also true that
by the use of West Virginia black oil in my own state, cattle dipped ev-
every two or three weeks were injured by the oil. It is better in cold
weather than in hot weather. It is a valuable thing to use. It is par-
ticularly valuable to use where moving from one pasture to another
where you have to pass over infected runs. When moving a bunch of
non-infected cattle, oil them well, drive them over tickey ground and
they will not become infected at all.

By Dr. Butler: I will say what I had in mind in speaking of the
usefulness of dips in the fall of the year. If the ticks are prevented
from getting on cattle late in the fall none can drop off, then the young
ticks are likely to die and therefore dipping is effectual in cleaning cat-
tle of ticks and preventing them getting on; but to clean a pasture by
dipping it is necessary to carry it on too long and the expense is too
much and it is too hard on the cattle. I make this explanation because I
do not want anybody to think dipping has no place. But I don't think
it is the only matter that should be given consideration in our scheme
for exterminating the ticks.

Mr. Morris of Oklahoma: We all believe that continual dipping is
hard on cattle. It has been demonstrated in Oklahoma that by keeping
after them you get rid of them. Three or four dippings cleaned a good
many pastures in Oklahoma in the past year. The conditions there make
a change of pasture hard. It is all prairie country and homesteaded and
a man reserves about all the land he can for his cattle and probably that
is all the land he has fenced. Until the country gets older and there is
more fencing it is pretty hard to suggest a change of pasture. We peo-
dle down there will have to keep dipping and greasing.

Dr. Butler: The greasing is not so hard on the cattle as it is on the
men. If sufficient is used, it is all right. I would rather, in most of the
eastern states, attempt to get a man to build a new fence or to take his
cattle out of one pasture and I would succeed more often than I would
to get him to grease them. But if he greased them thoroughly or often
enough he would get rid of them. But nine out of ten men that grease
them fail. I can not get them to do it sufficiently. I would rather at-
tempt to get them to build more fences or change pastures, and yet I
have lots of people who get rid of ticks by greasing, but I have ten
others who fail and it is easier to get ten men to make changes than it
it is one to grease. I remember 19 head where the owner greased them
and got rid of ticks but this very man had been working three or four
years and believed in sulphur and grease and I wish he had never heard of it. I don't want to be understood that you can't get rid of them by greasing.

Mr. Morris: I wish to call your attention to the difference between the states of the east and the states of the west.

Dr. Butler: I realize that frequently we see difficulties. Now in Virginia and South Carolina they say our conditions are different. I know there is practically no difference. I find in the Farmers' Institute work they say "your methods are all right but you can't apply them," but they can if they want to. We must not allow that excuse always. I realize there are conditions in the west, but particular methods that apply to one state could apply to another, yet we are told they will not apply; but I believe that the reason they will not apply is that we do not want them to apply. I would like an easier method than the starvation method. I hope that you will find a method of dipping cattle twice, once in the fall and once in the spring but I have not sufficient evidence to lead me to believe that it has been found. While I realize the usefulness of other methods, in our State the starvation method was the easiest and best. Now I would like to hear from Dr. Parker.

Dr. Parker: I never say the expected so for that reason I may branch off on a different line of thought. I have admired Dr. Butler's work ever since I have known of his undertaking. He is certainly a pioneer in this work but I wish to object a little bit to the term, "starvation method." I have only heard of one method being advanced that could not properly be called starvation method and I don't believe it would work. Most every year we have the annual crop of reports in our Texas papers that men have turned out sheep on the range to gather up the ticks and by entangling themselves in the wool they die there by starvation or by the grease of the wool. I don't know how else you are going to get rid of them on the ground, but I believe we have one method in the semi-arid country that is not starvation. Now you experiment with the larva ticks and if you set them in a bottle in the sunlight they will die quickly. They don't wait to starve to death. I believe that instead of vacating the pastures for six or seven months it is possible to vacate them for a short time. One of our experiments is to turn cattle on pasture in dry weather and to watch them carefully and see how long it will be before they pick up ticks.

Dr. Butler: Would you suggest a rotation?

No, I don't believe I will say anything along that line. In regard to getting rid of ticks on animals Dr. Butler lays stress on getting it thoroughly done. It is difficult to get an assistant to do it right. It is dif-
ficult when I do it myself to get it to penetrate to the ears. Even where an animal goes through Beaumont oil it does not kill every tick and I say there is considerable chance for failure in dipping with this method.

In the work of exterminating ticks we must vacate pastures until the ticks on the ground have died from inclemency of the weather or natural causes and free the cattle from ticks by oil. I fully appreciate the matter mentioned by President Hankins. The fact seems that none have sufficient funds, but will say that makes it easier for them. We are not going to progress with great rapidity. In Pecos and Terrel counties we will have great assistance as sheep occupy at least half of the territory.

We are experimenting with a spraying machine. It has been used in Colorado. We are testing it in Texas for ticks but the experiment has not progressed far enough to tell whether it will be a success. There are stages where it will not be perfect.

Dr. Tiffany: In your address you made one statement or direction in which you say you doubt whether or not a state would have power to intercept or restrict any movement of cattle that originated in an inter-state shipment. I am not an attorney but I know we could do it in Illinois. We certainly could restrict the movement of a band of horses. I don't care where a man wanted to ship them, and I do not know why it would not apply to cattle that had ticks. I don't think that in such a case we would have any difficulties in the eradication of ticks.

President Hankins: We did stop them but as a question of law the point there is simply this. The government regulations guarantee that he can take those cattle for certain purposes. Now as soon as it becomes an inter-state shipment they are under government regulations and the only way we can stop them is to call them infected cattle and stop them, and when we do that we are interfering with interstate shipment.

Mr. Smith: The point I raised last year was where an inter-state shipment of cattle passed through Illinois and had been unloaded for the purpose of watering and feeding under the 28 hour law, we allowed them to be loaded on to the same cars they came in and allowed them to go out in the same condition but we did quarantine the premises and held them in quarantine and I believe that is all the authority we would have, and then the government has provided the kind of a receptacle they are to go in at the stock yards. But if the cattle came in for grazing then we have a right to impose the restrictions.

Dr. Butler: Would it not be a fact if those cattle were infected and driven over free territory that the federal regulations would stop them?
The federal regulation is not to drive them but to ship them by railroad or boat or some way so it seems that the federal regulations precludes the driving over free soil.

Mr. Morris: In Oklahoma we don't consider them inter-state commerce until they are aboard the cars.

Dr. Steddem: I think the Federal law provides that.

President Hankins: The regulations go on and provide they shall not do so and so except for immediate slaughter. There was a time in Texas when an inspector was required to go and examine the cattle in the pasture before they started.

Mr. Morris: It seems the very fact that Col. Dean does try to recognize the State and they had no right to drive them unless they were clean.

Dr. Allen: I had expected to say something on ticks. I do not believe inspectors should confine themselves to any one method. I think a method that would work in one locality might not work in others. In Oklahoma we have the water problem to contend with and to keep cattle in one place for part of the year and in another place for the other part would necessitate a large expense in digging wells and the farmers there can not do it. There were very few herds quarantined last year that are not clean now. There are large pastures where a whole section or school section is leased, if it is found to be infected the Sanitary Board provides a place for the cattle until it is free. That is done late in July or August and that has been effective. As to having supervision over the greasing method and being unable to enforce your orders or suggestions we have a method, in fact territorial inspectors have orders to go on a place and see that it is done. I think the rotation or starvation method is applicable for some locations, but we have pineries and I don't understand how they could apply the rotation method there. In fact the greasing method would be difficult. I have no doubt but we can reach it in some way. I don't believe there is any locality but what can be reached in some way.

Dr. Butler: How many times do you have to grease to get rid of them?

Dr. Allen: Say we locate the infection now—any time this month—we grease immediately, as soon as we can get the inspectors down to supervise and repeat the greasing about every three weeks. If that is continued for three months, say four or five greasings, the ticks are eradicated. I will admit that we are not in a position to make any big talk now but next year if it brings results we hope to be able to.
Dr. Butler: I apologize for taking up so much time but I want to get at one fact. You say you keep that pasture vacated until the first of October?

Dr. Allen: No, sir: the first of August.

Dr. Butler: Do you find it better to leave it open from spring to August? A. No sir.

Dr. Butler: Why not take the other method? A. For the reason that we do not often find it until this time. The infection is heard of usually about this time when some one complains of feeding. You have to provide a place to move them.

Dr. Butler: It is our condition. I wish I had never heard of that.

Dr. Allen: In the Osage district there is shipped in about a hundred and fifty thousand cattle. Heretofore the ticks have run over each other. Now after inspecting all day we will probably find but three or four cattle infected. Usually they get them from the trails, wagon roads, etc. I believe that if we had some help from the government, ticks in the reservation could be cleaned up in one year.

Colonel Dean: It might give you a better idea of the conditions in Oklahoma if we say there has only been tick eradication since the 6th of July. Dr. Allen had been working at this but he was like the fire chief who had his firemen practice two hours before each fire. He had been practicing before he had authority in any way. We can't say what will be the outcome of the form of work and canvass he is on now. We do know about the Osage reservation which is something over a million acres which had been divided into pastures fenced and leased to the highest bidder and it was used by southern men because they could handle bigger herds and the northern men were afraid to go ahead. However, the Osage reservation was attached to Oklahoma and the Animal Industry Bureau were under difficulties with the Interior Department but the Department of Agriculture stood by the people and ordered that no cattle be admitted unless they could be dipped in pure Beuamont oil. That met with considerable opposition for the reason that some had been used for winter pastures and ticky cattle were there but with the object of ultimately opening that land for white settlers which must come sooner or later the department said the cattle must be dipped and 93,000 cattle went through the vats last year. It was our observation where the temperature ranged from 60 to 70 degrees, say in February and continued until the middle of May, the cattle were carrying some old hair and it was not one tick in a thousand that survived that dipping. We could say they were practically clean. Now they dip their cattle. At that time
the 28 hour law did not apply. The old law was one state to another. The cattle were thirsty and when they go through the vat they swallow the dip and get their heads under and we lost some cattle, but we find it is very much better to dip the cattle at their destination than when en route. The results were quite favorable, while not exterminating the ticks I think that there were ninety per cent less ticks when they came to market this year. This year we dipped between 130,000 and 140,000. The cattle in some localities northwest of Austin were drouth-striken this year and the cows were poor and we put them through the dip and our losses were less than one per cent.

Now Dr. Ralph Craig, a bright young man and one in whom I have much confidence, reports that he looked carefully for two hours in a drove of a hundred and fifty cattle and found one animal with ticks. I believe with this method and the starvation method and other methods, that we will exterminate the tick.

Mr. Smith: I am not a tick expert. Therefore I ask for information. I gathered from Dr. Butlter's remarks that his method freed the animal and the land from ticks and from Dr. Allen's remarks that by the oiling and dipping method you eradicate the ticks from the animal and they say the cattle are free. What I want to know is whether the cattle are free or whether when the oil comes off do the cattle get the ticks on from the pasture? It seems that Dr. Butlter's remarks emphasize that they come from the animal.

Dr. Parker: I believe Dr. Butler has the honor of naming that because it is starvation. It is to keep the ticks off of the animal from the time the young ticks are in the grass. The idea is to prevent any more ticks maturing on the animal until all ticks on that pasture have starved.

Mr. Morris: In Oklahoma we do not consider it clear of infection until the animal and the pasture are both clear of ticks.

Colonel Dean: To my certain knowledge Mexico was stocked up with Texas cattle. There is probably some family of the tick that can adopt itself to the dry climate and do without moisture. I have noticed from my experiments with ticks that if they are left exposed to sun and wind they dry out and that is my explanation why they die in a semi-arid country, and parts of Texas.

Mr. Anderson: A short time ago Mr. Goodnight told me that if a well has been sunk and a stream of water flowing, it produces a tick breeding place. Now if such localities as those in semi-arid a country be
fenced up it would facilitate getting rid of ticks as that is the only spot where ticks can succeed in breeding.

Dr. Allen: Regarding the country in Texas, in that chain are several thousand acres of seneca land and water ground.

Col. Dean: The water flows out and the tramping of the cattle caused it to spread out. I have no doubt that ticks do acclimate.

Mr. Anderson: Dr. Butler we have counties in our state where there is no question but what there was a time when the counties were entirely free of ticks. There is no question that men now living north of the river remember when there was a shot gun quarantine maintained north of the river.

On Motion of Dr. Tiffany the meeting adjourned until two p. m.

The meeting was called to order at 2 p. m. by President Hankins.

MR. W. P. SMITH, OF MONTICELLO, ILL., READ A PAPER ON "THE BUSINESS-ENDE OF LIVE STOCK SANITATION," AS FOLLOWS:

When I was requested by our worthy Secretary to contribute my mite to our program, I hesitated quite a while, not because of unwillingness to do my part, but because I realized that it would be presumptuous for me to attempt to discuss Live Stock Sanitation from the scientific or professional standpoint. Finally I decided to confine my remarks to the Business end of Live Stock Sanitation and if what I may say does not instruct the gentlemen present, who like myself, have had practical experience in conducting the business of Live Stock Supervision, it may inform the general public, who as a rule, but little realize the magnitude of the interests involved, or the work necessary to the proper conduct of the business of the Live Stock Boards in the various States.

The Live Stock Industry is one of the most ancient and from a dollar and cents standpoint, the most important in the world. This may be doubted by some, but when we consider the three or fourfold uses to which mankind puts domestic animals, we can easily realize that the above is not an exaggerated statement. Taking them in their order we value them most as a food product, next for clothing, then as servants to mankind, (beasts of burden), etc. and lastly, for their power to supply fertilizer and thus enable our soils to reproduce the grains and grasses which contribute to our supply of food and clothing.

