

EIGHTH BIENNIAL REPORT

OF THE

VETERINARY SURGEON

OF THE

STATE OF IOWA

TO THE

GOVERNOR OF IOWA

For the Period Ending June 30, 1912

DES MOINES,
Robert Henderson, State Printer
1913

LETTER OF TRANSMITTAL.

Honorable G. W. Clarke, Governor of Iowa:

In accordance with provisions of the statute I take pleasure in presenting herewith the Eighth Biennial Report of the State Veterinary Surgeon, for the period ending with June 30, 1912.

Respectfully submitted,

J. I. GIBSON,
State Veterinary Surgeon.

INTRODUCTION.

The object of this department has been to aid in the development of the live stock industry of the state by preventing, as far as possible, the introduction of contagious or infectious diseases, enforcing measures to control, suppress and eradicate diseases that are already prevalent within the state and to investigate the cause and nature of any disease which appears to be a menace to the live stock industry or public health.

The establishment by the legislature of a commission of animal health has been an important step in the handling and prevention of diseases in live stock. While this commission may make such rules and regulations as they may deem necessary for the proper control of diseases they have absolutely no power to inflict penalty for violation of rules nor dispose of an animal known to be affected with an infectious or contagious disease. The lack of proper power on the part of the department to dispose of such diseased animals is a source of considerable annoyance and criticism. While the statute provides for the appraisal of diseased animals there is no fund set aside for payment of such claims nor could diseased animals be appraised and disposed of under the section referred to except by gaining the consent of the owner of such diseased stock. The rules drawn up by the Animal Health Commission have been a means of barring diseased animals from the state and numbers of animals shipped into the state were found to be diseased when the necessary tests provided for in such rules were applied, these animals being properly disposed of, thereby protecting the native live stock from probable infection. As will be noted from the statistical report contained herein, there were 16,117 head of live stock imported into this state, during the six months between January 1, 1912, and July 1, 1912, all of which passed an inspection and it will be readily seen that the vast movement of stock would be a source of great infection were it not for the present importation requirements.

The tuberculosis situation has assumed little, if any headway, being met on all sides by opposition. The better class of stock raisers evading a general test and eradication of the disease from their premises, being in a position, as they are, to dispose of a

suspected animal to some innocent purchaser as a healthy animal and receive the price an animal in first class condition would bring. The poorer class of people who have but a limited number of animals and depend more or less on their cattle for a livelihood oppose the test for fear the disease would be found in their herds and would prefer to handle and feed such stock in ignorance of their possible condition rather than know the truth and abide by the consequences.

The present method of selling tuberculin and applying tests is far from beneficial to satisfactory results in eliminating tubercular cattle from herds or gaining assurance that cattle even when accompanied by tuberculin test records are free from tuberculosis.

Tuberculin is a very accurate and reliable diagnostic agent for the detection of tuberculosis but may be procured by the laity and the tests applied by careless, unscrupulous and incompetent parties. Cattle suspected of reacting to tests of this nature are disposed of as the owner may see fit, which is generally to some unsuspecting party, whereby the original owner shirks the loss and the animal is passed on to other premises where the disease may not have been previously in existence, and sets up a new area of infection.

Hog cholera has been more or less general over the entire state during the past two years and great interest has been taken in the matter. Owing possibly to the fact that the losses are more apparent than from some of the more obscure diseases such as tuberculosis and glanders where the animals can be dealt in and the loss and damage covered up.

This department has not given the disease the attention it demands for the reason that the funds of the department are very limited and emergencies of this kind cannot be met. Nothing further could be done than to establish quarantine on an infected herd from which little benefit could be derived as the disease is readily spread by means not controlled by quarantine.

The serum treatment has proven very beneficial where it has been applied properly and great saving has resulted. Bad results have been reported but in most cases it has been where the simultaneous method of treatment has been employed. The output of serum by this department has been necessarily very limited for the reason that the appropriation made for this purpose by the legislature was not enough to employ necessary help for the biennial period for which it was intended to cover and the price of the serum manufactured under this provision was made twenty cents

per ounce, which is about one-half the cost of manufacture. The proper procedure to follow tending to the eradication of cholera would be the establishment of proper laboratories with sufficient funds to carry on the manufacture of serum at a moderate price or provide for the sale of such serum to perpetuate its manufacture, this together with provisions for competent veterinarians to control the disease in the field and some restriction on the various proprietary serums would yield very satisfactory results.

The second outbreak of dourine in the state was reported to this department in May, 1911. This outbreak involved a number of stallions and mares in Taylor and Ringgold counties and bade fair to cause considerable trouble as the department has no means of purchasing and destroying diseased animals. The U. S. Bureau of Animal Industry however answered our call for aid with their usual prompt and unqualified support.

EIGHTH BIENNIAL REPORT.

During this biennial period, beginning April 26, 1911, and ending June 30, 1912, this department has received three hundred and thirty-nine official calls. Of these, seventy-two were calls to investigate glanders; ninety-four to investigate tuberculosis; fifteen to investigate scabies; fourteen to investigate rabies; three to investigate cerebro-spinal meningitis; nine to investigate hog cholera, and eighty-two to investigate dourine, besides fifty miscellaneous calls.

GLANDERS.

During this period, in answer to official calls to investigate glanders, the Department has visited thirty-six counties in the state, and in most instances the disease has been found to exist as a result of the importation of horses from other states. In one instance a carload of horses was shipped and all but two of the animals in the shipment were found to be affected with glanders. This carload was sold and distributed on Iowa farms before this Department received the call to investigate, and the infected horses thus distributed were accountable for the loss of a number of native horses. This is a sample of what we learned was happening in various parts of the state and on account of these results the Animal Health Commission formulated their ruling requiring that all horses shipped into the state from states west of the Mississippi river must be accompanied by health certificate and record of mallein test. Since this ruling went into effect on August 23, 1911, the testing of such shipments before being released at point of destination has revealed the existence of glanders in a number of importations.

The rule provides that any shipment of horses from states west of the Mississippi river not accompanied by health certificate and record of mallein test, enters the state in quarantine and shall remain in quarantine until released by this Department. The strict application of this rule will prevent the recurrence of such outbreaks, as the one referred to, and will save our Iowa farmers a large percentage of the losses heretofore sustained on account of outbreaks of glanders resulting from the importation of diseased

horses. During this period, the Department encountered quite a serious outbreak in the vicinity of Eldora, Iowa, which was definitely traced to one western horse that escaped from a shipment reaching Iowa Falls from Wyoming four years ago.

Most of the outbreaks of glanders located during this period are the result of importations from South Dakota, and these importations in most instances were unbroken horses.

The writer is of the opinion a ruling should be made prohibiting the importation of unbroken horses for the reason that this class of horses cannot be satisfactorily examined or tested. At this writing we believe the horses of this state are again practically free from glanders, and as the state is now safeguarded by the test requirement in Rule 19 by the Animal Health Commission, we hope to keep our horses free from this disease.

CANADIAN TRIP.

Investigation of killing of nineteen horses shipped from Carpenter, Iowa, to Weyburn, Saskatchewan, Canada.

On March 10th I received the following night lettergram:

Weyburn, Sask., March 9, 1912.

State Veterinarian:
Des Moines, Iowa.

Purchased fifty-seven horses from farmers in northern Iowa, mallein test applied before shipping by Assistant State Veterinarian McLeod, bill of health signed by Dr. Scott, condemned here for glanders by reacting mallein test; nineteen shot, others will be retested on March 14th; have proof from local veterinarians no clinical symptoms, have blood and heads of horses shot; could you send expert here by Thursday morning to protect horse industry in your state. All horses from three to seven years, sound; think test is unfair; who is best man whom to ship heads for analysis so report could be used in evidence if necessary; answer quick at my expense.

(Signed)

GEORGE BEISCHEL.

On receipt of the above lettergram I immediately wired Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, Washington, D. C., as follows:

Received the following today from Weyburn, Sask. (quoted the above lettergram); could you send Moeller to investigate and witness test Thursday? Answer.

While waiting for an answer from Dr. Melvin, I wired George Beischel, Weyburn, Sask., "Hope to witness test Thursday, keep blood, lungs, liver and heads of all horses killed. Will also ask Washington, D. C., to investigate."

On March 11th, I received the following telegram from Dr. Melvin:

Dr. J. I. Gibson, State Veterinarian,
Des Moines, Ia.

Moeller unavailable, instruct Beischel send blood nineteen horses here for serum tests, heads unnecessary; should additional horses react Thursday return them to United States in quarantine, collect blood each animal, ship here for diagnosis.

(Signed)

MELVIN.

On March 11th, after consulting Gov. B. F. Carroll, I started for Weyburn, Sask., taking with me Dr. C. H. Stange, Dean of the Veterinary Department at Ames. On arrival at Weyburn, March 13th, we discovered that the carcasses of the nineteen horses that had been condemned by the veterinarian in the employ of the Canadian Government, and killed by the mounted police, were still in a good state of preservation covered with waste at the nuisance ground at the edge of town. We telephoned the veterinarian in charge of sanitary work in the Province at Regina asking permission to hold a post mortem, which favor he could not grant us without consulting the Veterinary Director General at Ottawa, after some delay Dr. Rutherford granted us permission to make the post mortem, providing certain of his sanitary force were present to witness same.

At the end of the second day all was ready for the post mortem, which we proceeded to make. We posted six of the animals finding no evidence whatever of the existence of glanders. Canadian authorities conceding it was unnecessary to follow the post mortem further, it was abandoned with the statement on our part that we found no evidence of glanders, and nothing in the history of the horses to warrant their destruction.

The original Beischel shipment numbered fifty-seven head. The remaining thirty-eight were held in quarantine for retest; this being the third test it was not applied until thirty days after the retest that was made by the Canadian authorities. On this second retest, nineteen that had shown suspicious records in the previous test, passed an ideal test and were released, as were all others excepting five. These were finally retested and released, so there were no more animals killed after our visit there.

The whole history of the shipment of horses, beginning with the fact that they were purchased on farms around the town of Carpenter, Mitchell county, Iowa, and before being shipped were sub-

jected to the mallein test at the hands of Dr. J. H. McLeod, Charles City, Iowa, who is registered with the Bureau of Animal Industry, and given authority to make tests on shipments to Canada, to the final release of the last horse from quarantine, shows that the killing of the nineteen horses was entirely unwarranted, as their test in Iowa by Dr. McLeod showed no suspicion whatever of the existence of glanders in any animal in the shipment, and their final history until all were released, also showed no animal presenting any clinical symptoms of glanders.

It is the belief of Dr. Stange and the writer that there never was any infection of glanders in this shipment of fine young Iowa horses.

Mr. Beischel who suffered this great loss, and the loss from quarantine of his horses and premises, which put him out of the horse business for the year, has filed a claim for loss and damage before the Canadian Government with, we believe, good prospects of recovering. Mr. Beischel and the people of Saskatchewan generally felt very grateful to the Governor of Iowa, and this Department for the investigation made, and shipments from this state to Canada since that time have been received with less question, and emigrants from this state have received better treatment and have been subjected to less delay at the port of entry than prior to our visit there.

DOURINE.

On May 15, 1911, we received a letter from Dr. Wm. Readhead of Lenox, Iowa, stating that some disease apparently contagious or infectious affecting stallions and mares existed in Platte township, Taylor county, and that the township trustees desired an investigation by this Department. We at once communicated with Dr. A. H. Quin, Assistant State Veterinarian, Creston, Iowa, requesting him to proceed to Lenox and consult with Dr. Readhead and examine the stock in question.

On May 19th, we received a report from Dr. Quin to the effect that he believed the disease in question to be dourine. We at once communicated with Dr. S. H. Bauman of Birmingham, Iowa, who had charge of the quarantine work in a previous outbreak of dourine in Van Buren county requesting him to go at once to Creston, and in company with Dr. Quin to examine the animals in question with a view to confirming the diagnosis. Dr. Bauman did so and after careful examination of several animals agreed with

the diagnosis of Dr. Quin, and on May 24th Drs. Quin and Bauman reported in person at this office.

We then took steps to enlist the aid of the Bureau of Animal Industry at Washington, D. C. They responded promptly and have continued with us in the work up to the writing of this report.

A number of stallions and mares have been destroyed. The following letter from Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, Washington, D. C., under date of September 25th gives an accurate description of the method of procedure in connection with the work:

September 25, 1912.

Dr. J. I. Gibson, State Veterinarian,
Des Moines, Iowa.

Sir—The bureau was first advised of the presence of this outbreak of dourine in Iowa through your letter of May 24, 1911, stating that the affection had been diagnosed by Dr. Quin of Creston, Iowa, and his diagnosis confirmed by Dr. Bauman of Birmingham, Iowa, and requesting assistance in eradicating the same.

In accordance with such request Dr. Enos L. Day, veterinary inspector of the Bureau at Chicago, was directed to proceed to Creston and investigate and make a complete report of conditions.

Under date of June 1st, Dr. Day reported that as a result of the examination of a number of animals at Clearfield, Sharpsburg, Gravity and Denison, Iowa, he considered the symptoms very strongly indicative of dourine, and that you had placed all suspicious animals under State quarantine. With a view to confirming Dr. Day's diagnosis, Dr. E. T. Davison, veterinary inspector, Athenia, N. J., was directed on June 3, 1911, to proceed to Creston for a conference with yourself and Drs. Quin and Bauman.

