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FOR THE YEAR

1889

VOLUME II.

AUGUSTA:
BURLEIGH & FLYNT, PRINTERS TO THE STATE.
1890.

REPORT

OF

COMMISSIONERS

ON

Contagious Diseases of Animals.

Under the Law of 1887, Chapter 138, of Public Laws of Maine.

F. O. BEAL, *President*
W. W. HARRIS, *Secretary.*
GEO. H. BAILEY, *Veterinary Surgeon.*

AUGUSTA:
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REPORT.

To His Excellency, the Governor of Maine:

The commissioners appointed under the act entitled "An act to extirpate contagious diseases among animals," to be known and designated as the "State of Maine Cattle Commission," beg leave to present their annual report.

The first case called to the attention of the Commissioners the present year was on January 21st, an inspection of the cattle of George A. Kingsley of Auburn, but no contagious case was found.

February 1st. A notice of glanders was reported at Ellsworth, which proved to be a bad case of chronic glanders in a bronco, which was destroyed. Appraisal, $80.

February 2d. Another case of chronic glanders in a bronco was reported at Carmel. The animal was condemned and destroyed. Appraisal, $60.

February 4th. A case of glanders, reported at Exeter Mills, was inspected, and found to be suffering from chronic catarrh. No case.

February 6th. A case of glanders was reported upon the city farm at Waterville, which proved unfounded.

February 7th. A case of glanders was reported at East North Yarmouth, which also proved unfounded.

February 29th. Disease among the cattle of William J. Drew of Mercer, was reported, which proved upon examination to be a non-contagious case of emphysema.

March 5th we issued the following notice of quarantine, which still continues in force:

"Quarantine Notice.—Public notice is hereby given that in consequence of the prevalence of 'glanders and farcy among the Texas mustangs, or bronco horses' brought into Maine and sold, to the number of 2,900 during the season of 1887, no more broncos will be allowed to be landed or exposed for sale in this State until further notice.

The Cattle Commissioners of Massachusetts say in a late circular directed to 'Boards of Health' of cities and towns: 'The deaths of citizens from that loathsome and fatal disease, glanders, contracted from diseased horses, the too general negligence of animal owners, veterinarians and others, in giving notice of the suspected existence of contagious diseases, and the lax or indifferent action of boards of health in some of the cities and towns, makes it imperative that we call the attention of all good citizens to the statutes providing for the suppression of contagion among domestic animals.'

The attention of all persons is directed to Section 7, chapter 138 of the Public Laws of Maine, applying to cattle or horses affected with contagious diseases, and which will hereafter be rigidly enforced."

F. O. Beal,
W. W. Harris,
Geo. H. Bailey, V. S., } *Cattle Commissioners of Maine.*

March 7th. A case of tuberculosis was reported by J. R. Griffin of New Gloucester, which proved to be a case of acute pneumonia.

March 13th. A case of glanders was reported at Bangor, which proved to be unfounded.

March 28th. Two cases of glanders were reported at Ellsworth, each proving to be a case of chronic catarrh.

April 2d. A case of supposed tuberculosis was reported by D. Stevens of Auburn, which proved to be emphysema.

April 11th. A case of glanders was reported by the selectmen of Hollis, and a case of chronic glanders was found to exist, which was destroyed. Appraisal, $66.67.

April 13th. A case of tuberculosis was reported at South Lewiston, which proved unfounded.

April 16th. Contagious disease was reported among the cattle of D. D. Berry of Berry's Mills, South Carthage, which proved to be pure cases of emphysema, among quite a number of yearling heifers and steers.

April 17th. A case of tuberculosis was reported by L. M. Sylvester, at North Leeds, but no case was found.

April 21st. A single case of tuberculosis was discovered in a Jersey ox, in the herd of F. A. Parker, at Center Corner, South Leeds. The animal was condemned and destroyed at an appraisal of $32.50.

May 3d. The herd of Washington Hall & Son of Brewer was inspected by order of the selectmen. Mr. Hall was formerly the owner of one of the Orono College bulls, destroyed by order of the Commissioners in 1887, and which was found to be so thoroughly diseased with tuberculosis that contagion was still feared might exist in this herd, but none was found, and the balance of his stock now appears to be free from suspicion.

May 8th. The herd of cattle belonging to Mr. Small of Litchfield Plains was inspected and a post mortem held on a three-year-old heifer, which was found to have died of emphysema. No contagious cases were found in the remainder of the herd.

May 9th. An inspection of cattle was ordered at Augusta, but no contagious cases were found.

June 3d. Some cases of hog cholera were found on the premises at Scarboro (and which proved to be the only cases reported during the year), and were destroyed, so that it would seem the disease may be fairly considered to be stamped out in this State.