Early history teaches that mankind was a nomadic people, the owners of flocks and herds, and dependent on them for sustenance and as these early people recognized the relative importance of the Live Stock Industry, so in those days as in the present, men were created with
the disposition to become cattle Barons and monopolize the Live Stock business. I remember when a boy reading the story of Jacob and Laban and how by trickery and fraud, Jacob robbed his father-in-law until he well nigh broke the old man. At first, putting the stripped rods before the flocks and herds he had them bearing ring streaked and spotted young, all of which became his by previous contract, then as his wealth grew, he put the rods only before the best and strongest leaving the weak, sick, and crippled on Laban's hands. If Jacob had lived in our day he would either be at the head of the Packers Industry or called by Rockefeller to manage Standard Oil. You ask "why" did Laban submit to be thus imposed upon." I reply because he did not know enough to keep from making a fool contract. While he probably was posted in how best to preserve the health of his animals, he readily fell a prey to this Napoleon of Finance, who, I am persuaded had he been threatened with passage of a new law regulating and restraining his operations, would have made a great outcry that it was in restraint of trade and endangered business, and that the present law should not be interfered with.

This brings me back to my subject. We are confronted today with this condition, the largest commercial industries are corporate ones officered by men whose qualification for the position have been earned by their ability to make the business pay dividends on over capitalization. In order to do this everything is run at high pressure and with but little regard to public health or morals. We come in contact with the "system" (so called) in three ways: first, the transportation companies; second, the public Stock Yards; and third, the packers, not only in dealing with them, but also with the individual owners. It is highly necessary that the Sanitary authorities should be men with good business talent, familiar with what are called business practices, a practical knowledge of the law, the ability to draw and execute a legal contract or short notice, a disposition not only to compel obedience to the law by others, but to refrain from violating the law themselves. They should be diplomats in the highest sense, but not cowards, ready always to use President Roosevelt's motto, "speak softly but carry a big stick." They should, however, not be over ready to shake the big stick, "that is the power of the State," but try first a little judicious flattery. In other words, be good jolliers. This will often accomplish the desired result and leave a better feeling behind it. There is an old and true saying that you can reason with a man through his pocketbook when other means fail. Try this. I have found cases where quarantine regulations were willingly submitted to and obeyed after the possible loss in dollars and cents to not the individual owning the affected and exposed animals, but also to his
neighbors, had been explained. Previously his information had been that his animals were affected with a dangerously contagious or infectious disease, which could be, and likely would be, communicated to other animals by the diffusion or dissemination of germs, or microbes, and that it was a violation of law for him to suffer said animals to come in contact with other animals or leave his possession, and that unless he obeyed an imposed quarantine, he would be punished by the law. This threat had simply made him rebellious. He had, foolishly perhaps, come to the conclusion that his individual rights as well as the rights of his property, were being interfered with and was ready to invoke the old law that every man's house was his castle and that in it he was supreme and justified in defending it against the world.

We should not forget that the common ordinary stock raiser is not a professional man, and but little understands germ theories, and would probably need an introduction to a microbe or bacillus if he met it in the road. He has, however, an intimate speaking acquaintance with the dollar, and responds readily to business reasons when professional ones do not move him.

Do not, however, misunderstand me as intimating that professional men are not the best men out of which to construct sanitary boards. On the contrary, I think they are absolutely essential. The point I have tried to make is that in addition to their professional and scientific knowledge of how best to preserve the health of domestic animals and prevent the spread of contagious and infectious diseases, they should have business qualifications of a high order in order to successfully combat human selfishness and greed, which is the greatest obstacle to the successful carrying out of sanitary regulations. For this reason, the machinery of the state for carrying on live stock sanitation should be professional men with business education or a judicious combination of business and professional men, working together to preserve the health of the living animal and to see that the supply of animal food is healthy and clean. In other words, professional talent to prescribe the remedies, and business talent to enforce their application should, and, in my judgment, will produce if combined, the most successful live stock commission.

In no year of our history has the limelight of publicity been turned on our work like the present. Within the "Jungle of Upton Sinclair," the public was invited to a banquet, sausages a la rodent, lard tinctured with rendered humanity, carcasses of beef with sputum tuberculanum sauce, veal loaf and boneless turkey a la foetus bovis, were set before
the public which had been invited to the feast. Dante's inferno was a paradise compared to it. Investigation followed. The public press fairly reeked with charges of rottenness. We can well pride ourselves that out of it all, we the State Boards and our employees, emerged with our reputations unstained and our efficiency unquestioned.

REMARKS OF MR. SMITH AT THE CLOSE OF HIS PAPER.

I wish to say in connection with what Governor Deneen touched upon; that is, the work of our own board, that we did not take to the cyclone cellar. On the contrary we invited any investigation they cared to make and it was plenty. I know at the slaughter house where we held our investigations we had as high as seven investigating parties in one day. The first trouble we had by the introduction of the meat inspection bill by President Roosevelt was the city government of Chicago. During my connection with the State Board the city had a representative, not a veterinarian, who came in, sat down with his feet on the top of the desk on the day of the inspection and then went off. I don't remember that he ever went and inspected anything. A new inspector was appointed the time of President Roosevelt's recommendation. He sent three or four inspectors, one of whom had been a fish inspector, with instructions to condemn any animal that showed any pus. You know what the result would be. Instead of condemning possibly 20 of the 150 we had to deal with they put the whole lot in the rendering tank, besides those we passed out in the yard. This wholesale condemnation would mean a loss of over a million dollars to the stock raisers of this country. We took all the methods we knew of and after failing to accomplish anything with the inspector and his employees we made an appointment with the Mayor and Dr. Whelan and they got into a discussion whether there was ptomaine in this meat and the mayor got nervous and said he did not know. He asked me what I had to say. I had not expected to say anything and did not know just what to do. I told him that what we wanted was co-operation and not opposition and if he would send a veterinarian down there and go through with us from start to finish I thought that would settle the question. I told him in the matter of dollars and cents the amount of property that was being destroyed by what he was doing and that it would drive quite a good deal of traffic of beef animals away from Chicago and gave him the figures for it, and told him what he wanted. He said now I understand that and he turned around to Dr. Whalen and said that shall be done and he sent a man down and we have since had no trouble with the city of Chicago. And when the other investigators came out we discovered another
fact, that is that we are not meat inspectors. We found out there was no provision in the Illinois law at all that when we have seen the animal our work is finished. So we had to take back seats and not be auspicious and that is one of the things that prevented the criticism, had we not given the information to the general public that we had no responsibility for meat or packing plants. I believe that about covers all I can say that will be of interest to you gentlemen.

Col. Dean: I recently happened to hear a speech before a cattle convention in a neighboring state in which reference was made to the cattle industry which was somewhat in variance with that given by Mr. Smith. I want to tell you what this gentleman said. He said away back in the earliest history of the live stock industry there were two men who were brothers and I think he related that the herdsmen had trouble over the water on the range and instead of quarreling over it they met and agreed one to go one way and the other another way. He said one was Lot and the other Abraham. Abraham went west, consequently that accounted for his prosperity over the other. He said Abraham had a smart boy named Isaac. When he became a grown up boy he went to his uncle and selected a wife. Isaac, this smart boy, made a contract with his father to take care of his herds and manage them on shares and he put up a striped pole in front of the breeding cattle. Now this man said the western pioneer could give Isaac cards and spades because we stripped them with red hot irons.

Dr. Lamb: Along the line of sanitation from a business standpoint my state is interested. My understanding is that the government has nothing to do with cattle killed in the State. Now in the local packing houses it is presumed that cattle that have any chance to be turned down are sold to the local butcher and he sells to the local people. What are other states going to do regarding the local butcher? It seems that the people of our state are very apt to eat the meat that the owner does not dare to ship to a live stock center where inspections are made, but they are killed and eaten at home. Are other states going to pass or enforce laws they may have on their statute books regarding the inspection of butcher shops?

Mr. Smith: My understanding of the law under which live stock boards operate, covers only the prevention and control of the spread of diseases, and I don't believe there is a sanitary board that has authority to inspect food, but it is confined to the animal that carries or may carry disease and it would be up to the county or city health authorities.

Mr. Hankins: We have a law that makes it a penalty for any local
butcher to kill an animal that he knows is diseased and it is not easy for him to attempt to evade the law while the neighbors know of the diseased animal. I know that in my own county which is a country community that two butchers have been arrested and brought into court for that offense. The last one was down ten miles west of me and was arrested for killing a hog whose hind part smelt badly and he threw it away and sold the rest. He is out of business and I don't think he has ever sold enough to get the money to pay his fine yet. The people from the country had been in the habit of shipping this class of animals without inspection and if it was caught it was ordered shot, but if the commission man was anxious to get it away they were carried out by a speculator and if it was shot down he would get what it would bring for soap and those animals were bought for $10 or $15, and if they were not caught they were taken away under the sidewalks or some place and slaughtered.

Suppose you have shipped in a calfy cow, do you condemn her?
A. We do not condemn her. We do not prevent her from being killed. She is not diseased and we do not touch her.

What are you going to do before she is killed and after you pass her?
We do not know any thing. If we see a cow is going to have a calf, let her have the calf or let somebody buy her or let the packers kill her. Now if we had the right to be food inspectors I believe I would tell the boys to catch that cow and take her down to the pound.

Mr. Morris: In Oklahoma we have a law that requires the inspection of all animals for slaughter, the meat of which is to be sold for food. The bill as originally passed required that local inspectors be appointed and animals be inspected before slaughter and if known to be diseased condemned. It says nothing about disposing of the animal except that it shall not be slaughtered. The law was originally passed for the cattle men to prevent thievery and it requires all brands to be kept and they are sent to the secretary of the Sanitary Board. We think it is a pretty good law. I don't say that it is carried out to the letter but it is in all large towns and we get returns from those local inspectors every week or every month and I notice it has resulted in the condemnation of a good many animals every year which of course otherwise would have been slaughtered and put on the market. So we think it is a pretty good law. We would like to have it amended so as to enforce it.

Dr. Lamb: What provision do you have for the inspectors? A. They are allowed a fee.
Dr. Lamb: I am interested in that because I understand there will be an effort in the next legislature to have a law of that kind as to marks and brands.

A. There are a number of men in the penitentiary now that the theft has been traced to by that law.

Dr. Lamb: If we can make a law that will collect the marks and brands as well as health inspectors and provide a fee for inspectors. Does your law provide a fee?

Mr. Morris: Yes sir: 25 cents. That is his compensation. That is all the authority we have to inspect the animal alive.

President Hankins: Suppose a man kills an animal and brings it in a wagon to sell it?

Mr. Morris: He is not allowed to sell it without a certificate of inspection. We flatter ourselves that it is a good law. It not only prevents theft, which was the original idea, but from the number of hogs and cattle condemned it shows to be a good law. If they were not restricted they would have been put on the market.

Mr. Smith: I apologize to Dr. Steddom about asking the question as I understand the Bureau of Animal Industry knocks out the calfy cow.

Dr. Steddom: Under the new meat inspection law it has to be made in the pens and not stock yards. If the animal is far advanced she may be moved for feeding and not slaughtered provided there is no infectious or contagious disease. That was the policy followed under the old law.

Mr. Smith: Suppose that during the present season of the year when range cattle are coming into the market from the west, a cow happened to be with a calf, and the cow was covered with ticks what would be done with her?

Dr. Steddom: She would be killed. She would be exposed to contagion.

Dr. Butler: You say she would be slaughtered however near parturition?

Dr. Steddom: There would be no provision for removing her, being a southern cow, because she had been exposed to Texas fever. Formerly they were not allowed to go to slaughter If they were slaughtered they were condemned. We never prohibit their slaughter. There have been instances where these southern cattle have been shipped to the dairies as pregnant cows.
SOME UNUSUAL RESULTS FROM MALLEIN TESTS BY DR. C. G. LAMB, STATE VETERINARIAN OF COLORADO.

"When I was asked to contribute something to this meeting I hesitated as Mr. Smith did, but I realized full well that my experience with mallein had been very limited compared to other men and I had two results that were different from what had been previously reported, and consequently to right myself and to call attention to them, I presume to call them "Unusual results."

"One of the cases occurred in New Mexico. The New Mexico authorities discovered a case of glanders. The affected animals were killed and the others quarantined, and about the first of January last they were inspected by Dr. Blanch, of the B. A. I. Six of the animals reacted but the owner objected to killing them and a guard was placed over them. About six months after that the owner asked me to go down and re-test them. It was about four months after the first test and the entire six reacted from three to four and one half degrees. The reason I call it an unusual result was the fact that the entire six reacted nearly four months after the first test, not a single one showing glanders. Dr. Blanch and Dr. Foreman were there, and the three of us gave the animals a careful examination and none of them gave any symptoms that they ever had glanders and as I had never seen a case like that I thought it was unusual, and I ask you gentlemen if the six others reacting three months afterward and no discharge of the nostrils or discolored mucous is not unusual.

"The second case I had occurred after the Guthrie meeting, where Dr. Luckey's paper on low temperature was read. A few days after the Guthrie meeting I had occasion to test twenty-four head. It was the 26th and 27th of September and I took the temperature three times previous to the injection. The weather was beautiful, the horses were out at night after their injection and their temperature was taken about 7:30 the next morning. I was very much surprised indeed that about the first animal I injected the thermometer registered 95%. I could not believe it and I took every means I could to verify it. I introduced three thermometers and they read alike 95%. I introduced the three in another animal and found them correct. Taking it three hours later I found it 96 ½ and in four others 97%, 97, 97%, 97. The question arising to me was it due to the injection of mallein for I feel sure that the temperature was properly taken, and I am satisfied the thermometers from their introduction into other animals were correct. Thus another of 95% and four others of 97%, 97, 97% and 97."
Dr. Tiffany: What was the temperature the previous day?

Dr. Lamb: Number 3 showed at 10 A. M. 98%; at 2 P. M. 100; 4 P. M. 100% and the temperature of the other four, the lowest temperature was 99% and ranged from that to 100%.