Dr. Davison's preliminary report was made on June 13th. His diagnosis of dourine was confirmed on the part of the Bureau at a conference at which the Chief of the Bureau and the Chief of the Pathological Division were present, and it was then decided to purchase some of the affected animals and ship them to Washington for experimental purposes.

Dr. A. W. Miller, who had been placed in charge of the Bureau work of eradicating the disease, was accordingly directed to purchase four of these animals and forward them to the Bureau Experiment Station at Bethesda, Md.

One of the animals died enroute, but as a result of examinations of the others which arrived at the above station, the Bureau pathologist was successful in determining the presence of trypanosomes in serum obtained from one of the mares, thus establishing the identity of the disease beyond question.

In the meantime Dr. Miller had been directed to arrange with the various owners for the slaughter of infected animals, paying for the same upon an equitable basis, it being considered essential in order to success-

fully combat and stamp out such a disease that every possible source of infection be absolutely eliminated.

In accordance with such plan some thirteen stallions and mares have been destroyed within the state and post-mortem examinations made, tending in all cases to confirm the diagnosis. The Bureau records indicate that some one hundred exposed animals showing no evidence of the disease are at present being held under State quarantine in Iowa. It is probable that arrangements will be made in the near future to detail Dr. Miller to act in co-operation with your office in securing blood serum from all such animals for the purpose of subjecting the same to the complement fixation test.

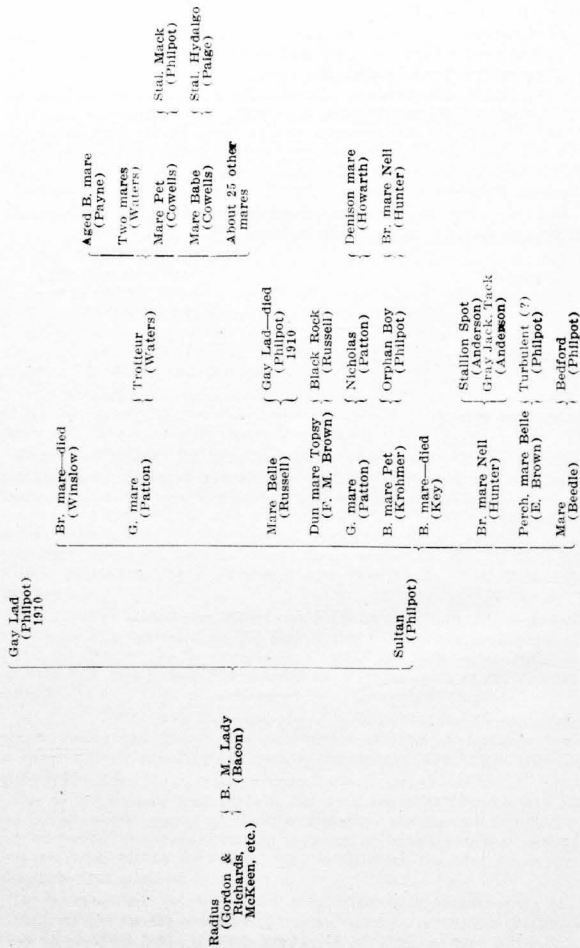
I am enclosing herewith a tabulated outline indicating the apparent origin and spread of the outbreak in Iowa.

Very respectfully,

A. D. MELVIN,
Chief of Bureau.

(Signed)

DIAGRAM OF DOURINE OUTBREAK TAYLOR AND RINGGOLD COUNTIES



TUBERCULOSIS.

The subject of tuberculosis as it affects the cattle and swine industry of the state is an all important question and whilst no attempt has been made at an organized campaign against tuberculosis, yet this department has tested a great many cattle and we are pleased to say that the percentage of tuberculosis found in bovine herds at present is no higher than a decade ago, in some instances a marked improvement has been made. The repeated testing of the state herds together with the remodeling of the barns at the state institutions and the judicious use of disinfectants at various periods has not only reduced the percentage of tuberculosis to the merest minimum in some herds but has fully demonstrated in others that herds quite seriously affected with tuberculosis may be cleaned and kept clean as regards this disease.

Apart from the testing of state herds it has been the policy of this department, upon receiving notice from an inspector in charge at any abattoir where Iowa hogs and cattle have been slaughtered, to go to the premises from whence the cattle or hogs were shipped to investigate the conditions there. When we find infection in a bovine herd we have invariably applied the tuberculin test. In this way we are trying to trace the disease to its source.

Tuberculosis whilst not apparently on the increase in the bovine herds seems to be increasing rapidly in swine. The following letter from Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, Washington, D. C., gives the government figures concerning the number of hogs found tubercular on slaughter at the abattoirs within the state:

Washington, D. C., Nov. 27, 1912.

Dr. J. I. Gibson, State Veterinary Surgeon,
Des Moines, Ia.

Sir—Replying to your letter of the 11th inst., our reports show that out of 2,555,576 hogs inspected at 12 stations in Iowa during the fiscal year 1912 the number of cases of tuberculosis found was 167,677. Some of these hogs no doubt came from adjacent states, but I believe that most of them were purchased in Iowa. Undoubtedly most of these cases were developed in the hogs through infected cattle by feeding infected dairy products, following infected cattle in feed lots, and feeding dead and infected cattle to hogs.

Very respectfully,

(Signed)

A. D. MELVIN,
Chief of Bureau.

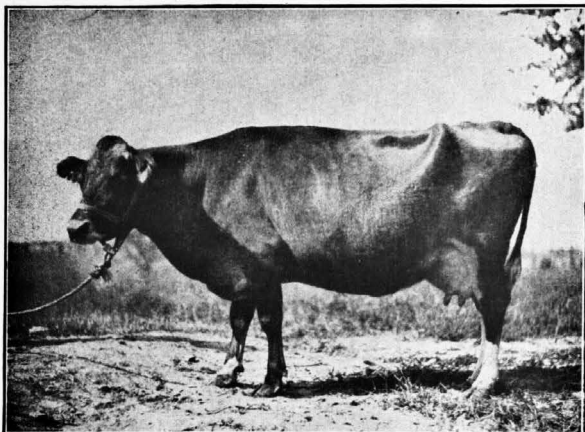
Having talked with a great many breeders and shippers of swine they have invariably expressed their opinion that more than half

of our marketable hogs were slaughtered at abattoirs outside of the state. The figures contained in the above letter show $6\frac{1}{2}\%$ of the hogs slaughtered affected more or less with tuberculosis. This $6\frac{1}{2}\%$ at an average weight of 250 lbs. figured at 7c per lb. shows that we marketed in Iowa \$2,934,347.50 worth of pork infected with tuberculosis. It is safe to double these figures and to estimate that we produced and sent to market not less than \$6,000,000 worth of pork infected with tuberculosis. It is readily explained by the fact that most hogs receive their tubercular infection from following after the cattle. This is true not only of the ordinary herd of breeding cattle but it is also true of the steers in the feed yard. We believe the time is not far distant when every breeder and feeder will realize the importance and necessity of testing not only his breeding cattle but his steers in the feed yard as well before allowing any hogs to run after them.

Without prolonging the discussion on this subject further we present herewith a number of cuts which we obtained from the Cattle Commissioner of the state of Vermont and which were originally prepared by the Department of Agriculture at Washington, D. C.

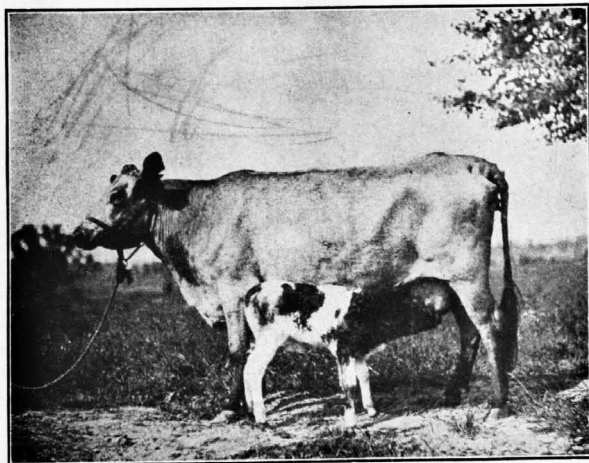


No. 1.—The cow shown in the above picture is apparently healthy. She does not cough, her appetite is good, she seems strong and vigorous and has a naturally large udder. At the time the picture was taken she was kept in a field with other cows but her tuberculosis was not detected until she had been passing large numbers of tuberculous germs from her body at least three years. Since it first became known that the cow is diseased she has given birth to four calves.



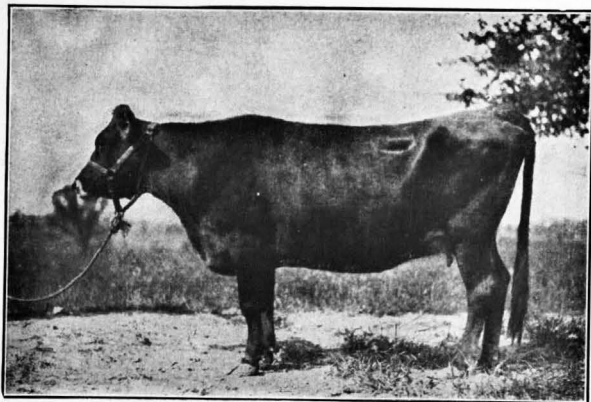
No. 2.—The cow shown in the above picture is apparently healthy. She does not cough, her appetite is good, she gives a large quantity of milk and is in excellent general condition for a dairy cow. At the time her picture was taken it was known that she had been affected with tuberculosis at least four years and that she had been passing tuberculosis germs from her body at least three years.

The mixed dung of this cow and of the cow shown in the next picture caused tuberculosis in hogs that were permitted to eat it.



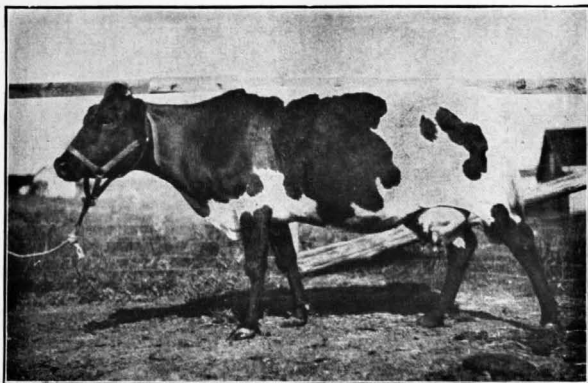
No. 3.—The cow shown in this picture is apparently healthy. She does not cough, her appetite is good and her general condition is excellent for a milk cow that has recently calved. At the time her picture was taken it was known that she had been affected with tuberculosis at least 4½ years and that she had been passing tuberculosis germs from her body for a long time. The calf by her side is the fourth she has produced in the last four years. Small quantities of her dung caused tuberculosis in guinea pigs when it was placed under their skin.

The mixed dung of this cow and of the one shown in the last picture caused tuberculosis in hogs that were permitted to eat it.



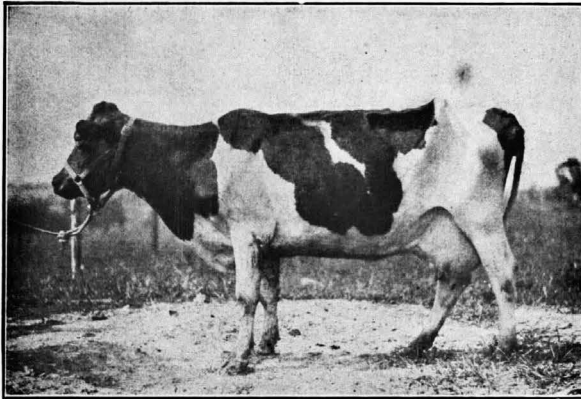
No. 4.—The cow shown in this picture is in excellent condition for an animal that has been affected with tuberculosis more than four years. Three years before her picture was taken tuberculosis germs were found in her dung and hogs that were permitted to eat her dung became tuberculous.

About 2½ years before her picture was taken it was found that the milk of the cow contained tuberculosis germs. There was nothing visible about her udder to show that it was diseased and it was only after two months of the most careful tests of her milk that an expert could tell from which of the four quarters the disease germs were being passed.



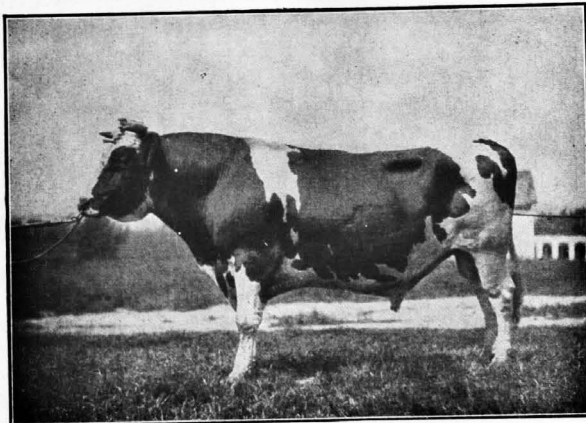
No. 5.—A long standing advanced case of tuberculosis, with large tuberculous swellings in the udder. A year before the above picture was taken the cow was discovered to have udder tuberculosis. This discovery was made by injecting some of her milk into guinea pigs; there was nothing in the appearance of external condition of the udder at first to show that it was diseased.