June 5th. The herds of cattle belonging to Josiah Gould, O. M. Burton, Samuel Libby and A. F. Crowell of Corinna, were inspected by order of the selectmen, but no contagious disease was found to exist.

June 14th. An inspection was ordered of the stage line of horses, running from Auburn to West Auburn, and a grey gelding was found to be badly affected with chronic glanders. He was condemned and destroyed. Appraisal, $80.

June 20th. A case of glanders was reported by the selectmen of West Gardiner, which was inspected, and found to be a case of chronic catarrh.

June 22d. A case of glanders was reported at Winthrop, which also proved to be non-contagious catarrh.

June 26th. A bad case of acute glanders was found in a livery stable in Portland, which was destroyed at an expense to the State of $100.

June 28th. A case of chronic glanders was reported at Presque Isle, which proved to exist in a young mare that came from the Provinces. She was destroyed. Appaisal, $100.

June 29th. A case of chronic glanders was found at Bridgewater, Aroostook county, and was destroyed. Appraisal, $42.16.

June 30th. A case of acute glanders was found at Stroudwater village and destroyed. Appraisal, $80.

July 2d. Two cases of glanders were reported by the Society for the Prevention of Cruelty to Animals, at Portland, and both horses found to be badly affected, one with chronic glanders, the other with "glanders and farcy." Appraisal, $200.

July 4th. A case of glanders was reported at East Orland, and found to be a case of acute glanders. Appraised at $50.

July 7th. Some cases of glanders were reported by the selectmen of Sherman Mills, Aroostook county, and a case was found at Eagle Falls, which was settled at no expense to the State.

July 9th. A case of glanders was reported at Cape Elizabeth, which upon inspection proved unfounded.

July 10th. A diseased cow was reported by Elbridge G. Bailey of Deering, and a case of tuberculosis was found and condemned. Appraisal, $53.34.

July 17th. A case of glanders was discovered in Portland that had recently been brought into this State from New Hampshire. The commissioners being satisfied that the horse was diseased when brought into Maine, refused an appraisal and the horse was returned, at no expense to the State.

July 28th. A contagious disease was reported to have suddenly broken out among the cattle of Luther H. Maxin of West Sumner, and it was found that four valuable yearling heifers had died within a short time of each other, and others were similarly affected; a post-mortem revealed the fact that they had all died of impaction of the third stomach, (omasum) in consequence of eating excessive quantities of (new process) linseed meal, two quarts a day having been fed to each animal; the other cases recovered.

August 8th. A herd of cattle was inspected at Topsham, but no contagious case was discovered.

August 10th. A case of chronic glanders was found in the town of Scarboro', and was condemned. Appraisal, $40.

August 23d. A case of glanders was reported at West Buxton which proved to be a case of chronic catarrh.

August 24th. Some cases of tuberculosis were reported in a herd of cattle at Brunswick, which proved to be emphysema.

August 31st. A case of glanders was discovered in a bronco at Bangor, and he was condemned. Appraisal, $26.67.

September 28th. Notice was received of a case of glanders at Danforth, Aroostook county, which proved to be a case of chronic glanders in a young horse, which was destroyed. Appraisal, $100.

September 22d. A case of tuberculosis was reported by the selectmen of Buckfield, but no case was made out.

September 27th. A case of "glanders and farcy" was discovered in a fine horse belonging to the same party as that

condemned June 26th, at Portland. He was destroyed. Appraisal, $100.

October 3d. Some cases of cattle diseases were reported by Norton Stover, at West Harpswell, that proved upon inspection to be confirmed cases of emphysema.

October 13th. Notice of a case of glanders was received from the city marshal of Gardiner, which proved to be, upon inspection, a case of chronic catarrh.

October 15th. A bad case of acute glanders was found in a wood dealer's yard at Portland and condemned. Appraisal, $100.

October 16. A second case of glanders developed among the stage horses at West Auburn, and the animal was destroyed. Appraisal, $75.

October 18th. A herd of forty-three broncos that had come from Washington Territory, over the Grand Trunk Railroad, were found quartered upon the Maine State Fair grounds at Lewiston, and were placed in quarantine for thirty days, at the end of which time no cases of glanders being found among them, they were discharged. The broncos belonged to Rensalaer and Freeman Webster, who claimed that they came into the State with no knowledge that the State was quarantined against that class of animals.

November 20th. A case of glanders was reported at Danforth, but an inspection proved the case to be catarrh.

November 22d. A case of glanders was reported at Mattawamkeag, that also proved to be chronic catarrh.

November 29th. Some cases of glanders were reported by the selectmen, in a lumber camp in Township No. 1, Aroostook county. The horses were examined and no cases of contagion was found among them.