Dr. Tiffany: As to the first case he cites it is not an unusual occurrence for a horse to react many times sixty days apart. I remember one farm in particular where nine out of ten which had been exposed to the disease reacted and were slaughtered after the first test. The test began on these horses in January. They were tested every sixty days until July. Three of those horses were released from quarantine in October and the other three in November. Every horse reacted every time and the first two or three times the horses were very much dejected, so much so that the man who fed them said they all reacted. I said how do you know. He said not a horse nickered for his feed and their heads were down. I know of one case of a horse and five mules, and all reacted and two of these were slaughtered within ninety days and they were tested four or five times sixty days apart and the last time when I injected these horses all gave higher temperatures than at any previous time, but at the next test sixty days there was not any reaction at all. It is not unusual at all. I believe there are thousands of horses that would react six months longer without showing clinical symptoms. That temperature was taken prior to giving the mallein. I had never seen such a low temperature. I can not see how mallein would lower the temperature. I can not understand a temperature below 96 in an animal of apparent health.

Dr. Lamb: In your experience in mallein test when an animal reacts you suspect these animals?

Dr. Tiffany: I believe that no horse will react that does not have glanders. I believe that when they fail to react that you can conclude that they are well. I know that horses are cured. I believe that many horses recover without showing clinical symptoms. Probably there are many persons here who have tuberculosis that will never develop and they will live many years.

Dr. Lamb: You would not advise destruction without showing clinical symptoms? A. No sir: I never would.

The Secretary read a telegram from Dr. Lovejoy announcing that he could not attend the meeting.

Dr. Tiffany: I used to have a little more faith in the action of mallein as diagnostic in mules than I do now. Last fall I was called to a
stable owned by an Ice and Coal Company. They had ten horses and four mules. Nine horses reacted and none of the mules. One, a four year old mule, in the evening had a temperature of 100 and the next morning it was up to 104. No dejection but still the temperature was high. The other mules were normal both in the evening and the next day. I supposed the elevation in the mule might be caused by influenza. The mule was held in quarantine because it was kept in the stable with the nine reactors. Within ten days this mule broke out with as complete a case of acute glanders as I ever saw. Within ten days another mule, and another mule was found dead in its stall, but I don't think that can be charged to glanders, and all the mules were dead within sixty days. Out of the nine horses five gave reaction and were destroyed and the others are being watched every day. They are being worked every day but they do not water or tie anywhere. Its use in the mule is uncertain. I have had the same results before but not as plain as in this case, but with horses I have the greatest faith in mallein.

Have you any reason for the reaction?

A. No sir: I have not, only possibly the ass has not the resistance to glanders that the horse has, but that would not account for the reaction of mallein if made by the same test. I am satisfied that glanders existed some time prior to the time I made this test. Perhaps these mules were so near becoming clinical cases that they would not react that they already contained mallein. Perhaps they would have reacted if they had been tested two or three months before. However it is unsafe to rely on them. I will not do it again. About the only advantage I can see in work like ours is that we can watch the reacting animal. Suppose a man has twenty-five horses and he has nine that react. He can watch those that react and the balance can be sold. It is used as a diagnostic or to detect glanders. I think it is very useful to show that horses have not contracted disease.

ADDRESS BY W. P. ANDERSON, LIVE STOCK AGENT "SANTE FE," AMARILLO, TEXAS.

"I don't suppose I can give these gentlemen information along the lines they are much interested in, and I did not expect to be put on the programme, but I come in contact continually with men more interested in the work than anybody else connected with the railroads, and they are along the same lines as discussed by your president and others and may not be new, but I give you my ideas of what the work of your association should be and get suggestions from you that might help my work along."
The Inter State Association of Live Stock Sanitary Boards although yet in its infancy has already done a world of practical good in the moral support and material aid it has rendered the B. A. I. This is the sense of the expression made to me by one whom I deem the most successful of all field agents of the Bureau of Animal Industry. Says that gentleman, "These sanitary boards have never failed to make recommendations furthering the practical work of the department" and such also has been my observation. At the time of the organization of this association and the first few years of its existence I had opportunity for observation which was much better than ordinary on account of my connection with the great Live Stock Market Centers as the traveling agent of the Union Stock Yards and Transit Company of Chicago. But I come not here to indulge in fulsome adulation of the personal work accomplished by Mr. Smith or Mr. Hankins and many other gentlemen of this association who without reward have devoted their time and energies for the good of civilization that they have encountered in a new and most voluminous form the new system for the meat food supply of the country largely through the agency of the Railway Cattle of Commerce, creating necessities through almost evolutionary development never anticipated by the earlier statutory legislation and so little understood by the general public and so far away from their every day life that when they do awaken to this new existence it is with the shock of sensational exaggeration which carries their apathy to such an extreme the other way as to render your task of patient endeavor an almost endless one. Yet of the two conditions sensational and untruthful exaggeration is at all times to be deprecated. As an aftermath of the malestrom of "muck" scattered throughout the country the fact remains that the principal thing done was an increase in the appropriation of the B. A. I. which will no doubt be a great assistance to them to carry on work along lines to which they are restricted because of the Inter State Commerce character of the business over which only they have legal surveillance. This condition to which the general public has had such a rude awakening by reform agitators is not a new proposition to the Live Stock Sanitary Boards which has thus far been the only agency to my knowledge which has been able to remove the operating disabilities under which the Animal Industry Bureau labors, by seeking as far as possible to conform to their work and striving for legislation to enable the states to conform so that these new conditions which within four decades have become a chief factor of the country's commerce may be satisfactorily handled as to insure the confidence and absolutely protect the aestheticism of the American public. I firmly believe that the re-
cent alleged exposures of bad sanitary conditions was based on a few facts which were isolated exceptions to the general rule of cleanliness which to my personal knowledge has almost universally obtained in the majority of the Packing House plants. However remarks on this subject are needless and upon you gentlemen has devolved the task of removing even the suspicion of any diseased condition of domestic animals on American farms whether designed for the meat consumption or not. This work in the states provided with Live Stock Sanitary Boards has been quite satisfactory but not sufficiently appreciated by the stock growers themselves who have been most benefited by this work. But now the retroactive has set in and through the demand from this class will come the legislation for the enactment of enabling statutes which will bring about the perfect co-operation of the state authorities and the Federal government which will cause a uniform perfect and universal espionage by observation and expert inspection which will preclude the possibility of another such disastrous experience as that suffered by the Live Stock interests during the past three months which was made possible only by the lack of well outlined legal statutes concerning Live Stock Sanitary matters.

In the southwest especially in Texas our entire community is aware of the value of Sanitary regulations. They know that there is a fatality caused by contact with ticks; they also know that eronia or scabies is in evidence and as a consequence, that they as the owners are most interested in not only removing the disease, but even the suspicion of the disease. With such a constituency as this, it was easy for the Live Stock Sanitary Boards of Texas to have an enabling statute passed which led to the Secretary of Agriculture proclaiming a diagonal line across Texas to which the Sanitary Board was empowered to establish rules and regulations to conform with such line. In the successful conformation law of Texas I think I see precedent for an enabling statute which will cause the state boards of other states where the necessity is apparent, and I think that it is apparent in every state in the Union and outside border states, to have a Live Stock Sanitary Board which can act judiciously with the general governments.

Of course it is a good policy as a rule to avoid the sinuosities of complicated politics but every idea has got to have a Moses and nearly every Moses has let his light go out just before he had gotten into the clear and I do not expect to be the shining exception. But I do know that the Inter State Association of Live Stock Sanitary Boards have a mission and that it is more closely allied with the present and future of our American civilization than any other domestic board, for in the very
nature of its work it is more closely allied than any other organization with the state boards for the protection of human health and as time advances it is obvious that its efforts will become more closely inter-woven with such work.

Professional pride on part of the medical doctors which has largely prevented this in times passed is rapidly disappearing and the discoveries made in the veterinary science which has so greatly contributed to human knowledge has been adopted.

The precedent of the Federal and Texas State Live Stock quarantine regulations were recently followed in principle by the joint authorities during the Yellow fever epidemic at New Orleans which will probably evolve in the various states passing enabling laws co-operating state and Federal Boards of health.

Remarks of Mr. Anderson, following the reading of his address.

There is a greater necessity for the States in the East in caring for its local food supply than there is in the West. If there is any reliance in statistics, there are 39,000,000 milk cows in all the States east. In our own country we have a calf crop all the way from sixty to seventy per cent. This year it is probably seventy five per cent. We have the greatest calf crop in ten years. If you take up the census reports you will realize that at least twenty per cent of the creamery cows come without calves, more cattle than enters into the cattle commerce. A great many people deprecated Mr. Garfield's figures when he said that the packing houses only put up forty-three per cent of the beef consumed. I believe it is not more than thirty-three per cent. If it was a greater per cent, it would give you about eighty millions of cattle. But it runs into the thirties, I do not care to indulge in those figures for the benefit of the stenographer. It may not be more than twenty-five million but the local supply is much more. This would be three times more than used in England and England gets her supply from several sources so we have nothing that gives us any idea what the real food supply of the country is and those conditions make it necessary that the local state boards give their attention to local affairs. I did not expect to indulge in anything of this kind. I some times do when I have nothing else to do. I used to be a crank on this subject, and I expect to give some attention to it this fall. In 1902 and 1903 I gave personal attention to it. I found that fifty per cent of the cattle marketed were she cattle from the west run in from the drouth. And the next was fifty and the next fifty-five, and that enabled us to tell the number of steer cattle of three and fours that would appear on the market last year, and this year we predict a shortage
of fifty per cent in the Pan Handle, and we know there is a present steer shortage, and we also know that five cent mutton on the public domain with fifteen cent wool has given the sheep man the advantage of the cattle man and hence the exodus of the cow. We are in a plains country. We own our own land in Texas and have good bulls. We have forty-five counties above the quarantine line and some below. We have been indulging in beef breeding until now I guess that country has the largest number of the best bred beef cattle, and we supply a large number of those to Illinois and the States east of Illinois that go to make up export cattle. We probably send thirty-five thousand that never see a market but are exported. People on the plains a few years ago only used the pastures for summer grazing. The stock farmer now makes one acre of grass do what twenty did before. We have got in the Pan Handle of Texas more breeding cattle than we had five or six years ago, but it can be accounted for because the small stock farmer is doing it. The small stock farmer used to own forty per cent. Now they own eighty per cent and the big fellows own twenty per cent. We have an association of 3,500. Everybody else is going out of the business and going to the cities unless they take the tariff off wool.

OBSTACLES IN THE WAY OF CONTROLLING TUBERCULOSIS OF CATTLE; BY DR. D. F. LUCKEY, STATE VETERINARIAN OF MISSOURI.

Before we can consider in the best light the obstacles in the way of the control of Tuberculosis of Cattle, it is necessary to take a glance at the conditions that actually exist. We find at present far too much tuberculosis among the cattle of all the states. The worst feature is that animals from badly infected registered herds are being sold and scattered everywhere. Tuberculous animals are being bought blindly by the breeders of permanent herds. Some of the infected individuals go to grade herds where they will probably do the least amount of harm. Others go to other registered herds to infect animals which, in their turn, will carry the infection wherever they happen to go. The registered herd has the best opportunity to become affected with tuberculosis by reason of the promiscuous addition of breeding animals to it and the best opportunity to spread tuberculosis for the reason that individuals from it are sold to go to many different herds. The cattle from grade herds, except in case of dairy cattle, usually go to the market for slaughter and are thus far comparatively harmless as far as their spreading tuberculosis is concerned. The examination of the cattle in any state in this Union will reveal the presence of considerable tuberculosis. It is
more prevalent in some states than others. Its presence can be counted upon to the greatest extent among herds to which breeding animals from different sections of the country have been promiscuously added. It is in the improved dairy and registered beef herds that tuberculosis is today most common. The most discouraging feature to the sanitarian is not that tuberculosis now affects from two to ten per cent of the cattle in the permanent herds of the different states but that it is so distributed over the country as to make its rapid spread in the future almost inevitable. A close study of the situation in my own state leaves no room for doubt that tuberculosis among cattle will double up rapidly in the near future. My tests included animals recently brought from the states of Kansas, Nebraska, Iowa, Illinois, Ohio, and Indiana, and the indications are that conditions are as bad if not worse among the cattle in these states. It is only fair to conclude that conditions are the same in all other states.

The statistics of the Bureau of Animal Industry show that the number of cattle found on postmortem inspection to have been diseased with tuberculosis has doubled in the past five years and the number of hogs has doubled every year for the past four years. This increase cannot be credited entirely to closer inspection. Altogether we now have a condition bad enough to contend with and plenty of assurance that the task of controlling and stamping out tuberculosis will rapidly grow greater as time passes.

From the present unsatisfactory conditions to the ideal, or those under which we find no tuberculosis among cattle, livestock sanitarians must travel a long road. The way is greatly impeded by any number of obstacles, some quite grave but none entirely insurmountable. In order to travel the road with the greatest expedition and safety it is necessary for us to take up the consideration of these obstacles and find a way around them. An impartial reckoning may not leave the official veterinarian altogether in the clear. It matters not about that. If we are ever to make a success of stamping out tuberculosis we will have to candidly consider the facts as they are even if some of the highest bars across the road to success prove to be our own blunders.

The first great obstacle to the control of tuberculosis is a lack of a proper understanding of the disease by official veterinarians, and especially by the laymen on livestock sanitary boards. Even though we are in possession of a fair knowledge of it from a theoretical standpoint, we are sadly lacking in a knowledge of how to put our information to practical use. The mistakes that have been made in the past and those that
are being made now by official veterinarians and sanitary boards are sufficient evidence of this. The breeders who are opposed to the use of the tuberculin test have not had to go far to find mistakes enough to convince the ordinary legislature that the whole thing is a useless farce. As a result the efforts in a number of states to deal with tuberculosis have fallen flat and the legislatures have either abolished the livestock boards outright or withheld their appropriations. Numerous states, in recent years, have promulgated quarantine regulation for the control of tuberculosis of cattle and have had to back down from them. It is not charged that all of the reverses of the past are due to the short-sightedness of officials but on the theory that anything which is done right must succeed we must confess that our plans have at least not been well laid nor our fortifications skillfully erected. We must admit that there are a lot of things about tuberculosis that we do not know. We must also admit that a glaring lack of knowledge on one essential point might convey the impression to the public that we are short of information on many others. It must seem almost ludicrous to the shrewd breeder when he reads the sage discourse on tuberculosis of the scientist who does not give the slightest information that there are a few things in connection with the subject that he does not understand. Taking a cocksure stand on doubtful points and being detected in our error has weakened our case materially with the breeders and placed a grave obstacle in our own way. A candid admission at the beginning of the possibility of error, especially in the diagnosis of tuberculosis, would doubtless have left a better effect.