How very dangerous cows like the one in the picture are may be judged from the fact that calves that are permitted to drink milk from tuberculous udders only a single time are almost certain to have tuberculosis. A small amount of milk from cows like those in the above picture No. 4, mixed with the milk of other cows, will make the whole of it dangerous for both persons and lower animals.

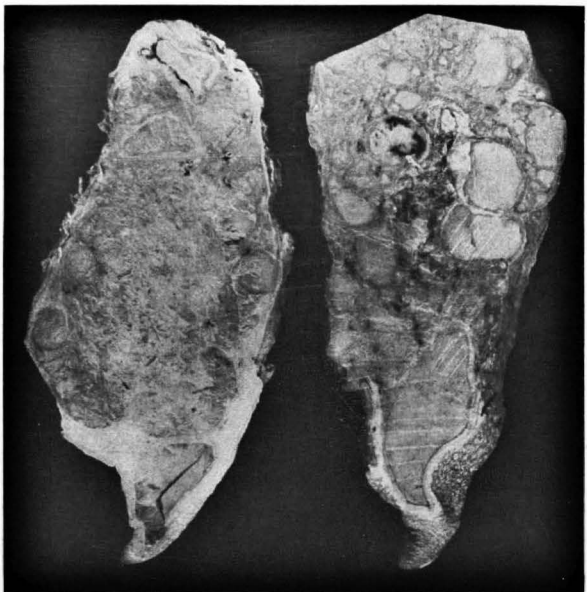


No. 6.—The cow in the picture is an advanced case of tuberculosis. She is very weak and thin, but is a heavy milker and in her weak condition continues to give an abundant quantity of milk.

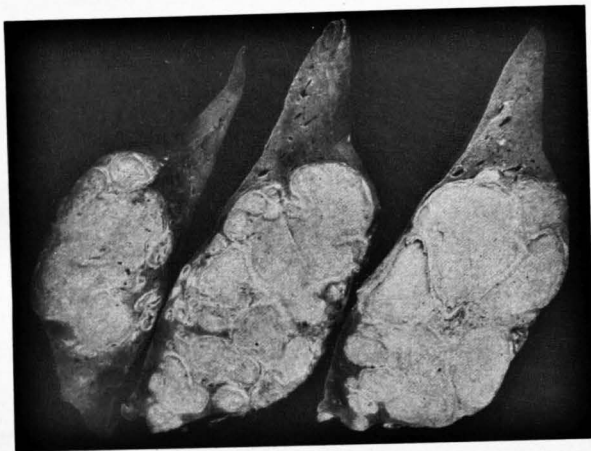
Cows of this kind are unfortunately too numerous in dairy herds. The temptation to keep such cows and to use their milk is greater than some persons can resist. Such cows are a great danger to other animals that may come in contact with them and the use of their milk in a raw state is very apt to cause tuberculosis alike in young persons and lower animals.



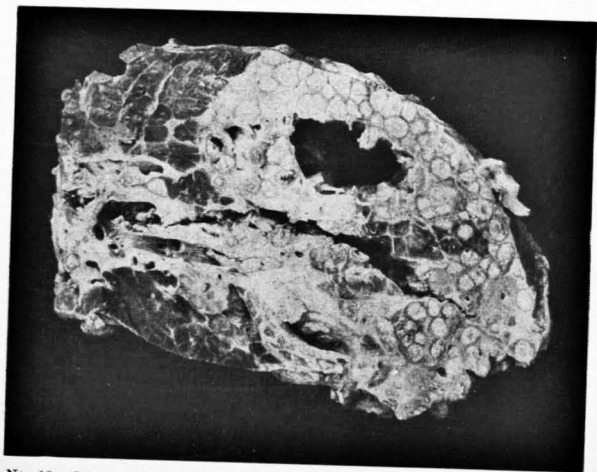
No. 7.—The picture of the bull was taken nearly four years after he was known to be tuberculous and three years after it was known that he was passing tuberculous germs from his body. Directly after his picture was taken he was killed, and in addition to numerous nodules of tuberculosis in his lungs it was found, when his body was opened, that nearly all the lymph glands connected with his bowels and liver were diseased. At the time of his death the bull weighed 1,850 lbs., and his apparent condition is excellent for an animal that was fed only rough forage and no grain in any form. The presence of tuberculosis in his body would never have been suspected before his death without the help of the tuberculin test.



No. 8.—Sections of a tuberculous udder from a cow. Practically the whole of the udder from which the sections were taken was changed into tuberculous material. Long before tuberculous udders become as badly diseased as the condition shown in the picture the milk contains large numbers of tuberculosis germs and is very dangerous. A tuberculous udder may contain only a single small tuberculous swelling through which the milk becomes dangerously infected with tuberculosis germs.



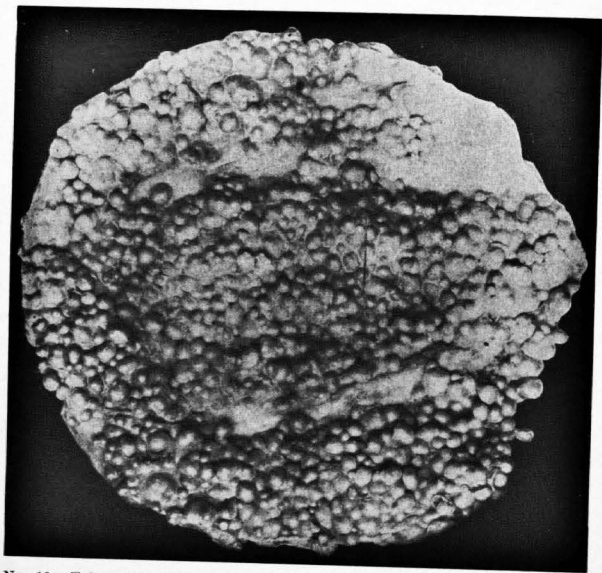
No. 9.—Sections of tuberculous liver from a cow. The light colored parts in the picture show the disease.



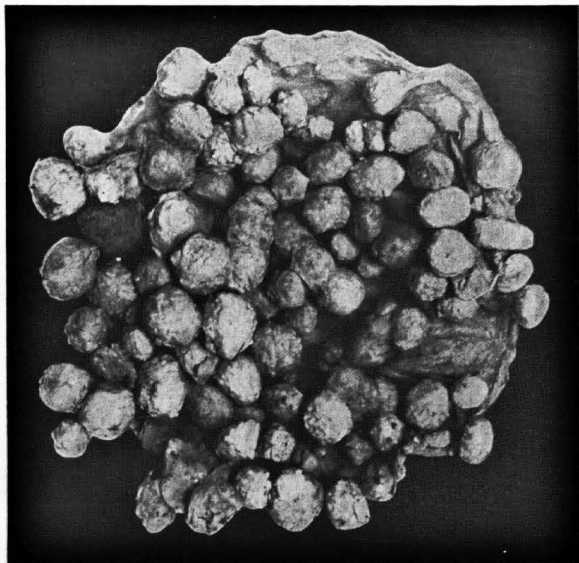
No. 10.—Section of a tuberculous lung from a cow. The picture shows numerous, nearly round tuberculous nodules, one large tuberculous cavity, and several air tubes that extend from tuberculous nodules that are softening and breaking down. When tuberculous nodules in the lungs break down the material of which they are composed, and which contains millions of tuberculosis germs, is coughed up. Some of the germs are sprayed from the mouth and others are swallowed and discharged with the dung.



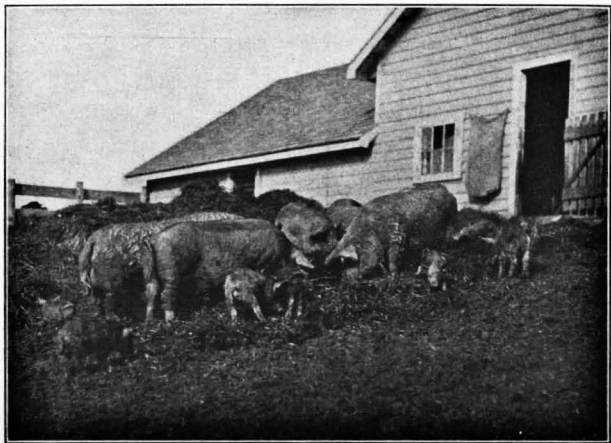
No. 11.—Sections of a tuberculous heart from a cow. The light parts are tuberculous. The heart muscle is greatly reduced in volume and is prevented from working properly by the tuberculous material by which it is surrounded. The picture shows how badly an animal may become diseased with tuberculosis before it dies. One reason why tuberculosis is so common among persons and cattle is that many persons and cattle pass tuberculosis germs from their bodies before any one knows or suspects they have tuberculosis and can give the disease to others.



No. 12.—Tuberculosis of the omentum or caul or the net covering the bowels. This form of tuberculosis is known as Pearl Disease, because the tuberculous tumors look like pearls.



No. 13.—Tuberculosis of the omentum or caul or the net covering the bowels. The picture shows another form of Pearl Disease, in which each nodule is about the size of a grape and is composed of a large number of smaller nodules which have grown together.



No. 14.—A common source of tuberculosis among hogs.

RESULTS OF TESTS ON STATE HERDS.

	Number tested	Number reacted	Number suspicious	Number healthy
Eldora, October 11, 1911.....	46	4	0	42
Council Bluffs, October 2, 1911.....	18	0	0	18
Independence, October 11, 1911.....	80	2	0	77
*Independence, November 29, 1911.....	21	4	2	14
Knoxville, November 29, 1911.....	35	0	0	25
Mitchellville, October 19, 1911.....	28	0	0	28
Cherokee, October 18, 1911.....	107	0	0	107
Glenwood, October 25, 1911.....	91	1	0	90
Clarinda, October 27, 1911.....	104	2	0	102
Oakdale, retest, November 16, 1911.....	57	0	0	57
Davenport, November 17, 1911.....	49	8	4	37
Mt. Pleasant, November 15, 1911.....	75	3	3	69

*New cattle.

HOG CHOLERA.

During this biennial period farmers of Iowa have suffered heavy losses as the result of wide spread outbreaks of cholera. Losses from this disease we expect will be reduced to the minimum in the near future when the state becomes thoroughly organized to combat, control and eradicate cholera. This we believe can be accomplished by the direct application of sanitary regulations and quarantine together with the use of anti hog cholera serum.

The following article written by Dr. D. E. Baughman, Assistant State Veterinarian, Ft. Dodge, Iowa, will prove entertaining and instructive to all parties interested in the swine industry of Iowa.

THE METHOD OF USING ANTI-HOG CHOLERA SERUM.

In order to properly understand the method of using this serum, it would be well to first understand the method of making it. In order to make potent serum that has the power to protect a hog against cholera, it is necessary to have cholera pigs to draw the blood from. The younger the diseased pig that the blood is taken from and the more acute the strain, the more virulent the blood will be, and the more virulent the blood is that is used for hyper-immunizing, the more potent the serum will be.

It is impossible to make a potent and reliable serum where pigs are used to furnish virulent blood, with unknown form and virulency of disease, as is done with some of the serum firms, that depend entirely upon the supply of their diseased pigs from the markets or large packing plants. Although this method has its advantage, in that this diseased blood can be had for a small sum, if they pay for them at all. These plants can make serum and sell it for much less than where it is made by the original method, as was intended by its inventors. But in order to make serum that is really potent and that will protect a hog from cholera, it is necessary that the strain of disease be bred up to the highest point of virulency.

This can be done much as corn is bred up. In breeding corn the farmer picks the best ears he can find for planting, he looks for a large ear, with the right color, straight rows, deep kernels, well filled at the end, and one that is well matured. So is it with the disease under the intentions of Dorset, McBride & Niles method. First you use pigs that you know are susceptible for you should know their source, then you use blood from the most virulent strain, for starting the disease, for instance when you kill six or eight a day, you use the blood for starting from the pig that has the disease in the most acute form, one that comes down in the shortest period of time, and the one that shows the best lesions. If they come down in seven or eight days all the better, but if they come down in thirteen or fourteen days the blood should not be used for hyper-immunizing. A pig from four to six months old will produce blood of a more virulent strain than one that is ten or twelve months old. The older pigs seem to acquire more or less natural immunity, therefore it is best to use younger pigs for this purpose.

This method was only discovered a few years ago by Doctors Dorset, McBride and Niles of the Bureau. At first it was looked upon with considerable suspicion even by the veterinary profession and a very few gave it much thought and study. Only in the last two or three years have the veterinarians realized its value and the importance of this branch of the veterinary practice. To have the best success in using serum it is absolutely necessary that a man take the temperature of all the hogs that one expects to vaccinate even when you do not suspect any infection in the herd.

I have known a number of cases where the veterinarian was called in and although the herd was not believed to be diseased, yet upon examination they have been found to have very high temperature. If these hogs had been vaccinated by the simultaneous method under these conditions the results would have been bad, as the farmer would have claimed that the infection was started by the vaccination. Where you take the temperature in these herds you will find that some of them have *temperatures running from 104 to 106 degrees F. There is no doubt that in some of these cases where the simultaneous method was used in a supposed healthy herd, and where cholera followed, that the infection was in the herd at the time of vaccination. The precaution of taking the temperatures would have shown the herd was already infected and relieved the veterinarian of this embarrassing position and also maintained the reputation of the serum.*

Where a herd is already infected temperatures should be taken as before stated. Each hog with a normal temperature should be marked with one mark, with a scissor across the back, but where the temperature is above 104 one should place two marks, these marks made with a scissor will last for three or four weeks, which will enable the farmer to keep track of those that were already diseased.