December 18th. A section of the lung of an ox that had died in the herd of P. S. Weymouth of Dexter, was forwarded to Portland, and found to be a marked case of tuberculosis, and on the 27th an inspection of his cattle was requested by the selectmen, which developed the fact that no suspicious cases remain.

In closing this last inspection of the year we are able to report that all of the expenses of the commission, including the amount paid for horses and cattle, for the years 1887 and 1888, have been kept well within the appropriation.

Received from the State, 1887 and 1888.....	$3,822 10
Outstanding bills January 1st, 1888	700 00
	$4,522 10
Amount less than appropriation	477 90
	$5,000 00

A summary of the whole number of cases reported to the commissioners in 1888, will be found to number fifty-three, embracing cities and towns distributed from the sea-board at Portland, to the backwoods of Maine. Eighteen herds of cattle were inspected, and thirty-five stables and "lumber camps." Two head of cattle were condemned and destroyed at an expense of $85.84, and nineteen horses were also condemned and destroyed at an expense of $1,300.50 making a total of $1,386.34 as compared with 1887, forty-eight herds of cattle were inspected, and thirteen head of cattle were destroyed at an expense of $309.75, while eleven horses were destroyed (seven of them being traced to one lumber camp) at an expense of $626.50, making a total of $936.25.

It will be observed that the number of cattle destroyed has so materially decreased from last season, that but three cases of tuberculosis have developed during the year out of the whole number inspected, while among horses the number affected with glanders has increased from eleven head in 1887, to nineteen head in 1888. In tracing the history of this unusual number of cases of glanders and farcy in this State, the most significant fact has developed, that but two of these horses were bred in Maine, while five of them were broncos, three came from Canada, one from the Provinces, one from New Hampshire and seven of them came to us from Massachusetts. This showing conclusively proves that glanders does not prevail among horses in this State, together with a

strong probability that what cases do develop among them, are caused by inoculation from horses brought into Maine, that had been previously exposed, if they had not actually developed the disease when brought here, although we have been unable to verify this fact but in a single instance.

The greatly improved condition of our "flocks and herds" over that of previous years, showing as it does an almost absolute absence of any contagious disease among our cattle, may well be deemed sufficient warrant for the opinion that tuberculosis is practically stamped out of Maine, while it would be perhaps unreasonable to expect that isolated cases may not again make their appearance in the future history of our State. Compared, however, with other States, our present showing is remarkable. The Cattle Commissioners of Massachusetts in their annual report for 1887 say, "In their annual report for 1886 particular attention was called to the prevalence of tuberculosis, its peculiarities described and the difficulty of eradicating it by the force of our present statutes, or any appropriation the legislature would make. The facts of a year ago are in the main the facts of to-day. The disease continues with no apparent abatement or increase, though as the veterinary profession increases in number, and attention is called to it more and more, there is call for more active work. The disease could, doubtless, be eradicated by placing it in the same category with pleuro-pneumonia, and applying to it the same provisions of law; but it would, doubtless, necessitate the destruction of twenty animals to save one, and require the payment of many hundreds of thousands of dollars."

MILK AND CONSUMPTION.

A committee of the Canadian Parliament has just published a report of its investigations, which is likely to attract wide attention. The committee was appointed to inquire into the existence of tuberculosis in domestic animals, with special reference to the question whether the disease can be

communicated from such animals to human beings. The opinions of leading physicians throughout the Dominion were procured, and these have convinced the committee that the disease is communicated to man by means of the meat of tuberculous cattle and the milk of tuberculous cows. This view of the subject is not confined to our Canadian brethren by any means. We read in one of our recent California exchanges that in his address to the Butchers' Protective Association, C. A. Mercer, the Government agent of the Bureau of Animal Industry, said: "It will be two years before this country can be thoroughly cleansed of diseased cattle, for from San Francisco Bay to Southern California one-half of the State's stock is rotten. Out of every one hundred consumptives, twelve acquire the disease from drinking the milk or eating the meat of consumptive cows." The recent Consumption Congress in Paris also adopted resolutions as follows: "The seizure and destruction of all tuberculous animals, whatever may be their appearance of health, should be a constant practice. Every effort should be made, by means of circulars, lectures, etc., to warn the laity of the danger of acquiring tuberculosis by the use of the flesh and milk of diseased animals." It is generally admitted by leading physicians that many diseases are directly caused by the introduction into the human system of the microbe or bacteria characteristic of those diseases, though it does not follow that the introduction of the specific microbe will necessarily cause the disease it is related to. A person exposed to the action of these disease producers may be so healthy as to escape their effects. On the other hand, he may inherit such a special susceptibility to a disease that when its peculiar microbes are introduced into his system they find the conditions perfect for their rapid multiplication and harmful activity. Dr. Austin Flint goes so far as to assert that "it is probable that a person with an inherited tendency to consumption would never develop the disease if he could be absolutely protected against infection with the