Many of the breeders of this country travel about over the United States and come in contact with different state and competent private veterinarians. It is doubtful if one of them would get anything like the same idea from any two veterinarians of the symptoms of tuberculosis or anything else pertaining to the disease. In explaining the tuberculin test to a breeder, seldom will two veterinarians give the same explanation of so simple a matter as the normal temperature of cattle, and the variations of temperatures as affected by the weather, exertion, disease, or those that happen without apparent cause. In a recent lawsuit over some tuberculous cattle, two state veterinarians and two private veterinarians with far more than the average skill, testified on these points. A third state veterinarian made a statement in a letter on the same point. The evidence in this case on so simple a matter as the normal temperature of a cow, in part, was so conflicting as to be far from convincing.

In giving directions for the tuberculin test, we vary so much as to give laymen the impression that we are somewhat at sea on the sub-
ject—which indeed we are. Instructions on the essential points of the tuberculin test vary greatly. The normal temperature, the number of times of taking the preliminary temperatures and how to judge them, the time of the injection of tuberculin, the amount to inject and where to inject, the time to expect the maximum rise in reacting animals, the amount of rise necessary to condemn or mark as suspicious, the length of time the elevation of temperature will continue and the length of time to relapse before the test is repeated in reacting animals, are all matters which are not clearly and uniformly explained in the various instructions for administering the tuberculin test. There is so much variation in the instructions of the different states and of pharmaceutical houses as to cause laymen and even inexperienced veterinarians great confusion. The average young graduate cannot follow the instructions of any state or the B. A. I. for making the test without danger of making many errors. The fault seems to be that all the instructions are too positive and specific rather than too general.

We have made a mistake in holding the tuberculin test as infallible or anything like it. Postmortems on reacting cattle, which showed no lesions of disease have done a great deal to prejudice the public against the test. The novice who, in using the tuberculin test, undertakes to show the owner of reacting cows by postmortem that they are diseased, is destined to disappointment. The test errs occasionally and this fact should be plainly admitted in advance.

The errors above pointed out are some of the obstacles in our way.

The entire lack of any definite understanding of the subject of tuberculosis of cattle on the part of laymen is probably the greatest obstacle in the way of its control. It was not intended in this paper to try to point out the way around the obstacles, but it might be pertinent to remark here that nothing less than an eternal and everlasting campaign of education intelligently carried on will prepare the public for our progress in this work. If such a thing is possible a popular bulletin on the subject of tuberculosis and the tuberculin test should be prepared, so as to give the non-professional man a comprehensive and accurate idea of these subjects, and used by the authorities of all the different states. The information sent out should be uniform. This, likely, would leave a better impression on the public and command for the official veterinarians much greater respect.

A great number of quarantine regulations has a tendency to disgust intelligent breeders, and for this reason it seems that the control of tuberculosis among cattle in interstate shipments should be exercised by
the Bureau of Animal Industry. One set of regulations by the federal
department, requiring the tuberculin test of all breeding animals shipped
from one state to another, would serve as well as forty-five different sets
of regulations from the forty-five states of the Union.

Mr. Smith: As one of the Illinois State Board I consider you gen-
tlemen here our guests, and as we have some items of interest in the
city that some of you have expressed a desire to see, if it is agreeable I
would move that you defer the discussion of Dr. Luckey’s paper and go
and see whatever you may choose; the monument, the camp or the parks.
We have the carriages ready. I now invite you all to go with us. The
meeting adjourned until 9 A. M. Thursday, August 16, 1906.

The convention convened at 9 A. M.

President Hankins: The first thing in order is the discussion of Dr.
Luckey’s paper on Tuberculosis.

Dr. Lamb: I was very much interested in Dr. Luckey’s paper be-
cause I come from a state where there is absolutely nothing done with
the tuberculin test and it is only a question of time until something will
have to be done; as you know a large majority of the people coming into
our State either come there for tuberculosis or are born of tuberculous
parents and it is a matter of considerable importance whether their chil-
dren are fed on pure milk and they are beginning to see it in that light
and will look to the Legislature to pass a law testing the dairy cattle. We
believe our range cattle are free but we have reason to believe that cer-
tain portions of our diary cattle are tuberculous and means have to be
taken to see.

Dr. Luckey does not mention one of the chief obstacles of the pas-
sage and enforcement of the law and that is that tuberculosis of an ani-
mal is not communicable to man. Many people would believe in it if
their herds would not be inspected and be subject to loss thereby. I
trust that the gentlemen who have had experience in the tuberculin test
will discuss it for my benefit. There is much in this test and the law un-
der which it is done and the enforcement of the law and disposition of
the carcasses that I am interested in.

Dr. Parker: I want to relate my experience, which Dr. Steddom can
vouch for, in testing cattle for shipment. It was along about 1899 when
Kansas, Texas and Missouri had regulations that no breeding cattle
should be brought into the State without the tuberculin test. Consequent-
ly a lot of cattle were arriving at Kansas City without the test and as a
matter of accommodation we gave the test and let them go on. We com-
pelled them to be held two or three days until they were accustomed to
their surroundings, if we found their temperature disturbed we post-
poned it. Nevertheless out of 600 cattle tested by Dr. Steddom, Dr. Mc-
Farland and myself, all of which I kept a record of, there were probably
fifteen cattle reacted, and most of them were returned to their points of
origin. Some five or six head were slaughtered at Kansas City and of
course we made as close an inspection as could be made on the meat in-
spection floor. There was not one of these animals slaughtered that showed
any lesions of tuberculosis. We made what you might call a regular
meat inspection. We did not go through all the glands of the nervous
system, but it would seem in that number of animals that gave a de-
cided reaction that we ought to have found some that were tubercular.
Now if conditions are such that the animal is disturbed it demonstrated
that the test as applied under those conditions is not reliable, and it is
not safe to say that any that show a reaction are tubercular but merely
suspicious was the conclusion we came to. It seems that in this study of
the tuberculin and mallein tests we should study the causes that influence
the rise of temperature in bovines and horses, something more thorough
than I have ever seen, the record of the temperature of animals. Cattle
vary greatly. The veterinarian does not stand over them twenty-four
hours a day and consequently something happens to cause their tempera-
ture to rise. We found the temperature rising above normal without any-
thing to account for it.

We are in the habit of considering a high temperature as fever or the
evidence of disease. Cattle having a temperature of 102 we know
sometimes go to 104 and one case is cited of an animal, with no clin-
ical symptoms showing a temperature of 106 and 107. I believe in mal-
lein and tuberculin, but I believe we need a more thorough study of
the influence of temperature in bovines and horses."

Q. What was the average temperature of the animals that were con-
demned? A. I can only say as to the average rise. I did not keep all
the temperatures. Some of the temperatures were kept by a private vet-
ernarian. As near as I remember it we considered two degrees.

Q. Doctor, in that case if the normal temperature was 100 and the
temperature 102, you would consider it?

A. No sir. We took four to six temperatures at certain hours and corre-
sponding hours. Tuberculin was usually administered between eight
and ten p. m. and we usually began taking temperatures at six o'clock in
the morning. We took into consideration the time of day. If at ten o'clock
we had the temperature of a given animal at 100 and at the next reading
it was 102 at the same hour with characteristic risings it would be taken.
We also took into consideration the known conditions. For instance if an animal got loose from its fastenings and had to be chased around we would take that into consideration.

Dr. Ward: We have had an experience in Minnesota with what Mr. Anderson calls "pilgrim cattle" and we frequently find that the temperature on the second day is two degrees higher than on the previous day, but we take no notice of it. We conclude it is due to the different environments.

Dr. Parker: I will say that nearly all regard that the average temperature runs from three to three and a half rise.

Dr. Ward: That is one thing we have to be very careful of in those cattle arriving in the State. I don't think we are justified in condemning any animal unless the temperature shows a rise to 103 or over.

In regard to Dr. Luckey's question as to the normal temperature of cattle, in Minnesota during the last year we have tested over fourteen thousand cattle and we found the average running about 102. You will find some 101%, 102% and some will run higher. We use the Bureau tuberculin exclusively and in looking over the charts of all tests in the office we usually find the maximum rise of temperature occurring at the fourteenth hour. There are exceptions, but they usually occur at the fourteenth hour.

As to the condemnation, Dr. Luckey thought we should have some hard and fast lines to go by relative to condemning cattle. For instance we go in and test thirty head and find only one animal with a temperature of 104, normal temperature 102. This particular animal has been raised by the owner. We are not justified in condemning that animal or even considering it suspicious for this reason, if it was tubercular you would have other reactions. There is no question but that in testing a herd of cattle where you find a large per centage of reactors, it occurs that some of the non-reactors will react at a subsequent test, and it is very necessary when we test a herd and find reactors that we should retest the non-reactors three months later because the chances are that some of them will be caught on the next test. It is true that in the beginning of the disease we do find some cattle where it is impossible to find lesions. Of course a majority of the veterinarians that have had no experience expect to find lesions in the lungs. During the past year I have collected data from postmortems on 1200 cattle. We find in 53 per cent of these cases that the disease was located in some glands of the body either the pharyngeal or bronchial mediastinal or mesentric glands.

I thought by comparing the postmortem lesions with the tempera-
ture chart we might be able to say from the rise of temperature in the animal that this one was a generalized case and this one was in the incipient stage so that it would not be necessary for us to kill a lot of cattle that were not dangerous, because one gland was slightly affected and it would be a long time before it would be dangerous. But in comparing those records it is impossible to say in what stage or location the disease is.

Another matter that Dr. Luckey touched upon, is educating the people. We have received a number of requests to deliver addresses on Tuberculosis to different dairymen's associations. Of course we can gather plenty of specimens to take down with us, lungs, etc., but lately we have been taking our microscope along and showing some slides of tubercule bacilli and allow the farmers to see them for themselves. It is impossible to show these people or make them understand what germs are unless they see them through the microscope. Of course they do not believe everything we tell them especially on tuberculosis, and it is not natural that they should because they have read a good deal of Koch's theory about the communicatibility of the disease to man. But we have found it interested them a great deal more by showing them the bacilli than we could by showing them the specimens. They of course ask innumerable questions. I will suggest to Dr. Luckey that if it is not too exhausting that he carry his microscope with him.

Dr. Luckey says that ten per cent of the cattle tested are tuberculous and he seems to think that ten per cent of all the dairy cattle are tuberculous. Our records show that of the 14,000 head tested 1400 were killed, but those represented herds where the disease was known to exist and the owner had asked for the test, and also the herds of the state institutions. We had one herd of which sixty-four out of seventy-two reacted and other herds with practically the same proportion. I am satisfied if we made a test of all the cattle of Minnesota our per centage would not exceed three per cent. I do not believe it is possible for any state to eradicate the disease in its own borders unless they go to a large expense. In states like Iowa and Illinois it would take a large army to apply the tests and it would cost millions of dollars.

Dr. Parker: I would ask if it is impossible to eradicate the disease from cattle until the infection in man is eradicated?

Dr. Ward: It does not seem that the owners of these herds are tubercular or the disease transmitted from the owner to the cattle. We have never come across anything of this kind in our experience. We have tested animals where the disease was thought to have been taken by a mem-
ber of the family from one cow, but we have never run across a case where the animal contracted it from the owner.

Dr. Parker: I have knowledge of one case of a cow with the strong presumption that she acquired the disease from slops from a hotel where a number of tubercular patients were staying.

Dr. Ward: Of course there is that probability that the disease is communicated to cattle, and from the post-mortem reports I have held I have thought that too much attention was given to respiratory and not enough to the intestinal track; that the infection has been taken by way of the intestines, simply passing through the mesenteric glands, poured into the venous system and into the lungs and where bacilli escapes again to the lymphatic system into the bronchial or mediastinal glands where they are found. The disease may be taken up by soiled food or by the breath and carried back to the nasal chamber, and taken care of by the pharyngeal gland. If the animal breathes in the germ it seems to me that it would in many cases be held by the moist nares or pharynx and be taken up by the pharyngeal glands. We often find a tubercular lesion at the apex or border of the lung. It does not seem possible that the infection could have been taken in by the breath, but it could have been acquired by the venous system. I am simply advancing this as my own theory. I don't want to force it on any of you.

The city of Duluth has an ordinance that requires the tuberculin test of all dairy cattle. Duluth is a city that has no adjacent farming community, so it is necessary for the Duluth dairymen to import all their cattle. Now the city authorities of Duluth have quarantined the stock yards and will not admit any dairy cattle unless the animals have been tested, and they have within the past year tested 1,200 and had only 15 reactors. Their death rate in infants from tuberculosis has dropped to practically nothing. Of course they credit their city ordinance with that, but whether that has anything to do with it I am not here to say, but the death rate of children from tuberculosis has dropped from quite a large per cent to nothing.

Dr. Butler: First before I take up the regular subject may I be permitted to say a word on Dr. Ward's mode? It seems that Dr. Ward has stated points more clearly than ever to the effect that the infection is taken into the respiratory organs. We are told that this infection is taken through the digestive organs up through the lymphatic system. Now then I believe that long before it gets to the lungs, long before it goes into the circulation that those germs will follow the usual course and be stopped by the mesenteric lymphatic glands. It has been proven that passing through the lungs there will be no lesions and yet it is infected.
That is the reason we find the lymphatic glands so largely infected. I do not say anything of these germs getting to any part of the lungs. There is an open channel there and certainly it is much easier to get there than through the mesenteric gland and get there by the circulation. We also have to reason that it is more likely to pass through that small amount of lung tissue than it is to pass through the mesenteric glands.

Dr. Ward: They had the portal glands.

Dr. Butler: Yes, but you did not mention finding the portal glands infected and I have found both infected when the lungs were not infected at all. Now as to the infection of infants by the consumption of milk I do not think we ought to take that in determining the effect on the human race, as a whole. I believe it is considered today that an adult may take the germs into his stomach in large quantities without much danger but I think children are different as their chief food is milk and we ought not to relax on that account.