The temperature of a hog varies much and one should be guided by the condition under which the temperatures are taken. In warm weather the temperature may run up to 105 and yet the hog be in normal and healthy condition, and also if they are subjected to considerable exer-

cise the temperature will rise to what would seem abnormally high, therefore the temperatures under these conditions should not be confounded with a diseased condition that you find in cholera. Whenever it is possible the hog should be confined in close quarters and the temperature taken standing. Where you catch each pig and lay them down to take the temperature it causes considerable excitement which with the exercise it would cause while catching them, would without a doubt raise the temperature. It is well to use a thermometer with a good size bulb when after being well vaselined it would be easily used without causing an irritation of the mucous membrane of the rectum.

One of the most important things to find out in vaccinating a diseased herd, is to be sure that the existing disease really is cholera. That can usually be done by holding post mortem, but in some cases one or two post mortems may not reveal cholera lesions. In this case you must guard yourself in giving your prognosis, for anti-hog cholera serum will not prevent any other disease than cholera. In simultaneous vaccination you usually get more or less reaction, pigs thus treated may be able to transmit the disease to susceptible or non-immune hogs, and in this way it may spread the infection or start new centers of infection. So it is a question as to whether it is advisable to use this method or not. In seasons when cholera is prevalent and especially if the disease has broken out in your immediate neighborhood, then the question of starting new infectious centers is not so important.

Cleanliness throughout the whole operation is very essential in administering serum to reduce the danger of septicemia and abscess formation. Your syringe should be taken apart, your needles and vessels for using serum should be sterilized by being boiled in water. If you are using a syringe with a rubber plunger, the plunger should be disinfected with a five per cent solution of phenol or some disinfectant that will not deteriorate the rubber. The operator's hands should be well cleaned and kept clean throughout the entire operation. He should not attempt to catch any pigs or touch anything with his hands except the syringe. There should be plenty of assistants to do this part of the work. The operator should have plenty of clean warm water at hand. He should have two men to catch the hogs, one man to wash and disinfect the skin at the point of injection, and he should have two glass vessels with metallic covers to prevent the wind from blowing dust and dirt into them. The syringe best adapted for vaccination is a twenty or thirty c. c. with a glass barrel, and it should be tested with warm water before being used to see that it is in good working order, twenty c. c. of serum is about all that should be injected into one place, and I think it might be better to only inject ten c. c. in one place, by partly withdrawing the needle and inserting in another direction. This way you would not need to make but one puncture lessening the danger of infection. I would advise either one of two locations to inject the serum, one is the auxiliary space between the front legs, and the other on the inside of the thighs between the hind legs. I do not think it is necessary to inject deep into the muscles. Absorption takes place just as readily where it is injected under the skin into

the subcutaneous tissue, and in this way you will not have so much lameness as where the injections are made deep into the muscles, by this method of injecting it leaves a bad spot in the ham, this the packers object to as the Government inspectors compel them to cut out these blemished spots which causes quite a waste to the expensive part of the meat.

It has been the custom of some veterinarians to vaccinate old hogs back of the ears by placing a rope noose or loop around the upper jaw, back of their tusks, then fastening the other end of the rope to some strong object. They will lay their entire weight back against the rope, but will not struggle much. This is also a very easy and safe way of handling pregnant sows. After having your hogs confined in this manner, they may be very easily vaccinated behind the ear in the loose skin. This location, however, should be more thoroughly washed and cleansed than where the injection is made under the belly, for at this point the skin seems to have more sebaceous glands than any other part of the body. The depression behind the ears makes it harder to get at and I find that you will have more abscesses by injection at this location than at any other point. I therefore only recommend this method in pregnant sows. I think where abortion follows it is more the cause of rough handling than the effects of the serum.

I think the time is at hand when every veterinarian should lend his aid to have a national law passed requiring every serum plant to be under inspection, compelling each plant to make serum under the government instructions, giving the inspectors power to collect serum at any time from stock on hand that is ready for the market. This should be welcomed by every legitimate serum concern that aims to sell only potent serum.

Misuse of serum as has been practiced by some veterinarians (if not corrected) will cause a reaction among the hog raisers that will discredit the serum whenever it is used. For instance, one man would vaccinate the sick one, as well as the well ones, and guarantee them all to live for one year; others would vaccinate those that they knew were sick for no other reason than to consume as much serum as possible being paid by the cubic centimeter for their work. These veterinarians, I am so glad to say, are only a small minority, yet there is considerable carelessness among veterinarians in general, in regard to vaccinating every thing saying that they are paying for the serum, and it will be their loss if they die. In such a case a veterinarian may be excused for doing it, providing he is vaccinating in a neighborhood where the farmers understand its use. But I think where one is just beginning to vaccinate in a new and skeptical neighborhood, he had better not vaccinate anything that shows sickness or has a high temperature, for the sick ones will usually die and they will count this against the serum, which will materially cut down the percent of hogs saved, and the percent that they saved will be used as a basis to figure the profit they have obtained by vaccinating.

Don't vaccinate hogs that are sick or show high temperature.

Don't vaccinate with serum alone, then put sick ones with those vaccinated, unless you can confine them all in a space or pen, so that all will receive the infection at nearly the same time.

Don't pour more serum in your vessel than you will use, for pouring remaining remnants back into the bottle is liable to contaminate the serum and endanger its use.

Don't pour virulent blood away if you have any left after the simultaneous method. Any remaining blood should be destroyed by fire.

Don't use syringe, needles, or glass that has not been sterilized or disinfected.

Don't vaccinate infected herds, without marking those that show high temperatures. You had better take at least some temperatures in all herds.

Don't underestimate the weight of hogs in vaccinating. You are not liable to give too much serum, but you may give too small a dose.

Don't give your patrons too much encouragement when you are vaccinating infected herds.

Don't use the simultaneous method in an all ready infected herd.

INTERSTATE SHIPMENTS OF LIVE STOCK.

The Animal Health Commission at its first meeting in July, 1911, formulated rules 18 and 19 governing the importation of live stock into Iowa. Most states have similar importation requirements and are using a uniform health certificate approved by the United States Association of Live Stock Sanitary Boards. This certificate is made in triplicate, the original accompanies the shipment and is attached to the way bill, the duplicate is forwarded to the sanitary authorities of the state to which the shipment is billed, the copy is filed in the office of the sanitary authority of the state in which shipment originates. This method thoroughly carried out gives this office a record of all export and import shipments with details as to the number and kind of animals contained in each shipment.

We have gathered some statistics on this subject that will prove interesting. From January 1, 1912, to July 1, 1912, there was reported at this office 1,755 export shipments. Almost all of these are emigrants. Considering each shipment as representing an emigrant family of 5, during this six months period mentioned we have sent out from Iowa 8,775 people. During the same period we have record of 1,044 import shipments, 233 of which were stock cattle, leaving 811 immigrant shipments representing a family of 5 persons we received into the state 4,055 people as against 8,775 people exported which leaves a balance of 4,720 against our population in a period of six months. Some might consider these statistics as evidence against the state of Iowa but we feel more like congratulating ourselves as Iowans upon the fact that conditions

are so good in this state that so many people can accumulate sufficient money and live stock to move to other states and buy larger tracts of cheaper land.

In order to show just where most of our emigrants go and from what states we receive most of our immigrants we are producing herewith in tabulated form the various states, the first showing the kind of animals exported and to what states they have gone. The second table showing the class of animals imported and the states from whence they came.

LIVE STOCK EXPORTED FROM THE STATE OF IOWA BETWEEN JANUARY 1, 1912,
AND JULY 1, 1912.

TO	Horses			Cattle		Hogs	Sheep
	Broken	Un-broken	Mules	D. & B.	Stock-ers		
Alabama	2						
Arizona	3			27			
Arkansas	16			3			
California	39			5			
Colorado	104		4	140		19	
Connecticut							
Delaware							
Florida							
Georgia							
Idaho	31		1	37		14	
Illinois	47			50		3	
Indiana	4			11		22	
Kansas	158		3	102		1	
Kentucky							
Louisiana	5			6			
Maine	101						
Maryland							
Massachusetts							
Michigan	7			15			
Minnesota	2,268	1	69	1,315	22	563	714
Mississippi				1			
Missouri	196	2	3	129		20	
Montana	596			37		47	
Nebraska	675	34	34	615		211	
Nevada							
New Hampshire							
New Jersey							
New Mexico	14			2			
New York	15			5		1	
North Carolina							
North Dakota	550	42	11	122		40	6
Ohio							
Oklahoma	37		2	7		10	
Oregon	29			2			
Pennsylvania				4			
Rhode Island							
South Carolina							
South Dakota	1,122			85	739	229	48
Tennessee	2			1			
Texas	42		8	13		8	
Utah	48			2			
Vermont							
Virginia	4			1			
Washington	35			5			
West Virginia				1			
Wisconsin	541		19	147		43	
Wyoming	69		6	140		31	
Canada	660		22	5			
Totals	7,360	79	306	3,851	22	1,298	770
Total							13,686

LIVE STOCK IMPORTED INTO THE STATE OF IOWA BETWEEN JANUARY 1, 1912,
AND JULY 1, 1912.

FROM	Horses		Mules	Cattle		Hogs	Sheep
	Broken	Un-broken		D. & B.	Stock-ers		
Alabama							
Arizona							
Arkansas							
California	2						
Colorado	121		25	19			
Connecticut							
Delaware							
Florida							
Georgia							
Idaho	6						
Illinois	305	24	98	197		36	
Indiana	3						
Kansas	135	8	66	63	30		
Kentucky				1			
Louisiana							
Maine							
Maryland							
Massachusetts							
Michigan	2			15		6	
Minnesota	159	2	10	170	10,919	4	4
Mississippi							
Missouri	289	4	85	128	94	2	
Montana	3	94	2				
Nebraska	712	94	102	276		88	
Nevada							
New Hampshire							
New Jersey							
New Mexico	7		1	31			
New York							
North Carolina							
North Dakota			2	11		4	
Ohio	63			58			
Oklahoma	33		26	8			
Oregon							
Pennsylvania							
Rhode Island							
South Carolina							
South Dakota	717	70	44	225		42	8
Tennessee					21		
Texas	31	59	4				
Utah							
Vermont							
Virginia							
Washington		68					
West Virginia	1						
Wisconsin	29			109		6	
Wyoming			3				
Canada	9						
Totals	2,712	269	468	1,414	11,064	182	8
Total							16,117

ANIMAL HEALTH COMMISSION.

The first Animal Health Commission was appointed by Governor B. F. Carroll. The following gentlemen constituting its membership: Krank Kinsley of McGregor, Iowa, representing the dairy interests; C. A. Saunders, Manilla, Iowa, representing the beef interests; Dr. G. W. Blanche, Belle Plaine, Iowa, and Dr. Tom Downing, Washington, Iowa, being the two veterinarians appointed.

Under the Animal Health Commission act the State Veterinarian is made chairman and executive officer of the Commission.

The Commission met first in July, 1911, and formulated rules and regulations for the prevention and spread of diseases among domestic animals, which rules have been amended and appear in this report.

Rule 18 referring to the importation of live stock into the state of Iowa is serving as a safeguard against the importation of horses affected with glanders and cattle affected with tuberculosis, also hogs affected with cholera.

Since the adoption of the rules many instances have come to light where under the application of the rules the animals intended for shipment into Iowa have been found diseased and therefore the shipments prohibited. The application of Rule 19 to shipments arriving in the state without proper health certificate has also brought to light diseased animals that had already been shipped into the state and were destroyed after being tested in compliance with the rule. We believe the strict application of these rules will save the farmers of the state a large percentage of the loss heretofore sustained as the result of the importation of diseased live stock.

We produce herewith a copy of Chapter 115, laws of the Thirty-fourth General Assembly, which sets forth the duties and powers of Animal Health Commission and the Veterinary Examining Board connected therewith.

We believe a careful study of this law and the rules formulated by the Animal Health Commission will serve to commend this legislation to all who are interested in the success of our great live stock industry in Iowa.

Chapter 115.

COMMISSION OF ANIMAL HEALTH.

H. F. 329.

AN ACT to abolish the state board of veterinary medical examiners, to transfer the powers and duties of said board to the state veterinary surgeon, and to establish a commission of animal health. (Additional to chapter fourteen-A (14-A) of title twelve (XII) of the supplement to the code, 1907, relating to the practice of veterinary medicine, surgery and dentistry.)

Be It Enacted by the General Assembly of the State of Iowa:

Section 1. State board of veterinary medical examiners abolished—powers and duties transferred. That the board known as the state board of veterinary medical examiners is hereby abolished, and all of the powers and duties thereof are hereby transferred to and enjoined upon the state veterinary surgeon, except as hereinafter provided. All of the books, documents, records, stationery and office equipment now in possession of the board or of any officer or employe thereof shall, upon the taking effect of this act, be turned over to the state veterinary surgeon.