tubercle bacillus; but once infected, the bacteria multiply and produce the characteristic signs and symptoms." The bacilli often possess wonderful vitality. It is well established that intense cold does not kill them. For this reason there is danger in using ice that has been taken from streams into which sewage is discharged. But they cannot survive exposure to great heat. Therefore boiling of contaminated water makes it harmless. There is abundant evidence that cows are often tuberculous while seeming to be healthy, and within the past two or three years veterinarians have been impressed by the prevalence of this disease in herds of beef cattle as well as on dairy farms. There is trustworthy evidence that consumption may be and is communicated from such animals to man by means of beef and milk. The only secure method of preventing infection from these sources is by exposing the beef and the milk to intense heat—by thorough cooking and by boiling, and by careful and intelligent inspection of beef cattle and dairy cows. The sooner the government takes the matter of beef inspection in hand the better it will be for the whole community.

That it is not necessary to have the udder tuberculous in order to have the milk contain the bacilli of tuberculosis, has been demonstrated by Dr. Austin Peters of Boston, he having found the bacilli in milk from a tuberculous cow where the udder was in apparently normal condition. The Cattle Commissioners of Massachusetts, in their recent report on tuberculosis say, "Isolate all animals that are at all suspicious until positive symptoms manifest themselves. *Never breed from an animal whose history is tainted*, or about which there is the least suspicion. As regards treatment, this disease has taxed the energies and defied the efforts of physicians for generations; and of what practical benefit could it be, since these animals are useless for breeding, dangerous for dairy purposes and as companions, and unfit for food? Our best energies, therefore, should be directed towards prevention and eradication."

The experiments of Villemin in 1864 caused him to come to the conclusion that tuberculosis was an infectious and specific malady, capable of being transmitted from one animal to another. From clinical observations tubercular phthisis is a contagious malady equal in infectiousness to glanders and contagious pleuro-pneumonia, and contagion plays a more active part in its propagation than heredity. By artificial means the bacilli has been cultivated for eighteen months, through twenty-six successive breedings, and then found, by inoculation, to produce the morbid phenomena of tuberculosis, the same as when taken from an infected animal. This organism may gain its entrance into the system by circulation, from either parent, respiratory or digestive tracts, or through wounds on any part of the body. It may be of interest to know to what extent tuberculosis was the cause of death in the human family in Massachusetts, during the year 1886. According to the Registration Report for that year, there were 39,040 deaths in that State, and of that number 7,329 died from tuberculosis, and from the twelve prominent causes of death, tuberculosis claims over thirty per cent.

"Glanders and farcy" has taken such a leading position among the contagious diseases of animals in Maine, as to require special legislation, not only to exterminate whatever cases may occur within the limits of our State, but also to prevent its introduction from other States where the disease is well known to exist. The State of Massachusetts suffered extensively from the prevalence of this malady last season, and the report of their cattle commissioners for 1887, gives the details of their examinations by which we learn that "glanders was found to exist in all the various stables of the South Boston and Cambridge Horse Railroad Companies. On September 13th they ordered the strict quarantine of 26 horses in the Riverside, Brookline and Harvard Square stables.

Sept. 16th they quarantined 27 horses at the so-called Port stables.

Sept. 22d they quarantined 26 horses at the Murray street stables.

Sept. 23d they quarantined 13 horses at the Beacon street stables, Somerville.

Sept. 27th they quarantined 11 horses at the Brighton stables.

Sept. 28th they quarantined 39 horses at the West Somerville stables, and October 12th they quarantined 50 horses at the Mt. Auburn stables in all 192 animals. These horses were all designated by numbers and on October 20th a majority of the board voted to select 95 horses from the various stables, and relieve them from further restrictions, without regard to the facts that they had been quarantined as diseased and suspicious of glanders, and that an acute case had made its appearance.

The secretary was instructed to communicate with the company, as follows:

Mr. Prentiss Cummings, President of the Cambridge Railroad Company:

DEAR SIR:—I am instructed by the cattle commission to ask that no horses owned by your company and which have been quarantined by order of the commissioners, and afterwards had the quarantine removed, be disposed of by trade or otherwise, without giving notice to the commissioners. It is very desirable that the future history of these horses be known, how many, if any, it is found necessary to dispose of, on suspicion of glanders or for other ailments. Trusting this request will be not unkindly received, but will be fully granted.

I am very truly yours,

A. W. CHEEVER,

Secretary Massachusetts Cattle Commissioner.