Now then in regard to Dr. Luckey's paper. In the first place I think those questions he asked, in the manner they were, were probably the most improbable thing that could be asked. I don't think a man ought to ask such a question and then say that makes a difference. I say that does not prove anything. You gentlemen might as well ask me the size of an ear of corn. You can not get a definite temperature because there is none. If he would ask me that question as to the temperature in North Carolina I would say in winter about 101½ and in summer 101 to 102, average. When he asked me that question I qualified it by saying if one figure is given I will give it at 101.

Now question 2. What temperature is considered necessary to condemn? It is impossible to give a definite figure as the normal temperature. There is no such figure known to exist. Now then I answered that question like this. I wrote a rise of two and one half degrees. I don't want that above the average either. I want it above the highest of the so-called normal temperatures. Then I said I would not condemn a cow short of 104. Now Dr. Ward went better than that and said 105, and I think Dr. Ward is nearer correct.

Q. Do you mean 105 above the highest temperature?

A. I mean the maximum temperature, some at least reach 104 degrees. Now then I tell you the maximum temperature because there are other factors involved and in this question there are so many factors, that mistakes are bound to occur and we must use all known factors. Now then it was cited again that we differed as to the time when the rise occurred. Of course we do but the actual facts differ. The cows differ.
Now then as to question three. What makes an animal suspicious? The same facts, the same line of reasoning I made to the other question will apply to this one.

I will give just one instance of the variation of temperature of animals before the injection is made. I have found by putting cattle in stables and taking their temperatures that in eight head I would not get a single temperature the first day below 103. Now then if I go on and make a test of those animals and take any sort of rise of two and two and a half degrees I am going to make a mistake. That is why we have to have that control.

Dr. Ward: When you go into a herd where the disease is known to exist and find the temperature 103 degrees, do you inject or wait? A. I make this practice that where I get 103 I wait until the next day. I take two days temperature and then if I find it the same I give a large injection of tuberculin.

Dr. Ward: In a herd of cattle known to be tuberculous you have one cow with a preliminary temperature of 105, you don't inject her but inject others and have reactions, what do you do? A. I had a case. I kept her under supervision and I made a careful physical examination and I could not see enough evidence that she was tubercular so I injected her with six c. c. of tuberculin. Q. With what result? A. Got an elevation of two and two-fifths degrees and she was slaughtered.

Dr. Ward: I wanted to bring out that fact, because it is a fact that when you go into a large herd that is diseased you may get one animal whose temperature runs up to 105 and if you get a large percentage of reactors I believe a man is justified in taking that cow because it is an acute case.

Dr. Butler: Provided you get any other indications of the disease. I don't believe it is best unless she has large pharyngeal glands and is a clinical case.

Dr. Ward: We have a compulsory test in Minnesota of the large diary herds and we take as a rule the very best cattle in the dairy. We take a fat cow from one stall and one from another and the owner says why don't you take this cow we know is diseased because she is emaciated and has not done well. We tell him we will take the cow and kill her and if she proves to be tuberculous we will reimburse him, if she is not tuberculous it is his loss. The chances are that the emaciated cow is suffering from chronic peritonitis or some other trouble.

Dr. Butler: I remember some fifteen years ago of putting some cows in a stable and starting to take temperatures and the result was a revela-
tion to me. These cows were used to being put in the stable to be milked and were then let out. One night after putting them in the stable I took their temperature and found one 102 and she had eaten her feed and given a good quantity of milk. The next day her temperature was 102 in the afternoon and at night it ran up to 106 again, and in the twenty-four hours that cow gave a pound and a half of butter fat. She was a Jersey and one of the best in the herd. There was not much wrong with her apparently, she was eating her feed with a temperature of 106. Are we expected to name any temperature that is the normal temperature? It is an absurdity.

Now gentlemen I want to say if this discussion had occurred ten years ago it would have been worth much to the reputation of veterinarians. This is the opposite swing of the pendulum. Now the correct method is as usual about half way between the two extremes. The tuberculin test is a human affair and where the mind is depended on there is going to be a variation, and there is going to be mistakes. But we can sum up all the ignorance of the veterinarians, all the infallibility, and put them on one side and all tests on the other and what would be the result. I know of nothing in the whole field of biology that gives less variation than does the tuberculin test. We have to be careful. We have to use judgment, and we have to obtain all the facts possible and even then there will be mistakes, but those mistakes will not be known as good effects from the proper tuberculin test. I look at this from the point of a veterinarian and live stock sanitarian and that is where the tuberculin test is going to be valuable in the future in getting herds free from the disease even if there is nothing in that, that tuberculosis is communicated to many through the consumption of milk. We ought not to go on the theory that it is not infallible but that it is.

Dr. Ferneyhough: What about the law for condemning North Carolina?

A. We have no law for tuberculosis. My experience has been this, we have announced that we would test any herd when the owner makes a request, but when he makes a request I make one condition that those reacting animals shall be within my control if we make the test free of charge or compensation. I want it so we can eliminate the animals, and I make that agreement or I don't make the test. I give the man the choice of killing the animals or sending those animals for slaughter. In most of the towns of North Carolina the public opinion is such that they would not permit the use of the animal if it reacted, so that frequently our cattle are shipped to slaughter houses at one of the markets.
and I inspect them. I want to say that in our case nearly all the cattle have been killed and the carcasses sacrificed. I tested fifteen head from one herd and all reacted and were buried.

Dr. Ferneyhough: At the consent of the owner?

Dr. Ward: Yes sir. Our law reads "When an animal is condemned it may be ordered to any abattoir where the United States government maintains inspection." We had it introduced for the reason that the cities forced the test and dairymen said the city veterinarian had it in for this one person and, if we make the post-mortem they claim we found lesions in order to back the work of the local veterinarian. So we turn reacting animals over to the federal inspectors and let them report on the post-mortems. Our law goes on to state that before an animal is killed there shall be appointed three appraisers to appraise the animal; one to be appointed by the State, one by the owner, and one by the other two appraisers, who shall appraise the animal not to exceed $35, and what the owner receives from the sale of the carcass or hide is deducted and the state pays three-fourths of the balance. Our experience is that when an animal is killed at the local slaughter houses the butchers won't buy it. When we ship to stock yards we derive more than we would from the local butcher. The law also provides that if an animal is not affected the State pays the full appraised value less the sale of the hide and carcass. We thought best to do that because it put a check on the city veterinarian.

Dr. Butler: The Bureau of Animal Industry must have worlds of material to show Dr. Luckey what the normal temperature is. It seems that he can get at it as near as possible in this human world of ours by getting this data.

Dr. Ward: I want to say to all of you who are engaged in State work, get your tuberculin from the Bureau because you get results.

Dr. Ferneyhough: Cattle coming into your state are tested?

Dr. Ward: Wisconsin, Minnesota, Montana, Washington, and Iowa require it on blooded stock but I question whether it is enforced.

Dr. Ferneyhough: Suppose they have been tested, you receive them on certificate?

Dr. Ward: Yes.

Dr. Luckey: We might go on until this time next year as to what has been done and is being done. But that is getting considerably away from the subject of the paper, and I would much prefer, so far as I am concerned, to discuss one thing at one time and at some time in the
future have an elaborate paper on the reaction of cattle and the enactment of laws for its control, and I would not interrupt the trend of the discussion, but we ought to come to some of the practical obstacles we have to face. I don't think I made any statement of the obstacles in the way of controlling tuberculosis. I think I only pointed out a partial statement and I must hold that our own lack of information is the greatest obstacle and one that must be overcome. I am glad to see some say there is a chance to make mistakes with tuberculin test. It has not been over two or three years that a number of our profession refused to use it. If we do not know the normal temperature it is exactly what I started out to prove that we do not know the amount of rise to hold an animal suspicious. What puzzled me is why we have written so much and stated the normal temperature is so and so and stated how much of a rise would indicate the animal to be diseased and I say we have done that and I don't care how we look at it in our opinion, to the thinking public it looks as though we don't know.

Dr. Ward: In testing glandered horses you go to the owner and he asks you what you base your judgment on, would you say very large local swelling and a rise of temperature?

A. I would use the mallein test and would be afraid to answer any questions at all. Don't jump at the conclusion that I am condemning the tuberculin test because in the beginning I said that the tuberculin test is a magnificent thing if properly applied but it should be used by experienced men and not by laymen, and I do feel that we need some description of the tuberculin test and its use for the reason that we have just begun to use it and we are bound to put a lot of men in the field to test cattle and I know of no description of the tuberculin test that gives me the ideas. Probably there are a dozen or may be three dozen men who have learned, and we have learned the signs to put on these normal temperatures and we are more accurate than a beginner, but I wish we had it written up in such an intelligent way that beginners would not have to go over the rocky road we have had to travel and would know better than to challenge some owner of a healthy looking cow on the slaughter bed where he apparently was in error. I would not undertake myself to write the directions to use the tuberculin test and the results because I feel incompetent to do it. We need such a document and it should be used uniformly in all our work in the different states so we may have the appearance of knowing what we are doing instead of having a lot of stock killed.

Dr. Tiffany: I would like to say a little upon our experience in Illinois. Some eight or ten years ago the Legislature appropriated a small amount of money to make the tuberculin test in Illinois. The Board of
Live Stock Commissioners made some rules and regulations under which the tests were to be held and by which tests would be made on application of the owner of the herd. They adopted plans of appraisement. The law limited the appraisement to $75. These applications and contracts read practically this,—that upon making this test and condemning the animals they be held and slaughtered and upon failure to find disease they should be paid in full and then the compensation ran from 75% down to 15%. It was believed that an animal generally tubercular was not worth as much as one in the incipient stage. Now over 1200 cattle were slaughtered in Illinois. Most of them were slaughtered in Chicago in the presence of Federal inspectors, city inspectors for Chicago and usually the owner accompanied his cattle in order that if any errors be made he was there to find it out. In less than one per cent were we unable to find any lesions, and it was new to our veterinarians in this State. I remember one herd in this city from which Governor Tanner was taking milk. The owner asked me to make a test of a cow the milk of which was to be used by the baby of his sister. He selected two and both reacted. A large number of those cattle reacted and were shipped to Chicago. Governor Tanner who had been using the milk was interested and went to see the slaughter but before we got half through the owner of those cattle said: “I want you to understand I am satisfied and I want the other six sent for.” The slaughter floor was covered with pus and so disgusting to Governor Tanner that he did not stay. At that time the Governor issued an order that all herds of the State Institutions be tested. At the Jacksonville Institution for the Blind they had a herd of Holstein cattle, none of which were found tubercular. At other institutions quite a percentage was found. They made no effort to keep it out and did not disinfect. When we went to Jacksonville we found none in the herd there, but the superintendent said he was apprehensive because the other superintendents said he kept his cattle too warm and called his the “hot house herd.”

Now as to the fact Dr. Luckey tried to bring out as to the normal temperature of cattle, Dr. Butler is correct about that. We can not cite any point. It will vary. I saw a record (sent to the office) of cattle to go to a foreign state and one cow ran up to 104 or 105 and the next day was normal. Out of all cattle that were tested there was less than one per cent which was not diseased which speaks highly for the efficiency of the test. I don’t know that we were more careful than others. I remember one of the former commissioners had a large herd of pure bred Jersey cattle and a large per cent, I believe seventy or more, reacted and were taken to St. Louis and slaughtered. The objection made to the tuberculin test was among the dairymen who did not lose cattle. They objected
to" the state taking their cattle and paying them only 15 per cent of
what they were appraised. Since then nothing has been done in this
State and I doubt whether you can eradicate tuberculosis under the test
because the expenses are so enormous that the people will not consent.
We will have to find some method of vaccination.

Dr. Koto, of Iowa: I have been listening to the remarks of Dr.
Luckey and others and I am free to admit that Dr. Luckey's statement has
created an opportunity for discussion. The fact is the subject is so broad
that we could hardly come to a conclusion when it comes to the matter
of obstacles controlling tuberculosis. It is so broad we might discuss it
from now until next winter and perhaps still have an opportunity to go on.
I assume now from the rather optimistic position of Dr. Luckey that his
main obstacle was the manner of conducting the tuberculin test, rather
than the manner of eradicating or getting rid of the tubercular animals
that were found. At any rate I consider that the questions he asked in
regard to the average normal temperature was perhaps not understood
by the majority and perhaps was rather hurriedly answered. I think under
all circumstances each individual animal should be considered separately
in conducting tests. There are many animals that give a high reaction
previous to the injection that comes from some other cause and in such
cases the animal would be unfit for the test.

Now in order to control or eradicate tuberculosis it seems to me it
will be necessary to have uniform laws where tuberculosis exists to a
large extent and in order to do so it would be necessary to obtain leg-
islation in that direction. The greatest difficulty, in my opinion, is the
disposal of the animals when found to be tubercular. I reluctantly admit
that our state, perhaps one of the largest, has a large per centage in
the diary herds and especially many herds owned by the state institutions
where they are kept confined in basement barns, and many tests have
been made by our department, where we found a large per centage
among cattle which were kept under such circumstances.

In regard to the average normal temperature, a rule should be laid
down that would cover all the grounds mentioned by Dr. Luckey. If I
remember correctly the 5th International Veterinarians' Congress did de-
termine on some rule. As I remember it cattle that had a temperature of
103.1 prior to the injection were considered unfit for the test. I am
unable to give the other part of the rule, but that was part of it. But
at the same time a man can't conduct a test without considering each
individual. As to the appropriations and reimbursements, various states
have different rules and laws. Dr. Ward states that all cattle that react
to the test when tested by his department are destroyed. I think that under some circumstances he is mistaken as regarding that. I think some cattle have been held or returned to the point of origin. I recollect one instance of a prominent breeder who undertook to show cattle in the adjoining state and in a bunch of forty, fifteen reacted to the test and were returned. Since that time I have conducted tests of the balance of the herd and found no less than fifteen out of eighty that responded to the test, which proved Dr. Ward was about correct.