Sec. 2. Commission of animal health—how constituted and appointed—terms. There is hereby created a commission to be known as a commission of animal health, which commission shall consist of the state veterinary surgeon, who shall be the chairman and executive officer thereof, two veterinarians and two stock raisers, all of whom shall be appointed by the governor. The veterinarians shall possess the same qualifications required for the state veterinary surgeon. One such veterinarian shall be appointed to serve until June 30, 1912, and one until June 30, 1913, and as their terms expire their successors shall be appointed for three years. The state veterinary surgeon shall be appointed to serve until June 30, 1914, and thereafter his term shall be three years. The other members of the commission shall be appointed one to serve until June 30, 1912, and the other until June 30, 1913, and as their terms expire their successors shall be appointed for a term of two years.

Sec. 3. Meetings—rules and regulations for prevention and spread of disease among animals. The commission shall hold at least two meetings each year, one in July and one in January, at the office of the state veterinary surgeon, and may meet at such other times and places, in the state, as may seem necessary. It shall have the power and authority to make such rules and regulations as it shall deem necessary for the prevention, suppression, or against the spread of any contagious or infectious disease among animals in or being driven or transported through or brought into the state, and may provide for quarantining against animals thus diseased or that have been exposed to others so diseased, whether within or without the state. When such rules and regulations have been submitted to and approved by the executive council they shall be published and enforced by the veterinary surgeon and in the performance of his duties he may call to his assistance any peace officer.

Sec. 4. Examining Board. The state veterinary surgeon and the two veterinarians upon the commission shall constitute a board for the examination of applicants to practice veterinary medicine, surgery and dentistry in the state.

Sec. 5. Compensation—expenses. The members of the commission, other than the state veterinary surgeon, shall receive as compensation for their service one hundred dollars each per annum, together with their actual and necessary traveling, hotel and other expenses and in addition thereto the veterinarians upon the commission shall receive one hundred dollars each per annum for their services as members of the examining board. All of which shall be paid upon vouchers duly approved by the executive council.

Sec. 6. Acts in conflict amended. All acts or parts of acts in conflict with the provisions of this act are hereby amended to conform to the provisions hereof.

Approved April 15, A. D. 1911.

The following rules have been adopted by the Animal Health Commission and approved by the executive council, in accordance with the provisions of the foregoing Act.

RULES AND REGULATIONS.

Office of the State Veterinary Surgeon,

Des Moines, Iowa, July, 1911.

Pursuant to authority granted by Chapter 115, Acts of the Thirty-fourth General Assembly of Iowa, the Commission of Animal Health, by and with the approval of the Executive Council, do hereby make and establish the following rules and regulations for the prevention and restriction of contagious diseases among domestic animals:

Rule 1. Whenever the State Veterinary Surgeon shall have knowledge of an outbreak of any contagious, infectious or communicable disease among domestic animals, he shall take such action as he may deem necessary for the prevention of the spread of such disease, and is authorized to call any peace officer, or other person, to aid him in the prosecution of his duties.

Rule 2. Whenever notice is given to the trustees of a township or to a local board of health, of animals suspected of being affected with any contagious, infectious or transmissible disease it shall be the duty of such township trustees or local boards of health to immediately require such suspected animals to be isolated and kept separate and apart from all other animals until released or quarantined by order of the State Veterinary Surgeon or some person acting by his authority.

Rule 3. An animal must be considered as "suspected" when it has stood in a stable with, or been in contact with, an animal known to be affected with a contagious, infectious or transmissible disease or if placed in a stable, yard or other inclosure where such diseased animals have been kept.

GLANDERS—FARCY.

Rule 4. No person owning or having the care or custody of any animal affected with glanders or farcy, or which there is reason to believe is affected with said disease, shall lead, drive or permit such animal to go on over any public grounds, uninclosed lands, street, road, public highway, lane or alley; or permit such animal to drink at any public watering trough, pail or spring; or keep such diseased animal in any inclosure, in or from which such diseased animal may come in contact with, or close proximity to, any animal not affected with such disease.

Rule 5. Whenever an animal affected with glanders shall die, or shall be killed, the body of such animal shall be immediately burned, or shall be covered with quick lime and buried not less than four feet deep without removal of the hide or any part of the carcass. As this disease is transmissible to human beings great care should be exercised in handling diseased animals or carcasses.

Rule 6. No animal diseased with glanders or farcy shall be deemed to have any property value whatever, and no appraisal thereof shall be made.

Reasons for Rule 6. Glanders is an incurable disease, and there is no warrant for expending public money in appraising property manifestly worthless, and which can be compensated for only at "its actual value in its condition when condemned;" also to prevent the introduction of diseased animals into the state, and the inoculation of worthless ones for speculative purposes.

Rule 7. It shall be the duty of the State Veterinary Surgeon to maintain quarantine on all animals affected with glanders until said animals have been destroyed by consent of the owners and carcasses disposed of in accordance with Rule 5 and the premises thoroughly disinfected.

Rule 8. In suspected cases of glanders and farcy the mallein, Straus', agglutination and precipitation tests shall be recognized as valuable aids to diagnosis.

TUBERCULOSIS.

Rule 9. Animals reacting to the tuberculin test shall be kept in strict quarantine at the expense of the owner; or destroyed on the premises; or slaughtered at a packing house where federal inspection is maintained, the owner to receive the price paid by the packing house, its actual value in its condition when slaughtered.

Rule 10. In suspected cases of bovine tuberculosis, the tuberculin test shall be recognized as a diagnostic agent.

ANTHRAX.

Rule 11. All animals affected with anthrax or exposed thereto and the premises upon which such diseased and exposed animals have been kept shall be placed in strict quarantine. The milk from such animals shall not be used for human or animal food. All animals dying or being killed on account of being affected with anthrax shall be immediately burned, together with all contaminated floors, mangers, feed racks, watering troughs, buckets, contaminated bedding, litter and soil and utensils that may have become contaminated.

BLACKLEG.

Rule 12. Upon the appearance of an outbreak of blackleg all calves and yearlings on said premises should be promptly vaccinated. All carcasses of animals dying of blackleg must be burned without removal of the hide.

RABIES.

Rule 13. It shall be the duty of any city or local board of health, or township trustees, whenever notice is given by the State Veterinary Surgeon, or person acting by his authority, of animals being affected with rabies or having been exposed to the disease, to require such animals to be isolated, tied up and kept separate from all other animals until released by order of the State Veterinary Surgeon. It shall also be the duty of said city or local board of health or township trustees, during such outbreak, to destroy all stray dogs or dogs owned by persons violating the rules of this section.

SCABIES—(Mange).

Rule 14. Whenever the State Veterinary Surgeon shall have knowledge of any horses, cattle, sheep or swine affected with scabies or mange it shall be his duty to place such animals in quarantine and require owners to dip such animals at such intervals and in such dips as the case may require.

PLEURO-PNEUMONIA.

Rule 15. All cattle brought within the state, from any county or parish within the United States where pleuro-pneumonia is known to exist, shall be subject to quarantine for a period of not less than sixty days.

ANIMALS REJECTED AT SLAUGHTER HOUSES.

Rule 16. So-called "piggy" or pregnant sows, boars and rejected cattle found in railway and packing house stock yards must not be sold nor delivered to farmers, but held subject to such quarantine as may be deemed necessary to prevent the communication of any contagious, infectious or communicable disease.

Rule 17. The flesh of pregnant animals shall neither be sold nor used for human food after the seventh month of pregnancy for cows and the tenth week for sows.

IMPORTATION OF LIVE STOCK.

Rule 18. The importation of live stock into the state of Iowa is hereby prohibited, except under the following conditions.

Section 1. All horses, mules and asses, over twelve months of age imported into the state of Iowa must be accompanied by a certificate of health, including a record of the mallein test, certifying that the animals described thereon have been inspected and mallein tested and found free from all contagious or infectious diseases. Such test and inspection to be made not more than thirty days prior to date of importation.

Sec. 2. All dairy and breeding cattle over six months of age imported into the state of Iowa must be accompanied by a certificate of health including a record of the tuberculin test, certifying that the animals described thereon have been inspected and tuberculin tested and found free from all contagious or infectious diseases. Such test and inspection to be made not more than thirty days prior to date of importation.

Sec. 3. All cattle other than those mentioned in Sec. 2, except steers and cattle for immediate slaughter, shall be accompanied by a certificate of health and an affidavit, certifying that the title of such cattle will not be transferred and that they will not be used for other purposes than feeding or slaughter without first notifying the State Veterinarian and having them subjected to the tuberculin test.

Sec. 4. All sheep and goats imported into the state of Iowa, except for immediate slaughter, must be accompanied by a certificate of health, certifying that they have been inspected and found free from all contagious, infectious or transmissible diseases.

Sec. 5. All swine imported into the state of Iowa, except for immediate slaughter, must be accompanied by a certificate of health, certifying that they have been immunized with Dorset-McBride-Niles anti-hog cholera serum not more than thirty days prior to date of importation when the serum alone is used and not less than thirty days prior to date of importation when the simultaneous method is used.

Sec. 6. Certificates and tests as herein required must be issued by a Federal, State or Assistant State Veterinarian or in lieu thereof the certificate may be made by a graduate veterinarian, if such certificate bear the approval of the State Veterinarian or authority having charge of diseases of domestic animals in the state where the shipment originates.

Sec. 7. Certificates shall be made in triplicate, the original certificate to be attached to the waybill for the shipment, the duplicate to be sent to the State Veterinarian at Des Moines, Iowa, and the triplicate to be forwarded to the State Veterinarian or live stock authority of the state from which the stock is being shipped.

Rule 19. Detention and Inspection—Quarantine. In lieu of an inspection certificate as required by Rule 18, live stock may be detained at a suitable stock yards or other enclosure within the state nearest the State Line, on the railroad or highway over which they are being shipped, driven or hauled and there examined at the expense of the owner, or may be shipped or driven to their destination under quarantine at the discretion of the owner, there to remain in quarantine until inspected and tuberculin or mallein tested at the expense of the owner, and released by the State Veterinary Surgeon. Such expense shall be a lien upon the live stock. Railroad or transportation companies are required to notify the State Veterinary Surgeon at Des Moines, Iowa, of any shipments of live stock entering the State of Iowa not being accompanied by certificates of health as required by Rule 18.

Rule 20. Township trustees and local health officers of towns, villages and cities are hereby authorized and instructed to seize and hold in quarantine all live stock in violation of above rules and to notify the State Veterinary Surgeon at Des Moines, Iowa. The expense of the quarantine and examination must be paid by the owner (or agent) of the quarantined animals as prescribed by law.

STOCK EXHIBITED AT FAIRS.

Rule 21. Rules 18 and 19 shall not be held to apply to live stock brought into the state from other states for the purpose of exhibition or racing at State, District or County Fairs; provided, that in the event that sales shall be made from such exhibition herds, to remain in the state of Iowa, such stock so sold shall first be submitted to inspection requirements set forth in Rule 18 before the sale is consummated and the stock shipped to destination.

Rule 22. It shall be the duty of the State Veterinary Surgeon to supervise the disinfection of all buildings, stalls and pens at the State Fair Grounds just prior to the opening of the State Fair and to disinfect hog pens and such other enclosures as he may deem necessary daily during the Fair.

Rule 23. All animals presented for exhibition at the Iowa State Fair and Sioux City Fair shall be subjected to examination by the State Veterinary Surgeon before entering the Fair Grounds, and to daily inspection during the Exhibition. Should any animal be found to be affected with any contagious, infectious or communicable disease it shall immediately be removed to a place of quarantine. The show pens or stalls in which such diseased animal or animals were kept must immediately be cleaned and disinfected under the supervision of the State Veterinary Surgeon.

Rule 24. The term "quarantine" shall be construed to mean the perfect isolation of all diseased or suspected animals from contact with healthy

animals, as well as the exclusion of all healthy animals from yards, stables, enclosures or grounds where suspected or diseased animals are or have been kept.

Rule 25. The State Veterinary Surgeon is hereby authorized and directed to co-operate with the United States Bureau of Animal Industry and may formulate and print instructions or rules pertaining to the prevention and spread of contagious diseases among domestic animals by order of the Animal Health Commission.

Rule 26. All hogs within the state of Iowa immunized by the double or simultaneous method of treatment against hog cholera shall be held in strict quarantine for a period of not less than thirty days.

Rule 27. All swine exhibited at State, County or other Fairs or exhibitions in the State of Iowa must be accompanied by a certificate showing that they have been immunized with Dorset-McBride-Niles anti-hog cholera serum not more than thirty days prior to date of such Fair or exhibition when serum alone is used and not less than thirty days prior to date of such Fair or exhibition when the simultaneous method is used.

Approved under the requirement of Section 3 of Chapter 115, Acts of the Thirty-fourth General Assembly. August 29th, 1911.

ASSISTANT STATE VETERINARIANS.