November 10th the board liberated seven other horses, and on November 17th, five more. December 28th, seven more were liberated.

September 30th, sixty-seven of the horses remaining in quarantine were submitted to the examination of Drs. A. F. Liantard and Rush S. Huidekoper, Deans of the Veterinary Departments of New York and Pennsylvania.

Dr. Liantard divided the 67 examined into four classes: 1st, Those that presented positive characteristics of chronic glanders; 2d, Those he considered suspicious; 3d, Doubtful; and 4th, Those in which he failed to find any signs of the disease. He reported 31 cases of positive glanders, 23 suspicious cases, five doubtful and eight as entirely free from the disease.

Dr. Huidekoper reported 20 cases of positive glanders and 28 animals presenting the same symptons in a less marked degree, as extremely suspicious; the remaining 19 cases he failed to find sufficient lesions to render a diagnosis of glanders, substantially agreeing with Dr. Liantard. The surgeons reported "the positive and suspicious cases as alike unsafe to handle by attendants, and dangerous to horses that may come in contact with them, the remainder, if worked, should be placed in teams by themselves, and allowed no communication with other horses, and examined at least once a week by a veterinarian to detect the first sympton of the disease." Without regard to the opinions of the experts employed, forty-seven horses were released that day (Oct. 30th) and subsequently all the rest, including the two that had been ordered killed October 3d, and the seven that the road were advised to kill November 17th, with the order that they be worked in pairs by themselves.

In accordance with the vote of the board three horses were inoculated on the 10th of December, from three that had been *released from quarantine* by the *commission*, and in all of the animals inoculated *glanders was produced.*

Number of horses examined..... 1,700
Number of horses quarantined by vote of full board, 212
Number of horses released by board (Winchester against)..... 162

On December 18th acute glanders was found to be prevalent among the horses of South Boston division, and after sixty horses had been destroyed, the commissioners report that the trouble appeared to be on the wane, though it will probably be many months before all danger will be passed.

Signed J. F. WINCHESTER, D. V. S.,
Veterinarian of the Board.

We have been thus particular in giving the details of the Massachusetts report, from the fact that several carloads of horses from these horse car stables, have been brought into this State this season and sold and distributed throughout the very heart of the agricultural districts of Maine, as our board believes to the serious detriment, loss and depreciation of our own stock, and for the recurrence of which some suitable remedy should be devised.

In view of the fact that neither Canada, the Provinces or Massachusetts remunerate the owners of horses condemned under their laws when affected with glanders, it becomes a serious question whether the liberal provisions of our present law do not act as a premium or bounty to unscrupulous dealers to bring horses into this State for sale, where if they prove diseased they can recover three-fourths of their appraised value under our law. The prevalence of glanders among the large number of broncos sold and distributed over the State last season (2900 of them having been sold by the McCaffety Bros., alone) caused the commissioners to issue a notice of quarantine against the importation or sale of this worthless class of animals, which quarantine still continues, although there are no restrictions or inspection required of horses brought from neighboring States, or the Provinces, where glanders are known to exist.

We believe that either the amount of appraisal in these cases should be reduced, or that payment should be confined to horses raised in Maine. In several instances this season and last the commissioners have been summoned long distances to inspect cases of reported glanders, where there proved to be no reasonable excuse for such report, and for the guidance and instruction of persons having suspicious cases, we will briefly give such characteristics and symptoms of the disease as should enable those not acquainted with this dangerous malady in horses to diagnose it correctly. It may be at once stated that the designation "glanders and farcy" are employed to distinguish two forms of one disease; or, in other words, that they are two diseases essentially identical, however dissimilar their external manifestations. They are characterized externally by certain alterations in the skin and the mucous membranes of the respiratory passages of the head, consisting chiefly of ulcerations, and the formation of a special kind of purulent matter, and induration of the glands. These two forms of the affection may be observed in the same animal singly or simultaneously, and the contagion of glanders may produce farcy by transmission from a diseased to a healthy animal, as farcy may produce glanders. The fact that this contagious malady, while peculiar to horses may also be transmitted to mankind, renders it a constant menace to every man, woman and child in the community.

Glanders and farcy is a malignant and fatal disease, that finds its origin in a contagious principal, a special micro-organism, and is transmissible to all domestic animals except to cattle. Sheep are also especially susceptible to infection. In man the most common mode of its propagation is inoculation, by the virus gaining access to the blood by coming in contact with an abrasion of the skin, or wound of the mucous membrane, and being absorbed into the system, but the bacilli do not appear able to penetrate through the uninjured skin or mucosa. The period of incubation by inoculotion is from three to five days. Acute glanders may terminate in

two weeks, while the chronic form may continue for years and the horse be apparently as well able to work or drive as ever, with no apparent derangement of health or condition.