There are some other things which have been brought up that I would like to discuss in regard to the transmissibility both from the human and from one animal to another that perhaps would hardly do to mention, yet one thing, however, we are very much interested in is the seeming increase of tuberculosis in swine. This is a matter of great interest from a financial standpoint with us. A few years ago tuberculosis among swine was practically unknown in our state. At the present time from the information we have been able to obtain we are safe in saying that the loss caused by tuberculosis among swine in our state will reach $600,000 annually, figuring it as a percentage of three-fifths of one per cent. Tuberculosis among swine is a difficult matter to detect on foot. Many buyers pride themselves on being able to buy swine that are free from tuberculosis. This is certainly a mistake. It is also difficult to trace the origin of tuberculosis among swine. In many cases, however, we have been able to trace tuberculosis among swine to farms where tuberculosis among cattle is known to exist. I could go on and enumerate many places but I realize it would be an injustice to many individuals and I will refrain from doing so. In a few instances where a very large per centage of tuberculosis among swine has been traced it has been found that these swine came from farms where they were fed from swill and offal from poor farms or state institutions where many tubercular inmates were kept. I do not wish to intimate that it is positively communicable from humans to the animals but it shows there is a chance of transmitting it in this way. Now if Dr. Luckey would have his paper read, or if his subject had been the manner of making the test instead of the manner of control we might have had a better opportunity to dispose of it, because the obstacles we have to contend with are so many that there are obstacles all the way through.

President Hankins: The next thing on the programme is a paper on "Animal Breeding", by Hon. W. M. Hays, Assistant Secretary of Agriculture, Washington, D. C. Prof. Hays not being present the paper was read by Dr. Parker.
The work of plant breeders in producing immunity to disease is having an influence in placing animal breeding as well as plant breeding on a new basis so far as diseases are concerned. It has added another far reaching method to be used in bringing about sanitation of animals; and, in cases of diseases communicable from lower animals to man, it offers methods of bringing forward new agencies to healthier conditions for man.

The production of varieties of cowpeas and cotton resistant to diseases known as root rot; of grapes resistant to phyloxera; of flax resistant to wilt; of gooseberries resistant to mildew; of oats and wheat resistant to the rusts; of oranges resistant to the rust mite; of orange resistant to root rot, cured by using sour orange roots on which to graft the sweet orange, are as actual and real accomplishments as was the production of steam engines, sewing machines, telephones, or bicycles. Plant breeders who have been connected with this successful work have faith that scientific efforts in breeding animals resistant to disease may be fruitful in accomplishment. All must recognize, however, that most animal diseases present very difficult problems to the breeder; and in many cases other methods of sanitation must be adhered to or devised. On the other hand, some diseases are so difficult to deal with, and the common sanitary methods are so inefficient, that if immunity can be secured by breeding, even at very large expense, that would appear to be at least one of the proper agencies to use, and most certainly worthy of investigation and trial.

Once the breeding of animals is taken up as vigorously as plant breeding soon will be, many ways will be found for approaching the problems of increasing the real, everyday values—the herd or farm value, rather than the mere show value of occasional beautiful specimens—of each and all classes of livestock. Species, breeds and hybrids, possibly as radically different as was the mule, will appear. New conditions demanding new uses will arise and will be met, and the thousands of conditions now existing will be met with forms better than those now available. If we import new diseases, we may need to import with them the animal forms which, having long been subjected to the disease have among them some individuals bearing hereditary resistance, that the blood of these few resistant animals may be reduced to purity—possibly in hybrid mixture with our native blood long improved for our conditions—and forms thus made available which will not succumb in the presence of the disease and yet will have high economic value in other respects.
But the practical question is as to whether a reduction of loss from such diseases as tuberculosis, hog cholera, surra and Texas fever can be effected. It would seem that at least these diseases can not be eradicated from all countries. Certainly no one has expressed a hope that tuberculosis can be eradicated. It would be constantly recommunicated from man to animals, even if it were possible to eradicate it from animals. At least with this disease there are very great incentives to breed cattle, and also swine, highly resistant to this dread and most subtle malady. This disease being the most important one to take up under breeding methods, it will here serve as the basis for a brief discussion.

All observing people recognize as true the common belief that some families of people are easily infected with active forms of tuberculosis, while other families are resistant to a high degree. Veterinarians similarly know that some individuals in the bovine family easily succumb to tuberculosis while others are very hardy in this regard; also that this low resistance and high resistance runs in families of cattle, as it does in men. A corrolary of these facts is that by breeding from only animals highly resistant new families or breeds of cattle can be produced which are almost immune. This corrolary cannot be extended to breeding races of men immune to the white plague, because in this case all but the immune blood cannot be discarded. The best that can be hoped among men is that the least immune blood will choose to not rapidly multiply itself, and that the public may make available a knowledge of the relative immunity of the blood of families especially weak or strong in their resistance to tuberculosis.

The most practical rule or law observed by scientific breeders of plants is, that, there is one remarkable individual in many, say, in hundreds or thousands; and there is among these one in many, say, tens or hundreds, with remarkable power to transmit his special—new—qualities. In other words, there is one in thousands or tens of thousands which is not only individually strong in a given direction, but as a parent will produce progeny also with the same characteristic. Plant breeders have found this true in their work with plants, and in looking back over animal breeding they find there an abundance of evidence that this law—these figures too, if you please—holds true in animals. Messenger, the sire of trotters; Noble, the Jersey sire of largest butter producers; Longfellow, the sire of Gentry's Berkshire swine, and Champion of England, on whose blood the famous sub-breed of Cruikshank cattle was founded, and some dozens of other animals which were profoundly potent in producing strains with new values, amply exemplify the application of this law in animal breeding.
These remarkable parents have been great, not alone in one characteristic, but in a valuable combination of numerous characteristics leading in one general direction. To win their large place in American affairs, as well as on the race track, the descendants of Messenger required inheritance of those powers in other lines which made him hardy and useful in the harness or under the saddle. Noble, could not have long lived in the blood of his progeny had his breeding power been weak as to tuberculosis. Gentry's Longfellow was strong as an individual, had strong breeding power, begetting strong individuals, as to form and breeding, and his blood had the power, rare among swine of enduring in and-in-breeding, thus making possible the production of a race of inbred hogs built up mainly from the blood of the original sire. Such a rare sire with the additional power of breeding along the line of resistance to tuberculosis would be of great value in swine and of still greater value among cattle.

The more characters we require in making up the desired pure bred stock to meet a given combination of requirements the more difficult is the problem, the fewer among a given large number are those fit to be used as parents having all the characteristics of individuality with power of heredity to project them into their progeny. The more complex the problem is, the larger the required numbers from which to select and the longer time required to find and to fix the desired strain.

It must not be hoped that perfect immunity may be attained, nor should the breeder be so impracticable as to devote all his time to finding the rarest animals. He must select by easy methods, as by judging by external appearance and by evidence of growers and breeders, from large numbers of the breed, or from the hybrid, those which give best promise; test these by general and inexpensive methods as to their breeding power along the desired line; and by following up the progeny of the best among these secure the very best that available means and time will warrant.

If we desire to add disease resistance to a given set of requirements we must add that to the list of score card points and give it due weight beside the other characteristics for which the breed is being created or improved. The breeding of animals is at best a long time proposition and breeding for resistance to a given disease adds to the time required to secure improvements along each other line included in the set of combined characters which go to make for net profits per herd or value per average animal of the breed or family. In most cases the prevention or reduction of loss from disease must be accomplished by the methods of the sanitary advisor or the sanitary officer.
BREEDING RESISTANCE TO TUBERCULOSIS.

For some years the writer, Mr. Gaumnitz, Dr. Reynolds and others in the Minnesota Experiment Station have been planning and preparing for experiments with rabbits and guinea pigs to make a beginning at experimenting to determine several preliminary questions concerning the practicability of working up methods of breeding resistance to tuberculosis. Following are some of the objects:

1. Are these families of rabbits and of guinea pigs strongly resistant to tuberculosis?

2. Can resistant families be segregated and made into resistant breeds?

3. Can foundation stocks of still greater resistance be produced by crossing animals widely differing in relationship and used in producing families still more resistant than those produced by selection within a breed?

4. The development of successful methods of uniform infection and the prevention of infection and the testing of the resistance of individual rabbits, and of guinea pigs, to tuberculosis.

5. The development of methods of tabulating pedigrees so as to record the breeding power of individuals and of families in the production of strains resistant to tuberculosis.

6. The development of methods of breeding for resistance to disease along with increased values in other lines as larger size, greater proportions of lean meat, increased fecundity, and other desired characters.

7. The perfection of methods of recording, tabulating, interpreting and of teaching the use of performance pedigrees.

It is hoped that these experiments may be so developed that a number of agencies may cooperate in carrying them out, and that they may be preliminary to larger projects in breeding cattle with higher resistance to this dread disease, thus making possible a reduction in the direct loss on cattle and the indirect loss this dread disease causes in man.

The fact that Jersey cattle in their native island rarely have this disease may be significant as indicating that some cattle are resistant in some climates especially favorable to them. And resistance to this disease might not be necessary to cattle on the ranches of New Mexico or Colorado. It may be that some of our present breeds of cattle have
greater resistance to tuberculosis than others. It may be that our common and highly developed breeds may have some individuals and families strongly resistant which would serve well in the production of resistant strains. On the other hand, Asia or other countries may need to be drawn upon for species of cattle which can bring to us this desired means of reducing our losses in cattle and of aiding in lowering our human death rate from the white plague. I am firmly convinced that no reasonable effort should be spared to bring all these matters to the test which science is nearly ready to give. Like many other world problems they are worth the cost of a thousand failures for one successful outcome.

BREEDING FOR RESISTANCE IN PRACTICE.

In the practical breeding now so very extensively developed in America, Europe, and in countries dominated by Europeans, something can be done in breeding for resistance to these subtle diseases, even with our limited knowledge along this line. Families of cattle, for example, known to have low resistance can be discredited in purebred breeding. By devising the proper methods our most highly organized breed associations, as the Jersey and Holstein, can record those families strong in resistance and also those which have a larger proportion succumb to this disease. Methods of recording freedom from or tendency to curb in certain classes of draft horses would be of value in perfecting the breed, and by highly accrediting the blood of some families might save them from falling before the competition which scientific breeding is bound to come to every class of horses. In twenty years Colorado Driving Horses, under scientific breeding could be so developed in soundness of feet and legs that they would stand modern pavement without developing diseases common in horses which travel daily under these highly artificial conditions.

NEED OF INVESTIGATIONS.

We have inherited, largely from England, a general plan of breed formation and breed improvement. We are injecting more or less scientific method into that plan, especially in cases where our herd book associations have learned how to minimize the mere lineage pedigree and utilize records of performance, as in some of the dairy breeds, and in speed horses. Wallace did our first great piece of constructive performance pedigree work in placing the records of the American Trotting Horse on a performance pedigree basis. His statement in the preface of Volume II of Wallace's Record is monumental as a section of the theory of breeding. It marked an epoch in methods of breeding.
Possibly still another change of general plan is necessary. A plan under which breeders and public officials charged with the work of research and advancement in agriculture has met with wide approval. This plan briefly told contemplates the following:

(1) The organization of cooperative associations, each to consist of 20 to 30 breeders.

(2) The cooperation of this organization with public officials in the development and the improvement of breeds of animals.

(3) The control of the work is placed in the hands of a board representing the cooperative association and the public.

(4) A man is employed by the board to superintend the work of breeding.

(5) The members of the association are to own the animals.

(6) The public funds are to be used in the extra expenses of finding the superior foundation animals, in making all tests and records, in giving expert advice and assistance in choosing and mating animals.

(7) In return for the public aid rendered the members of the association bind themselves to so conduct their breeding as to best carry out a plan of breeding which shall produce for general use an improved breed of animals.

(8) The animals produced may be divided into three classes.

(a) Those of the first class, which shall be deemed worthy of use within the association.

(b) Those of the second class, which may be sold and certified as purebred stock for breeding purposes.

(c) Those which may be sold only for use other than for breeding purebred stocks, and if males they may be sold alive when castrated.

The number of cooperators given above, 20 to 30, has been limited to the number practical for one superintendent to reach. This limitation and other suggested details may need change, the general plan only being deemed important. This plan contemplates having that number which could be visited monthly by a superintendent, and would vary with the facilities to travel, proximity to each other, connection by train and trolley, etc. If centered at an experiment station, with the members of the association in the ten counties immediately surrounding, one superintendent could compass the work. Some dozens of such projects would cover a part of the field needing specific work in breeding. Under such a system it might be possible to at least approach such difficult yet im-
portant problems as breeding for disease resistance, though general utility would continue to be the great object of breeding, and breeding for resistance to disease would be only one of many characteristics claiming a share of the attention.

Space will not permit of further enumeration and elaboration. But suffice it to say that the design of this plan is to merely use sufficient public money to so organize breed formation and breed improvement that the very best foundation stocks will be used, the best scientific plans be adopted, and the work continued, and not abandoned as now when firms rarely continue in the business for a longer period than the active life of one man. Cooperative Circuit Breeding is suggested as a name for this proposed plan of breeding.

President Hankins: In talking about the extermination of the tick Dr. Parker has been experimenting on dips and we would like to hear from him.