Name.	Address.	Commission Expires
Alcorn, H. A.	Adair	Oct. 18, 1915
Anderson, T. E.	Bedford	
Anstey, J. A.	Massena	
Adamson, A. A.	Newton	
Brown, I. C.	Afton	Oct. 27, 1914
Blanche, G. W.	Belle Plaine	July 11, 1914
Bauman, S. H.	Birmingham	
Baumont, L. C.	Britt	Jan. 13, 1915
Brodie, A. S.	Cedar Falls	June 15, 1914
Brooks, J. L.	Clinton	June 7, 1914
Button, P. G.	Cresco	July 31, 1914
Baldwin, A. F.	Creston	May 8, 1914
Baughman, D. E.	Fort Dodge	
Brazie, F. E.	Harlan	
Ballard, F. S.	Sibley	July 1, 1914
Baker, G. G.	Spencer	Aug. 25, 1914
Bunker, J. W.	Winterset	June 10, 1914
Barrett, L. F.	Cascade	June 5, 1916
Comers, H. W.	Bloomfield	Sept. 24, 1915
Chandler, T. W.	Davenport	June 8, 1914
Copeland, F. B.	Logan	April 1, 1914
Calkins, R. E.	Osceola	
Crawford, M. N.	Dallas	June 6, 1914
Delling, N. J.	Dallas Center	
Dodge, Geo. A.	Northwood	June 7, 1914
Downing, Thos.	Washington	June 5, 1914
Edwards, F. H. P.	Iowa City	June 8, 1914
Fullarton, W. R.	Dubuque	
Franks, J. E.	Indianola	Feb. 13, 1914
Flickinger, P. W.	Greenfield	April 19, 1915
Freed, O. F.	Huxley	Aug. 20, 1915
Goeder, W. J.	Osage	June 13, 1914
Gilliam, H. M.	Mason City	Sept. 9, 1914
Guinn, S. H.	Marengo	June 7, 1914
Gidley, Thos. W.	Malvern	July 28, 1914
Griffith, J. W.	Cedar Rapids	
Hull, J. A.	Burlington	June 8, 1914
Haxby, J. W.	Clarinda	June 7, 1914
Hollingsworth, F. W.	Council Bluffs	June 7, 1914
Harmon, B.	Decorah	June 10, 1914
Howe, E. E.	Des Moines	June 7, 1914
Hagerty, H. J.	Dubuque	June 8, 1914
Hanson, E. E.	Forest City	April 18, 1914
Hell, Henry	New Liberty	March 24, 1914
Hunt, C. E.	Mt. Pleasant	
Heck, W. A.	West Liberty	

ASSISTANT STATE VETERINARIANS—Continued.

Name.	Address.	Commission Expires
Hoaglund, A. L.	Ottumwa	Jan. 13, 1915
Johnson, F. L.	Albia	
Johnston, S. H.	Carroll	Aug. 7, 1914
Johnston, E. E.	Centerville	April 1, 1914
Kelso, R. F.	Corydon	
Lodge, H. G.	Clarksville	
Loifer, R. A.	Sidney	Oct. 28, 1915
Lichty, J. M.	Sioux City	April 1, 1914
Miller, D. H.	Council Bluffs	
Moore, J. J.	Lamoni	May 15, 1914
Marks, W. H.	Lake Park	June 3, 1915
Miller, C. B.	Manning	March 4, 1916
Malcolm, P.	New Hampton	
Moon, S. B.	Rock Rapids	June 8, 1914
Middleton, A. C.	Grundy Center	
Miller, W. F.	Storm Lake	
McRoberts, H. L.	Columbus Junction	July 29, 1914
McAhren, D. W.	Des Moines	Aug. 12, 1915
McEvers, T. F.	Fairfield	Jan. 13, 1915
Neiman, F. J.	Marshalltown	March 24, 1916
Norden, C. J.	Nebraska City, Neb.	March 13, 1916
Nicholson, Jas.	Humboldt	June 8, 1914
Nelson, Jas. M.	Sigourney	
Nygren, H. J.	Waverly	March 23, 1915
Olmsted, H. H.	Charles City	
Olson, Carl	Sac City	June 7, 1914
Pease, E. H.	Cherokee	Oct. 19, 1915
Piper, E. G.	Ida Grove	June 11, 1914
Parke, Chas.	Moville	
Parker, F. F.	Oskaloosa	
Parslow, J. G.	Shenandoah	
Phelps, C. D.	Clear Lake	Oct. 2, 1915
Quin, A. H.	Creston	March 20, 1916
Russell, L. W.	Anamosa	July 29, 1914
Readhead, Wm.	Lenox	Feb. 13, 1915
Readhead, R. F.	Corning	
Rowe, O. W.	Keokuk	June 10, 1914
Roach, F. C.	Lost Nation	June 8, 1914
Robertson, J. E.	Monona	June 9, 1914
Roach, F. L.	Preston	April 1, 1914
Sayers, E. E.	Algona	June 22, 1914
Stange, C. H.	Ames	July 1, 1914
Stewart, C. E.	Chariton	Jan. 13, 1915
Simpson, H. C.	Denison	June 7, 1914
Smith, V. J.	Eldora	Feb. 3, 1915
Scott, J. W.	Manchester	June 7, 1914
Sheumaker, E. C.	Mt. Ayr	June 22, 1914
Stong, G. C.	Milton	April 15, 1915
Shipley, L. U.	Sheldon	July 11, 1914
Sauer, C. W.	Vinton	
Stewart, W. C.	West Union	June 10, 1914
Scott, C. J.	Knoxville	Jan. 3, 1915
Trafton, F. J.	Jefferson	March 24, 1914
Treman, A. J.	Lake City	Oct. 25, 1915
Tillie, Jno.	Muscatine	July 8, 1914
Talbot, P. L.	Grinnell	June 7, 1914
Talbot, W. W.	Pella	June 8, 1914
Uehran, Geo. E.	Atlantic	June 7, 1914
Vernon, J. M.	Des Moines	Jan. 13, 1915
Wall, Robt. D.	Des Moines	
Wilhite, C. L.	Manilla	
Wolfe, R. F.	Guthrie Center	June 8, 1914
Wood, A. L.	Hampton	Oct. 10, 1914
Walrod, Geo. M.	Storm Lake	May 9, 1915
Williams, J. E.	Webster City	Aug. 1, 1913

PER DIEM AND EXPENSE ACCOUNT OF STATE VETERINARIAN AND ASSISTANTS.
PERIOD JUNE 30, 1910 TO JULY 1, 1912.

Name	Address	No. Days	Per Diem	Expense	Total
Adamson, A. A.	Newton	114	\$ 57.50	\$ 30.40	\$ 87.90
Alcorn, H. A.	Adair	14	70.00	32.68	102.68
Anderson, C. W.	Jewell	26	130.00	51.62	181.62
Anderson, T. E.	Bedford	7	35.00	13.60	48.60
Anstey, J. A.	Massena	63	32.50	20.29	52.79
Baker, G. G.	Spencer	5	25.00	16.21	41.21
Baldwin, A. F.	Creston	6	30.00	20.54	50.54
Baughman, D. E.	Ft. Dodge	76	380.00	303.56	683.56
Bauman, S. H.	Birmingham	97	485.00	512.78	997.78
Blanche, G. W.	Belle Plaine	10	50.00	40.48	90.48
Brazie, F. E.	Harlan	8	40.00	29.64	69.64
Brodie, A. S.	Cedar Falls	7	35.00	16.08	51.08
Brooks, J. L.	Clinton	6	30.00	23.56	53.56
Brown, I. C.	Afton	5	25.00	11.74	36.74
Bunker, J. W.	Winterset	5	25.00	14.75	39.75
Button, P. G.	Cresco	12	60.00	43.26	103.26
Buxton, E. A.	Vinton	4	20.00	18.79	38.79
Chandler, T. W.	Davenport	50	250.00	174.15	424.15
Copeland, F. B.	Logan	13	65.00	43.75	108.75
Crawford, N. N.	Waukon	61	305.00	183.55	488.55
Deiling, N. J.	Dallas Center	21	105.00	55.37	160.37
Diller, L. L.	Marshalltown	30	150.00	62.50	212.50
Downing Tom	Washington	121	605.00	456.46	1,061.46
Edwards, F. H. P.	Iowa City	103	515.00	433.93	948.93
Evers, W. L.	Iowa Falls	16	80.00	79.19	159.19
Frank, J. E.	Indianola	3	15.00	13.75	28.75
Gibson, J. I.	Des Moines			634.29	634.29
Gidley, T. W.	Malvern	3	15.20	1.20	16.20
Gillian, H. M.	Mason City	4	20.00	14.49	34.49
Gooder, W. J.	Osage	4	20.00	21.00	41.00
Griffith, J. W.	Cedar Rapids	95	475.00	261.26	736.26
Guinn, S. H.	Marengo	1	5.00	2.30	7.30
Hanson, R. E.	Forest City	9	45.00	28.20	73.20
Harmon, B.	Decorah	26	130.00	78.56	208.56
Hazlet, S. K.	Oelwein	12	60.00	38.83	98.83
Haxby, J. W.	Clarinda	2	10.00	1.00	11.00
Heck, W. A.	West Liberty	2	10.00	8.87	18.87
Hell, Henry	New Liberty	14	70.00	68.16	138.16
Hollingsworth, F. H.	Council Bluffs	33	165.00	83.22	248.22
Howe, E. E.	Des Moines	34	170.00	58.58	228.58
Hull, J. W.	Burlington	3	15.00	5.12	20.12
Hunt, G. E.	Mt. Pleasant	2	10.00	3.00	13.00
Inger, J. D.	Waverly	34	170.00	100.19	270.19
Johnston, E. E.	Centerville	9	45.00	23.78	68.78
Johnston, S. H.	Carroll	76	380.00	252.97	632.97
Kelso, R. F.	Corydon	24	120.00	78.91	198.91
Koto, Paul O.	Forest City			929.97	929.97
Malcolm, Peter	New Hampton	52	260.00	222.67	482.67
McEvers, T. F.	Fairfield	10	50.00	14.00	64.00
McLeod, J. H.	Charles City	9	45.00	36.55	81.55
Miller, D. H.	Council Bluffs	54	270.00	164.12	434.12
Miller, W. E.	Cherokee	42	210.00	196.76	406.76
Moore, J. J.	Lamoni	1	5.00	3.73	8.73
Nelson, J. M.	Sigourney	4	20.00	13.40	33.40
Neiman, F. J.	Marshalltown	81	405.00	309.25	714.25
Nicholson, Jas.	Humboldt	2	10.00	2.12	12.12
Niles, W. B.	Ames	3	15.00	4.05	19.05
Olson, Carl	Sac City	21	105.00	61.16	166.16
Parke, Chas.	Moville	30	150.00	77.84	227.84
Parker, F. F.	Oskaloosa	7	35.00	24.21	59.21
Parslow, J. G.	Shenandoah	11	55.00	19.65	74.65
Piper, E. G.	Ida Grove	14	70.00	48.23	118.23
Quin, A. H.	Creston	75	375.00	284.32	659.32
Roach, F. C.	Lost Nation	1	5.00	6.58	11.58
Russell, L. W.	Anamosa	6	30.00	32.21	62.21
Sauer, C. W.	Vinton	4	20.00	17.60	37.60
Savers, E. E.	Algona	16	80.00	60.54	140.54
Scott, J. W.	Manchester	34	170.00	99.10	269.10
Simpson, Hal. C.	Denison	119	595.00	505.10	1,100.10
Sheumaker, E. C.	Mt. Ayr	10	50.00	20.50	70.50
Shipley, L. U.	Sheldon	160	300.00	208.17	508.17
Smith, V. J.	Eldora	31	155.00	103.24	258.24
Spence, J. H.	Clinton	23	115.00	100.13	215.13

PER DIEM AND EXPENSE ACCOUNT OF STATE VETERINARIANS AND ASSISTANTS
 PERIOD JUNE, 30, 1910, TO JULY 1, 1912—Continued.

Name	Address	No. Days	Per Diem	Expense	Total
Stewart, C. E.	Chariton	34	170.00	156.52	326.52
Stance, C. H.	Ames	25	125.00	162.62	287.62
Talbot, H. E.	Des Moines	112	560.00	277.19	837.19
Talbot, F. L.	Griinell	4	20.00	13.70	33.70
Thomson, Jno.	Armstrong	5	25.00	12.00	37.00
Tillie, Jno.	Muscantine	27	135.00	72.37	207.37
Trafton, F. J.	Jefferson	23	115.00	127.04	242.04
Tehran, G. E.	Atlantic	37	185.00	149.37	334.37
Vernon, J. M.	Des Moines	18	90.00	75.23	165.23
Wall, R. D.	Des Moines			6.91	6.91
White, C. L.	Manilla	14	70.00	13.50	83.50
Williams, J. E.	Webster City	34	170.00	5.62	235.12
Wolfe, R. F.	Guthrie Center	22	110.00	62.50	172.50
Wood, A. L.	Hampton	59	295.00	277.22	572.22
Total		2,214	\$11,673.50	\$ 9,424.75	\$ 20,407.25

VARIOUS STATE REQUIREMENTS FOR THE IMPORTATION OF
 LIVE STOCK.

ALABAMA.

Horses, Mules, and Asses.—Health certificate, in duplicate, issued by officially qualified veterinarian.

Cattle.—Health certificate, including tuberculin test for all cattle over 6 months old intended for purposes other than immediate slaughter. Calves from tubercular mothers or herd can not come into state.

Hogs.—Health certificate, showing no exposure to disease.

Sheep.—Health certificate.

Who May Inspect.—Any legally qualified veterinarian who may be indorsed or certified to by state veterinarian of state of origin, or by federal inspector.

Official.—Dr. C. A. Cary, state veterinarian, Auburn, Alabama.

ARIZONA.

Horses, Mules and Asses.—Health certificate, preferably including mallein test.

Cattle.—Health certificate. Tuberculin test for dairy or breeding cattle.

Hogs.—Health certificate and isolation at destination two weeks or until released by state veterinarian.

Sheep.—Health certificate for all. Certificate of dipping under official supervision when from any territory classed as infected by the government.