It is an unquestionable fact that glandered mares have given birth to colts with the disease, that is, that the bacilli can pass from mother to fœtus, and past experience has demonstrated the uselessness of all medical treatment to cure or prevent the disease. According to duration, glanders may be spoken of as acute or chronic, the latter is the common, acute the rarer form.

There are three characteristic local symptoms of chronic glanders: 1st, The nasal discharge, (generally from the left nostril); 2d, enlargement of the submaxillary lymphatic gland, and 3d, ulceration of the pituitary membrane.

The character of the discharge is noteworthy, and has long been looked upon as characteristic of the disease. The discharge usually comes from the nostril in which the ulcers are situated; if it is from both nostrils, then ulceration will be found in each of them. Unlike the discharge of acute or chronic catarrh which may be at first transparent, and later opaque and viscid, flowing slowly, or snorted out in lumps, it is glutinous and adheres to the skin and hair around the nostrils, forming soft, greasy-feeling crusts of a deep brown color, which adhere to the fingers when touched. It afterwards becomes purulent and assumes a peculiar greenish tint, sometimes rusty or streaked with blood; as a rule there is no odor from the discharge, although in old chronic cases it may become very fetid.

The alteration of the submaxillary gland (under the jaw) is inseparable from the chancrous ulcers in the nose. One or both glands may be affected, according as one or both nostrils discharge and have ulcers, and if only one nasal cavity is affected, then the gland on the corresponding side is involved. The gland is largely increased in size, and is always irregular to the touch, lumpy and nodulated over the surface. It becomes hard and fixed to the jaw, but never softens to superation.

The ulcers or chancres are developed in the texture of the membrane, from the size of a millet seed to that of a small pea, and perfectly defined. To the eye they appear as little round bodies of a yellowish color, slightly projecting beyond the level of the membrane, which at their margin is pale or inflamed according to the progress of the disease. They are rapidly developed, and in two or three days liquefy, become softened, the epithelium covering them is detached, allowing the pus to escape leaving a small concave depression. This stage constitutes confirmed glanders.

The chancre, once formed, continues to seperate, though not unfrequently coagulates, and forms a yellow, slightly attached crust over it. It is very rarely that these ulcers cicatrice; more often if a number of them appear together they may coalesce and form large ulcers variable in shape and color. Dr. Liantard, in his report of the Boston horse car cases, besides the ordinary form of chronic glanders, in which the three essential symptons are present, speaks of the "dry form," where the symptoms given by the glands and the discharge are missing, and the "latent form" where there is, so to speak, nothing positively indicative of the existence of the disease, so far as given by the gland, the disharge, or the septum nasi. These two last forms are very insidious, and it is exactly such cases which most frequently contribute to the extension of glanders among horses, and extension of the disease to unsuspicious human beings.

In farcy, the local symptoms consist in the appearance of superficial indolent tumors or "farcy buds" on the skin in various parts of the body, and which soon ulcerate and become chancrous, constituting the specific feature of the malady. Some begin to form altogether beneath the skin, which is only affected when they begin to ulcerate. They are generally found where the skin is thinnest and most sensitive, particularly around the eyes, nostrils and lips, inside the legs, upper part of the shoulders, flanks, inside the thighs, and abdomen. Once developed these tumors invariably result in ulcerations. At first, each, considered separately, is a small

hard body, slightly projecting beyond the skin, not very painful, but surrounded by a doughy swelling. In two or three days the tumor increases in size, and commences to soften in the center, so that in four to ten days, if punctured, gives exit to a small quantity of thin, yellow, oily-looking pus, characteristic of this affection. The farcy ulcer has no tendency to heal like an ordinary sore, and if not interfered with it extends by destroying the tissues around its margin, which has a peculiar jagged border and hard base, as well as marked depression in the center of the ulcer.

While glanders is very common among horses that are kept in narrow, ill-ventilated stalls, and often, under such circumstances assumes a very malignant character, closer and more thorough examination has pointed to the fact that the very best hygienic conditions were not in themselves sufficient to prevent an outbreak of glanders, when a diseased horse chanced to come among them and that the disease extended from animal to animal, and unfavorable hygienic conditions were simply important aids in the extension of the disease.

Not only does it appear that the poison of glanders is communicated by immediate or direct contact of the diseased with the healthy; it is in addition tolerably certain that it may be propagated by mediate or indirect contact; that is, by some intermediate bearer of the virus which, being charged with the infected material, conveys it to the still healthy. The external media acting in this manner are the harness and clothing of diseased horses, the wood-work, fittings and utensils of stables, as also the similar accessories of railway cars in which such animals have been placed. Glanders is also supposed to be propagated by the acts of coitus and suckling, that in some instances it may be regarded as the result of hereditary transmission and that the poison may be conveyed into the system through the medium of food or drinking water.