Dr. Parker: Dr. Mayo, of Cuba, gave to the Breeders Gazette and a little later to the profession the formula for a dip which he said killed all ticks without injury to the cattle. First, Mr. Clayburg, of the Texas Company was interested together with Mr. Moore and myself. So we arrived at an understanding that the Texas company should furnish the materials for the test and we would make it. I think I have carried it to a conclusion. I have not made any formal report on it either to the State or government. To make 500 gallons take eight pounds white arsenous acid, (we used the crude as the refined would be too expensive), 24 pounds of sodium carbonate, 24 pounds of yellow soap and one pound of tar. Put the arsenic in 25 gallons of water and boil it and then increase the water to a hundred gallons; dissolve the soap and soda in about 25 gallons of water; shave the soap so it will dissolve quickly, pour in the tar, the soda and soap in a fine stream. It mixes very readily. Then mix with the arsenic, adding sufficient water to make 500 gallons. The proportion can be increased to make a thousand gallons or any amount required. The strength is one to five hundred. Mayo states that he has not tried it as a dip but as a hand application. About the first test was on six calves from two months to ten months old. Two of the calves exhibited the rough coat of Texas fever. One had relapsed and showed very bad. The skin on that calf was in a very bad shape. We applied the arsenic solution by hand application as well as we could. On the fourth day I found no ticks that I could positively say were alive. It is hard to say if ticks in the moulting stage are dead. The only way possible is to wait until it is time for them to come out of the moulting
stage. On the other two calves it is absolutely true we found quite a number on the fourth day. This solution was not to see about its effect on ticks, but whether it would injure the cattle and I selected calves and these calves that had had fever were good specimens. We could not say that the calves were injured in any way. The skin was soft. The skin of the three that had not been sick was soft as on normal calves. The skin on the other two was rougher. We used this solution with the Seabury spraying machine. In making the solution we did not have the facilities for using sufficient water so we could not say we had it perfectly made. We only had a ten gallon tub to make 250 gallons. We boiled four pounds of arsenic in ten gallons of water. We never did get it entirely dissolved. Then we added to it the sodium and tar and then diluted to 250 gallons. We sprayed six head of cattle with that solution without soap and then added the proper proportion of soap making it correct so far as we could. We then sprayed ten in one bunch and fourteen in the last bunch. The cattle were covered with ticks. I observed them on the third, fifth and seventh days. The skins of the cattle were somewhat crisp by the application. I would not say they were injured so as to knock off a pound of flesh but the skin was crisp, almost as crisp as if we had used Beaumont oil. It did not kill all the ticks. We found them with white spots on their heads. It is my observation that when a tick is dead the color becomes diffused very quickly. In addition to that we found some of the older ticks were alive. I believe that all the old ticks that were thoroughly saturated by the machine would have died within ten days. One point the machine did not reach is just inside the ear and fever ticks frequently congregate there. That every animal had ticks on the ears leads to the belief that the spraying machine is not a success. Such a large portion of the ticks were killed however that in my opinion this could be useful in tick killing. We could see no difference in the action of this dip with soap and without soap. A dip that depends on on soap for results or to maintain it in form for use has been proven to be not successful where the dirt is alkaline. Sufficient dirt is carried in to neutralize the soap and it was neutralized in this dip. So I say it is of no use to put soap in it.

Dr. Lamb: What advantage has that dip over the use of oil?

A. In our country oil is quite dangerous owing to heating. Further north in winter time it is chilling. It can not be depended upon at one application to kill all ticks. Probably two dippings ten days apart will kill all ticks. We are yet experimenting and will find that out later.

Dr. Tiffany: Has the lime and sulphur dip been tried?
A. Yes sir Q. With what result? It is not successful. It kills a small proportion but not all.

ADDRESS BY DR. TAIT BUTLER, STATE VETERINARIAN OF NORTH CAROLINA ON "THE VALUE OF FARMERS' INSTITUTES IN EDUCATING THE PUBLIC ON CONTAGIOUS DISEASES OF LIVE STOCK."

Mr. President and Gentlemen:

I will try not to keep you very long. I have been very busy at the work with which this subject deals, that is Farmers' Institutes, and after I came here I expected to write my paper last night, but the society of you gentlemen was so attractive that I could not break myself away.

Having no written paper I am going to just talk to you a little while on this subject. From the wording of the subject it would appear that there is a lack of information, lack of education among the constituency of the Farmers' Institutes in regard to live stock sanitary work. Now, perhaps it would not be amiss to say a few words regarding that. Why is it that this ignorance or lack of information exists in the minds of the Farmers' Institute audiences. I believe that medical men are largely responsible for that lack of information. From the earliest times the medical man has attempted to throw an atmosphere of mystery around his profession. In the early ages that may have been necessary, to hide from the public all that was known. But I say today the practice of many medical men and veterinarians in not giving to the public information on medical subjects is responsible for the tremendous lack of information on these matters. They know more of law, engineering, more of any other profession than they do of medical science. It is possible that this is partially due to the unusual or profound nature of the subject, but it is particularly due to the fact that the men who know most about the medical sciences have not done their duty to the public. I believe that the first step along this line is for the veterinarian or the medical man to be frank when he gets an inquirer, to be liberal and give him the information he asks for, not one sided information, and not only his practical opinion but the consensus of opinion among the best authorities in medical science. We have not done it. We have not done this as veterinarians and we have not done it as sanitarians, like we should.

I am going to speak as a veterinarian, as a sanitarian and from the Farmers' Institute stand-point, having been a Director of Farmers' Institutes for several years. I am going to speak a little from both sides.
Now then, from the veterinarian's stand-point it is important, and it is important from the sanitarian's standpoint, that the fullest information regarding this subject be given the public. I say it is important to his peace and pleasure of mind in doing his work, and also to the efficiency of his work. I would rather treat a horse for a medical man than a layman. I would rather treat a horse for a man who knows the fundamental principles of veterinary science than for a man who is ignorant. I have heard medical men say they would rather treat a veterinarian or his family than to treat the average layman. So the more information you give to your constituency the better results you will secure and the more pleasure you will get out of your work. I believe that it is not only for our pleasure in doing the work that we should give the fullest information to the Farmers' Institute audiences, but also for the efficiency of Sanitary Control work. Now, how are you going to do this? As a Farmers' Institute director and institute worker I wish to state that the speakers who can interest farmers' institute audiences on this subject are scarce, extremely scarce. That is the greatest problem today before the institute director, to obtain men who are able to go out and interest and instruct their audiences. I have no respect for that slander that farmers are not anxiously seeking for information. They are. But I don't blame them for not accepting the information that has frequently been given them. Now then, the difficulty in presenting sanitary matters before a Farmers' Institute audience, is the scarcity of men who can go out and interest them. If we refuse to give the layman satisfactory information when he asks for it, how much more-difficult will it be when we go out to him and ask his attention. It is difficult to find the speakers in our own state, and in some other states I know, that can intelligently bring live stock sanitary matters before the institute audiences.

I suppose this subject refers to education along scientific, not along business lines or office work, or it would not be given to me. Therefore I take it that it is thought that by giving specific or scientific information to farmers' institute audiences it would assist them to grasp the full importance and nature of sanitary work in their states. In the first place you want to find a veterinarian who has the information. You say that is easy. Possibly it is, but it is not in all places where institutes are held. Judging from what I have heard institute directors say I think it is difficult. In those states where there are sufficient veterinarians who can be selected then I say the Live Stock Sanitary Boards and Veterinarians are not doing their duty to themselves and their duty to the public if they do not take steps to get on the institute staff as many veterinarians as they can, but when you fail to get them on don't feel
that the institute directors don't want them. But be careful that the man is the right sort. Be careful not to offer them a man they don't want. The lay members of live stock sanitary boards can do most in this line, but veterinarians may exert influence through prominent men having influence with the institute authorities.

In my opinion the abuse put upon veterinarians in this country is due largely to the lack of public information, the lack of knowledge of what veterinary sanitary medicine means. We ought to get in the institute work. We can give information that will be useful and without which satisfactory live stock sanitary work is impossible. Now then I am not going to take up your time but for a few minutes more.

I believe that the live stock sanitary man going on the institute staff must present his ideas in attractive form. No matter what a fine subject he has, if he does not interest his audience he is a failure. They start out with prejudice that they are not interested in this subject and unless the speaker can present it in a sufficiently attractive manner to catch and hold their attention he is likely to fail. The man that gives this information must also give it in a way that his audience can digest it. One who could be one of the best talkers on this class of subjects that I know of, is a veterinarian who cannot divest himself of technical terms. He cannot talk to any audience without using terms that they do not understand. Perhaps they may understand them but still technical terms are offensive to laymen. We must use the terms used in common talk. You say you can't do it. Yes you can, but not easily. It is a difficult matter to use technical terms so they will be understood and it is also difficult to discuss a scientific subject without using them, but we must do it.

Now another place we fail in farmers' institute work is because we do not represent the consensus of medical opinion but try to air our private opinions and theories. I want to say that the man never existed who could be a successful teacher if he draws from his own experience only; he is sure to be too narrow. He must know the subject thoroughly and give the average, or consensus of opinion and if he does not do that he will mislead. Again he must be able to condense into a short talk sufficient information for one lesson and not try to over-load them at one sitting. In other words, the difficulty is the average man wants to cover the whole field in a short talk.

Now, I want to say one more word in regard to the Farmers' Institute work. Much good can be done in giving out information along live stock sanitary lines. A man can take up the life history of the cattle
tick for instance. He need not use a single scientific term, but if he will give its life history in simple language there is not a farmer in America that will not be interested in it and listen, but just as soon as he gets to using scientific terms his audience begins to go out or fidget in their seats. The same fact will apply to every other sanitary subject.

The three important sanitary questions demanding solution today are such that they can only be properly handled when the public is educated. How can we handle the question of tick extermination, hog cholera and tuberculosis until we educate the public? A real knowledge of the principles involved will give the motive and the enthusiasm. These are questions of importance. They are the questions that demand our attention and I say to the live stock sanitary authorities of the states here represented that if we fail to successfully handle these large problems we shall fail to measure up to the requirements of our work and miss an opportunity to put live stock sanitation on its proper foundation. We must push these matters. If we wait for the public to get ready for them they will never demand the solution of these problems from us.

For instance I suggested the holding of institutes for women from the farm homes of our State, in connection with the farmers’ institutes. Some said this is a good work, but the people are not ready for it. I went on and held twenty-two institutes and they proved they were ready by coming out 50 to 200 to each institute. Farmers’ institute audiences never will be ready for these questions unless we make the start. We have got to get them ready. But I want to say as a veterinarian we must be careful as to the men we send out to the institutes to prepare the people for this advanced live stock sanitary work.

The paper on Defects which should Debar the Mare or Stallion from the Stud, by J. G. Ferneyhough, State Veterinarian of Virginia, was not read.

President Hankins called for the report of the committees. The report of the Committee on Line and Open Season was read by Dr. Tait Butler.

LINE AND OPEN SEASON.

Your Committee on Line and Open Season made the following recommendations:

(1) For the States of Virginia and North Caroline the open season under inspection shall extend from December 15 to March 15, instead of December 1 to March 15.

(2) For Oklahoma,—Inspection for cattle from the infected areas in
Oklahoma from December 1 to January 31, and that cattle be allowed into Oklahoma and Indian Territory when inspected and found free from infection or from exposure thereto by an inspector of the Bureau of Animal Industry and upon certificate issued by such officer.

LINE.

Additions to free areas in the states of Virginia and North Carolina be left to be arranged between the authorities of these states and the Federal authorities.

D. F. LUCKEY, CHR.

President Hankins: I want to say to Oklahoma that this year Oklahoma will embrace the Indian Territory as well and I think Mr. Morris ought to arrange it so cattle can go into that territory by government inspection. As a matter of fact there will be considerable feeling between our states, and if he passes it as it is he will shut our people out of trade and grazing and I don’t think it is proper for any state to live alone for itself. The free movement of cattle from one point to another is the object of this association. If you pass it this way it will shut out every thing for the Indian Territory.

Mr. Morris: The suggestion was made for Oklahoma proper because we knew that for the coming year we will have nothing to do with the Indian Territory because we think it will be a year before the state is admitted, and if such is not the case we can easily amend our rules.

Mr. Hankins: Mr. Morris I move that the Oklahoma part be amended to accept Federal certificates of inspection at any time of the year.

The motion was seconded by Dr. Butler and carried.

THE REPORT OF THE COMMITTEE ON RESOLUTIONS WAS READ BY DR. WARD.

Be it RESOLVED, that the thanks of this association be extended to the Board of Live Stock Commissioners of Illinois for the courtesies shown to the members of this association at its annual meeting held at Springfield. (Signed). S. H. WARD.

On motion the resolution was adopted.

"Be it RESOLVED, that a committee of three veterinarians of this association be appointed at this meeting, who shall prepare an article to be printed in the proceedings of this association covering the subject of "Tuberculosis in Cattle." (Signed) M. M. HANKINS.

On motion the resolution was adopted. The president appointed as the committee named in the resolution Dr. Luckey, Dr. Butler and Dr. Tiffany.
WHEREAS; The Federal meat inspection laws recently passed make no provision for the inspection of local slaughtering plants in small cities, towns and villages, and

WHEREAS; Many such plants are known to be kept in an uncleanly and unsanitary condition; be it

RESOLVED; That this Association recommends that the law making bodies in the various states, by the enactment of suitable statutes, empower the live stock commissions in the various states to inspect such plants, and enforce cleanliness and good sanitary conditions therein.

On motion the resolution was adopted.

WHEREAS; The duties of Humane Agents in the various states pertaining more properly to the prevention of cruelty to animals, and

WHEREAS; Owing to the increase in the volume and importance of the traffic in such animals the duties of humane agents have increased in volume and importance beyond the expectation of the authorities, of the framers of the law creating such humane agents, and

WHEREAS, The number of men in each state employed in such capacity has been totally inadequate; therefore, be it

RESOLVED; That this Association recommend to the proper authorities of the various states that the laws relating to humane agents be amended so as to place the humane agents under the jurisdiction of the Live Stock Boards in the various states, and making provision for a sufficient increase in the number of such humane agents and appropriating the necessary amount with which to compensate them, so that they can perform the duties of the office with more efficiency than they have been able to do, owing to their small number and the vast amount of work required of them.

Mr. Smith: I move the adoption of the resolution. It was made for our state. We have one humane agent appointed by the governor on the appropriation made by the legislature and one in East St. Louis. We had at the last legislature a bill gotten through to give one assistant at Peoria, giving us four in the State. Governor Yates before going out of office asked these men to report to us and asked us to O. K. the reports and pass them along to his department. I want to call the attention of this association to the fact that in Chicago the yards are extensive, covering one section and may be two. Two thousand carloads of cattle with an average of twenty to the car are unloaded and you can imagine how many men can see. He has to be at the unloading chute and it would be necessary for him to be at other places and it is an absurdity to have one
I want to call your attention to the report of the humane agent at that place. It is supposed to extend from March 6th to May 1st, 1906. He gives the dates and I will give part to show how matters run.