Who May Inspect.—Horses, cattle, and hogs: any state, federal, county veterinarian, or other veterinarian when his certificate is approved by the state veterinarian or state sanitary board at point of origin. Sheep: Federal veterinarian.

Official.—Dr. J. C. Norton, state veterinarian, Phoenix, Ariz., to whom duplicate certificate should be sent in advance.

ARKANSAS.

Horses, Mules and Asses.—Health certificate.

Cattle.—Health certificate for dairy or breeding cattle, including tuberculin test by official veterinarian, or permit from state veterinarian to test after arrival.

Hogs.—Must be free from and not exposed to contagious or infectious disease.

Sheep.—Must be free from and not exposed to contagious or infectious disease.

Who May Inspect.—Officials of the Bureau of Animal Industry or official veterinarians of state of origin.

Official.—Dr. J. F. Stanford, Fayetteville, Ark.

CALIFORNIA.

Horses, Mules, and Asses.—Health certificate, including mallein-test certificate. One copy of certificate and test record attached to way bill and duplicate copy mailed to state veterinarian on day of shipment.

Cattle.—Health certificate, including tuberculin-test certificate for breeding and dairy cattle. One copy of certificate and test record attached to way bill and duplicate copy mailed to state veterinarian of California on day of shipment. Special regulations for importation of southern cattle.

Hogs.—Health certificate.

Sheep.—In accordance with Federal regulations.

Who May Inspect.—Federal veterinarians or veterinarians certified to by the authorities charged with the control of live-stock sanitary work in the state in which the animals originate.

Official.—Dr. Charles Keane, state veterinarian, Sacramento, Cal.

COLORADO.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate and tuberculin-test chart for bulls for breeding purposes and female cattle over 6 months old intended for dairy purposes.

Hogs.—None.

Sheep.—None, except government regulations.

Who May Inspect.—Official veterinarians, state or federal, or a licensed veterinarian whose certificate is approved by the state veterinarian or like officer.

Official.—Dr. W. W. Yard, state veterinarian, Denver, Colo.

CONNECTICUT.

Horses, Mules, and Asses.—None.

Cattle.—For neat cattle over 6 months of age, health certificate, including tuberculin-test chart properly filled out and certified to by a qualified veterinarian in any other state who is approved by the authority having jurisdiction of diseases of domestic animals in that state. This certificate must contain a description of each animal, including age, breed,

sex and color, or numbered ear tags so that animals may be easily identified. When certificate as above described is not provided, neat cattle may be taken into the state under a permit from the commissioner on domestic animals and held in quarantine at the place designated until examined and released by the commissioner or his agent.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Commissioner or his agent.

Official.—H. O. Averill, commissioner on domestic animals, Hartford, Conn.

DELAWARE.

Horses, Mules and Asses.—None.

Cattle.—Cattle for dairy or breeding purposes admitted to the state on permit from the live stock sanitary board or must be accompanied by certificate, including tuberculin-test chart, showing animals to be free from tuberculosis.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Federal or state inspector, or veterinarian whose certificate must be approved by state live stock sanitary board.

Official.—Wesley Webb, corresponding secretary of state board of agriculture, Dover, Del.

FLORIDA.

Horses, Mules, and Asses.—None.

Cattle.—None.

Hogs.—None.

Sheep.—None.

The state law provides that it shall be unlawful for any person to bring into the state or to offer for sale any live stock suffering from contagious or infectious diseases.

Who May Inspect.—None needed.

Official.—Dr. Charles F. Dawson, veterinarian to state board of health, Jacksonville, Fla.

GEORGIA.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate and tuberculin test record for all dairy or breeding cattle. Cattle may upon affidavit of owner or exhibitor be shipped in for fairs or live stock exhibitions, but can not be sold for delivery within the state until they have been examined and tuberculin tested by state veterinarian or his duly authorized deputy.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Any qualified graduate veterinarian who is indorsed by the state veterinarian or officer in charge of live stock sanitary work in the state where the shipment originates; also veterinarians of the bureau of animal industry.

Official.—Dr. Peter B. Bahnsen, state veterinarian, Atlanta, Ga.

IDAHO.

Horses, Mules, and Asses.—None.

Cattle.—Dairy and breeding cattle to be tested with tuberculin, three preliminary temperatures and four after injection. Tuberculin-test chart should accompany cattle.

Cattle.—None.

Sheep.—Bucks to be dipped under state supervision.

Who May Inspect.—Federal, state and assistant state veterinarians to make tuberculin test.

Official.—Dr. V. C. White, state veterinarian, Boise, Idaho.

ILLINOIS.

Horses, Mules, and Asses.—None.

Cattle.—None, except Texas fever.

Hogs.—None.

Who May Inspect.—State veterinarian and his assistants.

Officials.—Dr. J. M. Wright, state veterinarian, 1827 Wabash Avenue, Chicago, Ill.; Mr. C. A. Lowery, secretary, state board of live stock commissioners, Springfield, Ill.

INDIANA.

Horses, Mules, and Asses.—None.

Cattle.—All cattle shipped into state must be tuberculin tested and tagged with Indiana state tags. Government test preferred. Test charts must be sent to state veterinarian. Cattle for feeding purposes required to be kept separate from all other classes of cattle and swine until slaughtered or shipped out of the state. Sworn affidavit required.

Hogs.—Hogs shipped into state for breeding purposes required to have certificates showing freedom from disease and that they originated in non-infected territory. All stock yards considered infected territory, unless under government supervision and non-infected pens are provided. Feeding hogs under same restrictions unless permit be secured from Indiana state veterinarian.

Sheep.—None.

Who May Inspect.—State veterinarian or veterinary inspector of the bureau of animal industry.

Official.—Dr. Nelson, state veterinarian, Indianapolis, Ind.

IOWA.

Horses, Mules, and Asses.—Health certificate, including mallein test.

Cattle for Dairy and Breeding Purposes.—Health certificate, including tuberculin test. Other cattle except for immediate slaughter affidavit required.

Hogs.—Health certificate showing immunization by the Dorset-McBride-Niles serum.

Sheep.—Health Certificate.

Who May Inspect.—The above required certificates may be issued by a federal, state or assistant state veterinarian or by any graduate vet-

erinarian whose certificate is indorsed by the parties having charge of live stock sanitation in the state where shipment originates.

Official.—Dr. J. I. Gibson, state veterinarian, Des Moines, Ia.

KANSAS.

Horses, Mules, and Asses.—Inspection certificate and mallein test issued by federal or state authorities, when shipped or driven from below the southern quarantine line, showing them to be free from Texas fever ticks.

Cattle.—Health certificate from territory under quarantine by the federal government on account of Texas fever ticks or scabies, including tuberculin test certificate for dairy cattle and registered cattle for breeding purposes.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Inspectors of the bureau of animal industry, veterinarians and inspectors having a commission from the state live stock sanitary commissioner.

Official.—Sam. S. Graybill, state live stock sanitary commissioner, Topeka, Kansas.

KENTUCKY.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate, including certificate of tuberculin test, except for cattle for immediate slaughter. Southern cattle admitted for purposes other than immediate slaughter during January, November and December, after certification by an inspector of the bureau of animal industry as being free from any symptoms of Texas fever.

Hogs.—None.

Sheep.—Sheep intended for purposes other than immediate slaughter shall be accompanied by certificate from an inspector of the bureau of animal industry showing them to have been dipped once within 10 days of date of entry in either lime and sulphur or a nicotine dip.

Who May Inspect.—State veterinarian and assistants, inspectors of the bureau of animal industry.

Officials.—Dr. Robert Graham, state veterinarian, Lexington, Ky.; Hon. M. C. Rankin, chairman state live stock sanitary board, Frankfort, Ky.

LOUISIANA.

Horses, Mules, and Asses.—Health certificate showing freedom from all contagious, infectious and communicable diseases.

Cattle.—Dairy and breeding cattle shall be free from tuberculosis; must be tested with tuberculin before entering state. Owner or agent of cattle must mail certificate to secretary and executive officer of state live stock sanitary board immediately following arrival of cattle under 6 months old; calves from tuberculous cows shall be rejected.

Hogs.—Health certificate from qualified veterinarian 24 hours before shipping, showing freedom from infectious, contagious or communicable disease.

Sheep.—Health certificate from qualified veterinarian 24 hours before shipping, showing freedom from infectious, contagious or communicable disease.

Who May Inspect.—All qualified veterinarians in the state deputized by board to make such inspections.

Official.—Dr. E. Pegram Flower, secretary and executive officer of state live stock sanitary board, Baton Rouge, La.

MAINE.

Horses, Mules, and Asses.—Health certificate and mallein test.

Cattle.—Must have permit from cattle commission, and be quarantined on owner's premises for 30 days and be subject to tuberculin test.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Qualified veterinarians authorized by live stock sanitary commissioner.

Official.—Mr. Van W. Carl, live stock sanitary commissioner, Augusta, Maine.

MARYLAND.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate for feeding cattle, and tuberculin test for dairy and breeding cattle, accompanied by test sheet.

Hogs.—Health Certificate.

Sheep.—Health Certificate.

Who May Inspect.—State veterinarian, deputies and inspectors of the bureau of animal industry.

Official.—Dr. Frank H. Mackie, chief veterinary inspector, 1035 Cathedral Street, Baltimore, Md.

MASSACHUSETTS.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate, including tuberculin test, except beeves for immediate slaughter and calves under 6 months old. Certificates of test made by veterinarians in other states are accepted if approved by the proper live stock sanitary authorities in those states.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Chief of cattle bureau or his agents.

Official.—Mr. Fred F. Walker, chief of cattle bureau, Boston, Mass.

MICHIGAN.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate for dairy cattle, including tuberculin test.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Competent veterinarian.

Officials.—Dr. Ward Giltner, state veterinarian, East Lansing, Mich.; Mr. H. H. Hinds, president state live stock sanitary commission, Stantown, Mich.

MINNESOTA.

Horses, Mules, and Asses.—All branded horses, mules or asses imported into Minnesota must be accompanied by a health certificate, including mallein test, certifying that animals have been examined and mallein tested within 30 days prior to date of shipment and found free from glanders.

Cattle.—All cattle intended for dairy or breeding purposes imported into Minnesota must be tuberculin tested. Dairy and breeding cattle imported into Minnesota from the state of Illinois must be held and tuberculin tested on arrival unless accompanied by a certificate of tuberculin test made and issued by a veterinarian of the United States bureau of animal industry.

Hogs.—Health Certificate.

Sheep.—Health Certificate.

Who May Inspect.—State veterinarians or assistants, other than those of Illinois, federal veterinarians and veterinarians acting under authority of state live stock sanitary board.

Official.—Dr. S. H. Ward, secretary and executive officer, live stock sanitary board, Old Capitol, St. Paul, Minn.

MISSISSIPPI.

Horses, Mules, and Asses.—Health certificate.

Cattle.—Health certificate. Tuberculin test for dairy and breeding cattle.

Hogs.—Health Certificate.

Sheep.—Health Certificate.

Who May Inspect.—State veterinarian, assistant state veterinarians, inspectors of the bureau of animal industry.

Official.—Mr. W. L. Hutchinson, secretary, live stock sanitary board, Agricultural College, Mississippi.

MISSOURI.

Horses, Mules, and Asses.—None specifically required. The statutes of the state forbid the importation of animals affected with glanders, farcy or nasal gleet.

Cattle.—Health certificate for dairy and breeding cattle, including tuberculin test. If any animal in a lot inspected is found tuberculous, the words, "exposed to tuberculosis on day of inspection," shall be written on the certificate of health of such animals as pass. Cattle for pasturing, feeding or immediate slaughter admitted on permit from state veterinarian without tuberculin test. Regulations do not apply to cattle shipped to the public stock yards at Kansas City, St. Joseph and St. Louis, nor for exhibition at any fair or live stock show.

Hogs.—None.

Sheep.—None specifically required. The statutes of the state forbid the importation of sheep affected with any contagious disease.

Who May Inspect.—Official veterinarian, state or federal, or competent veterinarian whose certificate shall be approved by the state veterinarian or like officer in writing.

Official.—Dr. S. Sheldon, state veterinarian, Columbia, Mo.

MONTANA.

Horses, Mules, and Asses.—Health certificate, including mallein-test certificate.

Cattle.—Health certificate, except for immediate slaughter, including tuberculin test for dairy and breeding cattle.

Hogs.—Health certificates, except for immediate slaughter, including statement of non-exposure, except where swine are certified by federal or state veterinarian as having been immunized by the Dorset-McBride-Niles serum method. All swine imported for exhibition purposes must be accompanied by certificate of immunization.

Sheep.—Health certificate, and dipped twice at interval of 10 days in approved dip on arrival at destination or at a safe and convenient point, unless for immediate slaughter.

Who May Inspect.—Federal, state and deputy state veterinarians.

Official.—W. J. Butler, state veterinarian, Helena, Mont.

NEBRASKA.

Horses, Mules, and Asses.—Health certificate.

Cattle.—Health certificate. Tuberculin test for dairy and breeding cattle.

Hogs.—Health certificate and crating for breeding or exhibition purposes. Must be loaded from wagons and not from ordinary chute.

Sheep.—Without inspection from clean territory. Permitted from territory affected with lip and leg ulceration after inspection by government veterinarian and found not to be affected with disease.