The power of life, or the period during which after separation from its source of origin, the virus of glanders will

retain its activity is variable. It is destroyed when mixed with water at a temperature of 133 degrees Fah. also when brought in contact with such chemicals as carbolic acid, chlorine, sulphuric acid, &c. In one case the dried nasal discharges of an animal suffering from chronic glanders conveyed the disease to a healthy horse in the form of acute glanders and farcy, when placed in the stable previously occupied by the diseased, two months after the removal of the latter, and acute farcy has been produced after inoculating with dried mucous taken from a glandered horse six weeks before.

It would always be a wise precaution, before placing healthy animals in stalls or stables of unknown character, or boxes tenanted by strange horses, that they first be thoroughly cleansed and disinfected.

ABORTION IN CATTLE.

This disease, although it has never yet been classed and recognized as among the contagious diseases of cattle in this State, is one that has long been a calamity that has afflicted the stockbreeders of neighboring States, and one with which they have been literally unable to cope. Some very marked cases have recently been reported to me in this State, that have caused great pecuniary loss to the owners of several valuable herds of thorough-bred cattle, and such cases have been referred to the Governor and Council, as under our present law the Commissioners seem to have no authority to investigate or act.

Abortion must be distinguished artificially from premature birth in which the fœtus is able to live for a longer or shorter time after expulsion. Fleming estimates all cases *as abortions* which take place thirty-five days before the normal period. He quotes the valuable observations of Earl Spencer, that no calf can be born alive before the 220th nor after the 313th day, and that it is impossible to rear those born before the 242d day. A rigid separation of all animals which have aborted from those which are pregnant should be attended to in all cases, and the fœtal membranes removed or destroyed.

That the disease is highly contagious there is no longer room for doubt, and the subject has been occupying the attention of our best veterinarians in this country and also in Great Britain and France, the latter country having recently appointed a commission to study the question, the conclusion —founded on careful and extensive investigation—being that abortion is a contagious affection, *resulting from the presence of microbes.*

That abortion is not a disease of the pregnant cow, seems to be fully established, as the condition of the cow is not affected. She preserves her health; her urine, her blood, her milk remains normal, and a post-mortem examination discovers no injury whatever. The result of scientific investigation proves that abortion is the result of the presence of micro-organisms in the cow, (between the mucous membrane of the uterus and the fœtal envelopes) or in the fœtus (in the intestinal liquid or mucous membrane of the digestive canal).

A cow aged two and one-half years, gave premature birth to a fine calf of about five months. Her health was good, but she was killed the same day. An incision of the uterus discovered some flakes of yellow muco-purulent matter. Cotyledons adhered to the placenta; around some pedicals was a yellowish pus-like matter similar to that which drains from the vagina after abortion. Under the microscope, the pus presented a large number of micrococci, together with some bacilli; in the cotyledon juice were bacilli almost to the exclusion of the micrococci; while the blood and milk showed organisms at all, and the uterine mucous presented no especial alterations. A cow which had aborted many months, and which had refused to take the male, was also killed. Her viscera and uterus were normal, while a liquid obtained by scraping the mucous membrane of the uterus was slightly acid, and swarmed with microbes. The uterus of aborting *cows always contains micro-organisms, whereas, that of a healthy beast does not contain any, nor is the uterine liquid acid.*

From these experiments M. Nocard draws the following conclusions:

"1. In aborting cows there exists, between the mucous membrane of the uterus and fœtal envelopes, micro-orgaisms, which are not found in pregnant cows which have previously borne calves, and coming from a district where abortion is unknown.

2. These micro-organisms do not appear to exercise an injurious action upon the mucous membrane of the cow during gestation or after abortion.

3. Abortion repeated in the same animal is explained if the influence of the microbe is admitted by its persistence in the uterine cavity until the moment when it can exercise this action upon a new fœtus or upon its envelopes.

4. Consecutive sterility is also explained by the acid reaction of the uterine liquid, in which the microbes perpetuate themselves the spermatozoa not being able to preserve their vitality in acid media."

"Does abortion result from a disease of a fœtus or its envelopes?" To answer this question M. Nocard made two series of post mortem examinations. In the first series he dealt with abotted calves born "likely to live," and in the second with those "not likely to live." In the first (likely to live) series the blood, bile, serum of the blood, spleen, kidneys, liver, and lymphatics gave negative results, neither organ presenting any trace of micro-organisms. In the second (not likely to live) series the same results were obtained with regard to the blood, bile, urine, serum, liver, etc. The digestive organs, not having been used, and not having, consequently, received any micro-organisms from the exterior, yet contained numerous microbes of various species, either in the intestinal liquid or in the mucous membrane. This discovery is of considerable importance, for the digestive canal of a normal fœtus which has never breathed nor drunk does not show any trace of microbes at all. *Their presence then may be considered as an incontestable sign of the epizootic*

nature of abortion, and it also explains the diarrhœa which causes the death of calves and the rapid petrifaction of the fœtus."