I want to call your attention to the practice of loading calves with cattle. I found out why it was done when I was shipping a load of beef cattle to Chicago. A man came to me and wanted to put them in the car with my cattle. He said I can shove them under the cattle and they won't be noticed; that is the practice and there are very few cars that come in without calves.

March 6, Platform 3, Chute 133, ordered out one steer badly cut.
March 8, Shot one calf in Chute 20, platform 7, badly trampled.
March 12, Platform 3, Chute 167, ordered out one steer, broken leg.
March 12, shot horse with broken leg.
March 13, Platform 5, Chute 65, ordered out one heifer, badly cut.
March 14, Chute 138, platform 3, shot one calf, badly trampled.
March 16, Platform 7, Chute 69, ordered out one steer, broken leg.
March 19, Platform 7, Chute 59, shot one cow badly trampled, not fit for food.
March 19, Platform 5, Chutes 48 and 49, ordered out two steers with broken legs.
March 20, Platform 10, Chute 4, shot one cow badly trampled and cut.
March 21, Platform 4, Chute 9, ordered out one steer, broken leg.
March 26, Platform 5, Chute 5, ordered out one steer, broken leg.
March 22, Platform 6, Chute 32, ordered out one steer, badly hurt in back.
March 23, Platform 3, Chute 124, one cow badly cut.
March 28, Platform 8, Chute 28, ordered out one cow, badly trampled.
March 29, Ordered Independent Packng Co. on Halsted and 40th to clean pens where cattle were kept.
March 30, Pen 93, block 6, killed one calf, badly trampled.
April 2, Platform 3, Chute 150, one steer broken leg, ordered removed.
April 5, Car No. 7319, Platform 5, 29 crippled sheep ordered removed. Taken from car, loaded on wagon and taken to killing house.
On April 25, Platform 10, Chute 8, seven steers in one car with broken legs.
One other. April 30, Platform 5, Chutes 68, 66 and 65, three cows badly trampled, removed.
Cruelty is practiced in the yards. I wish I could give you a letter the governor received. Our men report the instance of driving a calf with a broken leg and holding it up by the tail.

The resolution was adopted.

President Hankins: The next order on the programme is "Five Minute talks of Live Stock Conditions in Various States, by Members."

Colorado was represented by Dr. Lamb: I have nothing special to offer. At former meetings I have referred to mange. We are not free but we have it under subjection and I feel we are in a fair way of entirely eradicating it from the state. The cattle, with this exception, are in good health. Sheep scab is there. We have 5 or 30 government inspectors in the field dipping sheep. We had the same warfare last year and were able to subdue it in many sections of the state. This year in all sections we are probably dipping from six to eight hundred thousand sheep.

I have only had a few outbreaks of glanders. I have discovered seven cases this year. There have been two outbreaks of hydrophobia but the loss has not been extensive. Cattle in my state are in fine health and I trust they will continue so.

One subject we are giving attention to, is the keeping out of hog cholera. Our state is free from hog cholera. I can only give reports of three outbreaks of hog cholera which eliminated all hogs in that section and we can say there is no hog cholera. Some parties are going into hog raising very largely and it has become a question with me how to keep the disease out, and I have had talks with some of the veterinarians present.

As far as tuberculosis is concerned we have no law compelling the testing of cattle for tuberculosis, but as I intimated earlier in the day there will have to be some law put on the statute books requiring the testing of all dairy cattle. Public opinion will cause the legislature to do something, and not having any test we do not know whether we have any tuberculosis or not, but think some of the dairy cattle may be affected, but not the range cattle.

Illinois, represented by Dr. Tiffany: It does not take long to give the state of affairs in Illinois. We have about the usual amount of glanders every year. We make no attempt to discover and destroy all the horses so affected. Our cattle are all right. We have had one herd affected with scabies, which got out of Chicago and were sent back immediately. It was the only case we ever had and the cars were disinfected. There has been some hog cholera but conditions in general have been good.
Q. Do you permit hogs that have been unloaded in the stock yards to be shipped to the country?

A. We have nothing to do with that.

Dr. Tiffany: A man some times ships hogs to market and does not get the price and he wants to ship them back and our inspectors want us to take that up. But it is dangerous to send them back. I don’t think any breeding animals have ever been shipped out.

Oklahoma, represented by Mr. Morris: The work is going on in our state something along the lines in North Carolina, with the help of the Federal authorities on tick extermination. This year the Federal people are furnishing as many men as we, or more, and have taken up the examination of the pastures and where infection is found and the owner refuses to dip we turn the cattle over to the sheriff to be dipped at public expense. We find some kickers. Of course owing to climatic conditions no cattle have been held in tight stables and we have no tuberculosis, and we have never had a case officially reported. We have had considerable glanders within the past year. We have killed something over a hundred head of horses, but we have it under control. The only hog cholera we had was last year when the hogs were shipped from Fort Worth stock yards and all the hogs shipped in died as well as those they came in contact with, and that stopped the hog cholera. We are trying to prevent it this year. Our work is a campaign of education, and the people are taking an interest which is the best sign I see.

Iowa, represented by Dr. P. O. Koto: We have about the usual number of contagious diseases in our state. Perhaps tuberculosis and glanders predominate. We have had numerous calls from various parts of the state in regard to glanders and in many cases we found typical cases. We are unable to trace the history or origin of the cases. In a few instances the outbreak seems to have started from horses coming from the west, but we have a great many cases where we can’t trace the infection. Unquestionably this disease is in parts of the state and when conditions are right we have an outbreak. I know in one instance we had 26 typical cases in one city and at the present time I know of several cases in one country. We have during the last month destroyed not less than seven head in one little village and they were typical cases. We obtained the owner’s consent to destroy these animals without being re-imbursted because we considered them of no value. We have very little trouble in making the owner see that it is to their benefit to destroy the diseased animals and the animals that are exposed are placed in quarantine until we have occasion to visit them again.
The greatest difficulty is tuberculosis among swine and cattle. As I said before our state has so far failed to furnish funds to reimburse parties for loss, so our only means to eradicate this disease is to obtain the consent of the owner to either destroy the animal found to be tuberculous by killing it on the premises or to ship to the nearest market for slaughter, subject to public inspection, the owner in this way receiving the market value as laid down by the Bureau authorities. We have conducted many tests and have in many instances received a large per centage of reactors, and in a majority of the cases the owners have abided by the tests and disposed of the animals, and wherever we have been able to hold post-mortems we have found in many cases tuberculous lesions. In fact I do not know of but two or three instances where we failed to find tuberculous lesions.

In regard to scabies we have had very little difficulty. Our department has received notice from the government bureau of all cattle or sheep affected with this disease that we shipped to the various markets from our state and when these reports are received we aim to follow them up and get the owner to disinfect his premises to prevent any further outbreak.

We have within the last year encountered two cases of Texas fever that was new to us. It resulted in quite a loss. The infection was brought into the state by cattle shipped from Kansas City. We undertook to follow up this shipment and did trace it. We also traced the car the cattle came on and required the railroad to return the car and clean it up. They also disinfected the yards and all animals exposed were placed in quarantine and no trouble resulted. Both these outbreaks were traced to Kansas City as the original shipment came from there.

In regard to hog cholera, there has perhaps been less hog cholera with us than in former years. We are unable to account for this unless perhaps people realize the necessity of sanitation along these lines and we have adopted a plan in regard to the manner of inspecting swine at our State Fair. We require all pens to be thoroughly disinfected before and during the Fair. We also examine all the pens once or twice a day in order to detect any cholera among those that are exhibited. During the last two or three years we have only found a couple cases of cholera among those hogs that were exhibited and these animals were promptly taken away where there was no opportunity for exposure. I have talked with a number of exhibitors who think this is a good method of preventing the spread of cholera. I am told that years ago many times after returning home from fairs they would find that they bought hogs or some of
their own hogs had been exposed and they had an outbreak and it spread to the neighbors very rapidly.

We have very many other contagious diseases to deal with such as rabies and outbreaks of that kind. Recently during the last couple of years we have had an outbreak of maladie du coit. This might have been serious but it was discovered early and a strict quarantine established. The origin of this disease was traced to a horse imported from France which animal spread the disease among mares and stallions in that vicinity. The bureau gave us assistance in eradicating this disease and we destroyed thirty mares and a few stallions. At present there is no trace of the disease in our state.

Missouri, represented by Dr. Luckey: I will say in regard to hog cholera, in as much as that is one of the leading troubles we have had to deal with, that during 1901 and 1902 there was practically no hog cholera. The drouth of 1901 made it necessary to ship out I believe 29 per cent of the normal crop. In 1902 the corn crop was enormous and anticipating that the demand for hogs would be great I went to all the yards and forbid them letting any hogs come out alive. There were hogs from all the ends of the earth that did not come through the yards and we got cholera. I first thought of advising our Board of Agriculture not to allow them to come into the State but they thought that would be criminal. The fact is a hundred and fifty nine died within fifteen or twenty days. One member of the Board of Agriculture came to me and wanted me to release them to go into his neighborhood to feed and I turned him down for the reason that it was impossible for the owner to handle them in such a way to prevent them from giving the disease to others. We have several diseases in this state and I fancy that it is very much the same in Illinois, Kansas and Nebraska, but we undertake to control the contagious diseases and we go at it with some progressive spirit, and I have arrangements with the stock yards to get reports from Missouri and on receipt a deputy is sent. He goes with instructions to control it if it takes money to do it and to do it thoroughly. We had in the great state of Missouri last year 23 cases of glanders outside of Kansas City where they had 18 cases and 76 outside including the city of St. Louis. I have received admirable support. The veterinarians make reports although there is no fee and very little glory. We have found a competent man who does deputy work continually and the other eighteen are paid so much per diem when they work. We get at outbreaks of disease as soon as possible. I have been figuring for nearly two years at getting at some system of slaughtering animals for food. An inspection shows that the country slaughter houses are very filthy. It is impossible to dress an animal cleanly and there is no restrictions or inspection and I am trying
to get a law applying to the packing houses in the larger towns and have asked the legislature to name a rule for some local officer to see that the slaughter houses are kept clean. There is great work ahead in Missouri in keeping out all diseases common in the different states and we are doing it fairly well, but see no prospect of beginning a campaign against cholera. I am devoting my energies in preventing the spread of tuberculosis.

North Carolina, represented by Dr. Butler: We have the same difficulties you have everywhere. I suppose we, like everybody else, look upon hog cholera as a necessary evil. There are two points I am devoting my attention to. You know what one is. We expect to add three or four counties to the list of free counties this year. Our state is like some other states, eighty per cent of the people live on farms and we have no large towns, and therefore for the past year practically no effort has been made to supervise the milk or meat supply in those cities. Little has been accomplished in that direction but still there is a field for that work. I wish to corroborate what Dr. Luckey says not only as to country slaughter houses but town slaughter houses where there is no inspection. They are in a shameful condition and now that we have found the inspection of meat goes to interstate traffic, we should, as sanitary boards, give attention to the meat that goes to the local consumption. We will not be able to do much but we will be able to do something.

Texas, represented by Judge Hankins: Texas can cover about the whole field. Cattle are doing well and about the lowest in the market and farmers are hoping for higher markets. We have some sheep scab but pay no attention to it. We have no law in regard to it and the burden is on the federal authorities.

We had some trouble with anthrax on the Louisiana line and they say they think they will have a provision for that next year and will join with us and clean up.

Virginia, represented by Dr. Ferneyhough: Dr. Butler has covered about the conditions in Virginia. Our conditions are much the same. The work is exterminating the cattle tick. There are nine counties that will be placed above the line. As to other diseases I fear we have our share of tuberculosis and have some hog cholera, but from what you gentlemen say I don't think it is quite so extensive. We have one trouble you have not mentioned. We have spinal meningitis. We have an outbreak every year. With that exception I think the live stock conditions in Virginia are good and I am pretty well posted as there is hardly a county I have not been in. The live stock interests are handled by the Board of Control. We are receiving help upon the tick question from Dr. Curtis.
President Hankins: The next thing is the election of officers.

Mr. Smith: The office of president of this association has been passed around from State to State. Each State has appreciated it. I have been connected with the Association for about five years and have attended five of the annual meetings. At each of these meetings a gentleman has been present taking an active part and during this time he has not been honored with the position and I would like very much to see him get the place and I therefore name Dr. D. F. Luckey as a candidate for President.

The nomination was seconded by Dr. Butler, and on motion of Dr. Lamb the nominations were declared closed and Dr. Luckey was declared the unanimous choice of the convention for President.

Dr. Luckey: I certainly appreciate the compliment and yet I assume the responsibility with some degree of reluctance. I believe I have talked as much as any one on the importance of this association. I shall try working in connection with the secretary and will do everything I can to secure a larger attendance and will work to the end of making the association a success. It is a great inspiration for me to come here and sit down with my friends from Oklahoma and Virginia and I read the history, that in every state we are honestly trying to do our duty, and we will come to the point that the sanitary boards will not only be recognized as responsible people but it might be that some day we will get pay, just pay for the work we do. In order to get pay we have to deliver the goods and in order to do that we have got to get together.

Dr. Lamb placed in nomination Dr. Tait Butler for Vice-President. Dr. Butler said: “I wish Dr. Lamb would withdraw my name as I have had the honor once and it should be passed around.”

Dr. Tiffany placed in nomination Dr. Lamb. Mr. Smith moved that the nominations be closed and that Dr. Lamb be declared the unanimous choice of the convention for vice-president, which motion was carried.

Nominations for Secretary were in order. Dr. Butler moved that Dr. Ward be nominated and that he be declared the unanimous choice of the association for Secretary, which motion was carried.

The place for the next meeting was the next business and Dr. Ferneyhough presented the claim of Virginia and asked the association to meet at Jamestown during their exposition there next year. Mr. Smith seconded the invitation of Virginia. Dr. Luckey presented an invitation from Kansas City. On motion Virginia was selected as the State and Jamestown the city in which the next meeting should be held.

A motion to adjourn to meet at Jamestown, Virginia, at some time to be designated by the president and secretary was carried.