Who May Inspect.—Government or state veterinarian or graduate veterinarian authorized by government or state veterinarian.

Official.—Dr. A. Bostrom, deputy state veterinarian, Lincoln, Nebr.

NEVADA.

Horses, Mules, and Asses.—None.

Cattle.—None.

Hogs.—None.

Sheep.—Before entrance into state for grazing, must notify board (state sheep commission) or any inspector in writing. Notice not required for sheep in transit unless they remain in state or are unloaded to feed and rest for a longer period than 48 hours.

Officials.—Dr. T. F. Richardson, state veterinarian, Fallon, Nev.; Mr. Stan. C. Mitchell, secretary state sheep commission, Reno, Nev.

NEW HAMPSHIRE.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate, including tuberculin test.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Qualified veterinarians.

Official.—N. J. Bachelder, secretary, board of cattle commission, Concord, N. H.

NEW JERSEY.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate for dairy and breeding cattle, including tuberculin test.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Official veterinarians of the state or competent veterinarian whose health certificate is approved in writing by state officials.

Official.—Dr. Bruce S. Keator, secretary, state board of health, Trenton, New Jersey.

NEW MEXICO.

Horses, Mules, and Asses.—Health certificate.

Cattle.—Health certificate, including tuberculin test, for dairy cows or the breeding of dairy cattle.

Hogs.—None.

Sheep.—Health certificate. Bucks must be dipped at unloading point.

Who May Inspect.—Official veterinarian, state or federal, for cattle. Sheep must be inspected by a federal veterinarian before shipment and by territorial inspector at destination.

Officials.—W. J. Linwood, secretary, cattle sanitary board, Albuquerque, N. M.; Harry F. Lee, secretary, sheep sanitary board, Albuquerque, N. M.

NEW YORK.

Horses, Mules, and Asses.—Health certificate.

Cattle.—Health certificate for neat cattle for dairy and breeding purposes, including tuberculin test.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Federal inspectors, inspectors indorsed by the proper official of the state from which the shipment comes, and the commissioner of agriculture, or duly authorized representatives.

Official.—Dr. J. G. Wills, chief veterinarian, Albany, N. Y.

NORTH CAROLINA.

Horses, Mules, and Asses.—Health certificate when for breeding purposes.

Cattle.—Health certificate, including certificate of tuberculin test when for breeding or dairy purposes.

Hogs.—Health certificate for breeding purposes.

Sheep.—Health certificate for breeding purposes.

Who May Inspect.—State veterinarians, or any veterinarian whose certificate he will indorse; also United States inspectors.

Official.—Dr. W. G. Chrisman, state veterinarian, Raleigh, N. C.

NORTH DAKOTA.

Horses, Mules, and Asses.—Health certificate, including mallein test made within 30 days prior to entry into state. Certificate for stallions should, in addition, show the animals to be free from infectious, contagious or transmissible diseases or unsoundness.

Cattle.—Health certificate, including tuberculin test for cattle over 6 months old intended for dairy or breeding purposes; test to be made within 30 days prior to entry into state.

Swine.—Health certificate stating that no infectious swine disease exists or has existed in locality from which the shipment originated within 6 months prior to date of shipment, unless the swine are certified by a duly accredited federal or state veterinarian as having been immunized by the Dorset-McBride-Niles hog cholera immune serum. Swine brought into state for exhibition purposes at state and county fairs must be accompanied by a certificate stating that such swine have been immunized by the Dorset-McBride-Niles hog cholera serum.

Sheep.—Health certificate showing them to be free from scabies, lip and leg ulceration, or exposure thereto within 30 days prior to date of shipment.

Who May Inspect.—Federal, state or deputy state veterinarian or graduate veterinarian whose inspections are indorsed by officials in charge of live stock sanitary work in the state where inspection is made. All mallein and tuberculin tests shall be made by federal, state or deputy state veterinarians.

Officials.—Dr. W. F. Crewe, state veterinarian, Devils Lake, N. D.; L. Van Es, bacteriologist, state live stock sanitary board, Fargo, N. D.

OHIO.

Horses, Mules, and Asses.—None.

Cattle.—None.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Inspectors of the bureau of animal industry and veterinarians in the employ of the state board of live stock commissioners.

Official.—Dr. Paul Fischer, state veterinarian, Columbus, Ohio.

OKLAHOMA.

Horses, Mules, and Asses.—Health certificate stating particularly that stock is free from ticks.

Cattle.—Health certificate, including tuberculin test for dairy or breeding cattle.

Hogs.—Health certificate, except for immediate slaughter.

Sheep.—None.

Who May Inspect.—Official veterinarian, state or federal, or a graduate licensed veterinarian.

Officials.—M. F. Ikard, superintendent live stock inspection, Oklahoma, Okla.; Drs. J. K. Callicotte and Ben Dobkins, Oklahoma, Okla., veterinarians to the state board of agriculture.

OREGON.

Horses, Mules, and Asses.—Health certificate, including the mallein test, of stock used on railroad or other construction work. Horses that are parts of settlers' effects and animals for breeding need no inspection, but must be free from disease to comply with Oregon statutes.

Cattle.—Health certificate, including tuberculin test for dairy and breeding cattle and all others excepting strictly range cattle.

Hogs.—Health certificate, except for animals for immediate slaughter. No animal can be shipped for breeding or feeding purposes that has come in contact with any public yard, corral, undisinfected car, or other intermediate object that might carry infection. Show animals must be crated.

Sheep.—Health certificates from states in quarantine. Animals must be free from disease. Notice must be given to state sheep inspector or nearest deputy, stating, by telephone, telegraph, registered letter, or in person, time and place, when and where sheep crossed state line, locality from which they came, name and residence of owner or owners and of person in control of same, and number, brands and character of the animals. Sheep from quarantined states must be dipped once.

Who May Inspect.—Official veterinarians, state or federal; graduate veterinarians when approved in writing by state veterinarian or like officer, for animals excepting sheep. Sheep to be inspected by official veterinarians only, state or federal.

Officials.—Dr. J. F. Morel, state veterinarian, Corvallis, Ore.; Dr. W. H. Lytle, state sheep inspector, Pendleton, Ore.

PENNSYLVANIA.

Horses, Mules, and Asses.—Must be free from contagious or infectious disease.

Cattle.—Dairy cows and neat cattle for breeding purposes to be accompanied by a certificate of health from a veterinarian who has been certified to the Pennsylvania state live stock sanitary board by the authorities in charge of cattle diseases in the state in which the cattle originate. Said certificate must be accompanied by a temperature chart showing that each animal has successfully passed a satisfactory tuberculin test and is free from disease, or by a special permit authorizing importation of dairy cows or neat cattle for breeding purposes in quarantine, to be inspected and tested with tuberculin at destination by an approved inspector at owner's expense. Special permit to receive southern cattle for immediate slaughter.

Hogs.—Must be free from contagious or infectious disease.

Sheep.—Must be free from contagious or infectious disease.

Who May Inspect.—State veterinarian, inspectors of the bureau of animal industry, inspectors in the state in which the cattle originate who have been properly certified to the Pennsylvania state live stock sanitary board, or licensed and approved veterinarians in Pennsylvania.

Official.—Dr. C. J. Marshall, state veterinarian, and secretary state live stock sanitary board, Harrisburg, Pa.

RHODE ISLAND.

Horses, Mules, and Asses.—None.

Cattle.—Physical examination.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Cattle commissioners of Rhode Island.

Official.—Dr. John S. Pollard, state veterinarian, Providence, R. I.

STATE VETERINARY SURGEON

SOUTH CAROLINA.

Horses, Mules, and Asses.—Health certificate, Mallein test of any exposed animals.

Cattle.—Health certificate except when intended for immediate slaughter. Tuberculin test for dairy and breeding cattle over 6 months old.

Hogs.—Health certificate except when intended for immediate slaughter.

Sheep.—Health certificate except when intended for immediate slaughter.

Who May Inspect.—Official veterinarians, state or federal.

Official.—Dr. M. Ray Powers, state veterinarian, Clemson College, S. C.

SOUTH DAKOTA.

Horses, Mules, and Asses.—Health certificate, including mallein test.

Cattle.—Health certificate, including tuberculin test of dairy and breeding cattle.

Hogs.—Health Certificate.

Sheep.—Health Certificate.

Who May Inspect.—State veterinarian, deputies and inspectors of the bureau of animal industry.

TENNESSEE.

Horses, Mules, and Asses.—Must be free from equine scabies, glanders or other contagious, infectious or communicable diseases.

Cattle.—Health certificate, including tuberculin test of all cattle over 6 months old, except for immediate slaughter.

Hogs.—From public stockyards accepted for immediate slaughter only.

Sheep.—Health certificate issued by an inspector of the bureau of animal industry or other qualified veterinarian, except for immediate slaughter.

Who May Inspect.—State and federal inspectors or other qualified veterinarians.

Officials.—T. F. Peck, commissioner of agriculture, Nashville, Tenn.; Dr. G. R. White, state live stock inspector, Nashville, Tenn.

TEXAS.

Horses, Mules, and Asses.—Health certificate.

Cattle.—Dairy and breeding cattle over 6 months old and cattle for exhibition purposes at any fairs within the state must be accompanied by a certificate of inspection showing them to have been tuberculin tested within 60 days prior to time of entering the state.

Hogs.—Hogs for breeding and stocking purposes or hogs intended for exhibition at any fair within the state must be accompanied by a certificate showing them to have been immunized by the Dorset-McBride-Niles serum method.

Sheep.—Health certificate except when intended for immediate slaughter.

Who May Inspect.—Inspectors of the bureau of animal industry; inspectors designated by the live stock sanitary commission; state veterinarian or state sheep inspector.

Officials.—Mr. W. N. Waddell, chairman, live stock sanitary commission, Fort Worth, Tex.; Dr. E. R. Forbes, state veterinarian, Fort Worth, Tex.; Mr. J. A. Whitten, state sheep inspector, Eldorado, Tex.

UTAH.

Horses, Mules, and Asses.—Health certificate, including mallein test. Certificate to show stallions and jacks free from dourine and mares free from contagious abortion.

Cattle.—Health certificate for dairy and breeding cattle, including tuberculin test.

Hogs.—Health certificate, certifying that they have been immunized by Dorset-McBride-Niles hog cholera serum within ten days of date of shipment.

Sheep.—Health Certificate.

Who May Inspect.—Federal, state or deputy state veterinarian, or qualified veterinarian approved by the state or federal authorities.

Officials.—Dr. A. Carrington Young, inspector, Salt Lake City, Utah; A. A. Callister, secretary state board of sheep commissioners, Salt Lake City, Utah.

VERMONT.

Horses, Mules, and Asses.—None.

Cattle.—Must have permit from the state cattle commission and be held in quarantine until tested with tuberculin.

Hogs.—None.

Sheep.—None.

Who May Inspect.—State cattle commissioner and his veterinarians. Tests made in another state for shipment into Vermont are accepted when approved by the proper official of that state.

Official.—F. L. Davis, cattle commissioner, White River Junction, Vermont.

VIRGINIA.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate for dairy and breeding cattle, including tuberculin test, made within the preceding 4 months.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Inspectors of the bureau of animal industry, state veterinarian and qualified veterinarians whose certificates are approved in writing by the state veterinarian or live stock sanitary official of the state in which animals originate.

Official.—Dr. J. G. Ferneyhough, state veterinarian, Burkeville, Va.

WASHINGTON.

Horses, Mules, and Asses.—Physical inspection.

Cattle.—Tuberculin test for dairy and breeding cattle. Physical inspection for beef and feeding cattle.

Hogs.—Physical inspection.

Sheep.—Physical inspection.

Who May Inspect.—Inspectors of the bureau of animal industry and state veterinarian and assistant state veterinarians.

Official.—Dr. S. B. Nelson, state veterinarian, Spokane, Wash.

WEST VIRGINIA.

Horses, Mules, and Asses.—None.

Cattle.—None.

Hogs.—None.

Sheep.—None.

Who May Inspect.—None needed.

Official.—John M. Milan, secretary board of agriculture, Charleston, West Virginia.

WISCONSIN.

Horses, Mules, and Asses.—Health certificate, approved by state veterinarian.

Cattle.—Health certificate, including tuberculin test for dairy and breeding cattle over 6 months old.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Graduate veterinarians approved by the state veterinarian of the state from which the animals come.

Official.—Dr. O. H. Eliason, state veterinarian, Madison, Wis.

WYOMING.

Horses, Mules, and Asses.—Health certificate. Stallions and jacks require health certificate, including mallein test.

Cattle.—Health certificate, including tuberculin test for dairy and breeding cattle.

Hogs.—Health certificate. For exhibition must be immunized with Dorset-McBride-Niles hog cholera serum.

Sheep.—Send 10 days' notice to secretary state board of sheep commissioners, Cheyenne, Wyo., inclosing 3 cents for each sheep and 25 cents for each buck. All sheep to be dipped twice at destination within 15 days after arrival. All import sheep considered as being dipped for scabies and with such dip as prescribed or recognized by board of sheep commissioners for scabies.

Who May Inspect.—Federal, state or deputy state veterinarian or qualified veterinarian approved by the state or federal authorities.

Officials.—Dr. Benj. F. Davis, state veterinarian, Cheyenne, Wyo.; Dr. H. S. Eakins, secretary-treasurer, state board of sheep commissioners, Cheyenne, Wyo.