The history of individual cases must be investigated so as to throw light upon the subject, whence come or originate these micro-organisms? The means by which, if *coming from without*, into the womb of the cow can be few. One means suggests itself, viz:—during copulation. This should not be overlooked, and I have under observation a large herd that have suffered freely from abortion, in which is kept a bull for public service, and the fact has developed that all cows owned outside this herd that have been impregnated by this bull, have aborted, in almost every instance for the first time.

We would only say in conclusion, that M. Nocard's investigations and results seem to be on the same lines as all other discoveries into the origin of (formerly) mysterious and obscure contagious diseases, all of which such discoveries seem to prove are caused by living germs or micro-organisms.

The new cattle bill passed at the close of the last session of the legislature, entitled "an act to extirpate contagious diseases among cattle" should, in the opinion of our Board, be so changed or modified as not to give in certain sections of the law, especial prominence to the disease known as tuberculosis, to which the public mind had at that time been pointedly directed in consequence of the unprecedented outbreak of the disease at the State College farm at Orono. At the time the report of the Orono cases was published (although the entire herd had then been disposed of and destroyed), there were still outstanding quite a number of young animals (mostly bulls) that had been sold from time to time from the College herd, that by order of the Committee of Investigation, were afterwards inspected, and being found in almost every instance thoroughly diseased, were also destroyed, so that we are now able to report the State free from any suspicious cases that trace directly to the College herd, with possibly the exception of a single bull in the town of Lee, that was out of one of the diseased and condemned cows at Orono.

In view of this fact we have to recommend that there be left out of section 1, chapter 138, the words "especially tuberculosis," and out of sections 2, 5, 6 and 7, such portions as recommend the "quarantine and destruction of such animals as have been exposed to the disease known as tuberculosis, but not themselves actually diseased," as being contrary to all well recognized authorities and precedents in dealing with and disposing of cases of tuberculosis among cattle. It has been repeatedly proven in this State that some one or more cases may be found present in a large herd, (which being destroyed) no other cases ever afterwards developed, and the three cases destroyed the present year show conclusively that although summered and wintered with other cattle, no suspicious cases remain in the herds from which they came, while should a single case of contagious pleuro-pneumonia be discovered in a herd of cattle, the only rational means to insure its extermination would not only be to destroy such an animal, but all others that had been herded with it. The frightfully contagious nature of this disease, and its treacherous and fatal character, have long since proved that to be the most economical and only certain manner of extermination. In several instances in the past our board have been notified of supposed cases of contagious pleuro-pneumonia, and it should, perhaps, be stated in this connection that an animal affected with common lung fever or pneumonia presents appearances so nearly identical with those of the contagious form, that it is often impossible to distinguish them as different while the animal is living, but that by a post-mortem it at once becomes apparent. Up to the present time, however, no case of *contagious pleuro-pneumonia has ever made its appearance in this State*, and it is believed that if the same watchful care and prudent legislation be exercised and continued in the future as in the past, this dread disease will never make its appearance in Maine.

The lung plague of the West, however, is no less dangerous than that which may be imported from Europe, and if we

should allow this scourge to reach this State, it will matter little whether it come from Liverpool or New York, its virulent and deadly effect will be all the same, and we believe it to be a matter of honor and consisteney, as well as self-protection, to prohibit the introduction of such cattle from infected States.

By the present quarantine regulations of Canada, cattle from the United States, en route to foreign ports, are required to be held for ninety days, and it would be of great service to American stockmen to have this embargo removed. We are just in receipt of a letter from Sioux City, Iowa, requesting the facts as to the present health and condition, as well as a brief history of any past general or special unhealthfulness of cattle within our State, as the Senate's special committee upon commercial relations with Canada will soon call up the matter, and enquire for evidence, and we have taken great pleasure in replying, to be able to furnish the information embodied in this report, as the best evidence we could possibly give of the "high standard" of health that is now enjoyed among the "flocks and herds" of Maine.

F. O. BEAL, *President*,
W. W. HARRIS,
GEO. H. BAILEY,
State Veterinary Surgeon.

STATE OF MAINE.

IN COUNCIL, January 2, 1889.

Twenty-five hundred copies ordered printed.

ORAMANDAL SMITH,
Secretary of State.