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1888

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1st report published.

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THIRD ANNUAL REPORT

OF THE

STATE VETERINARIAN.

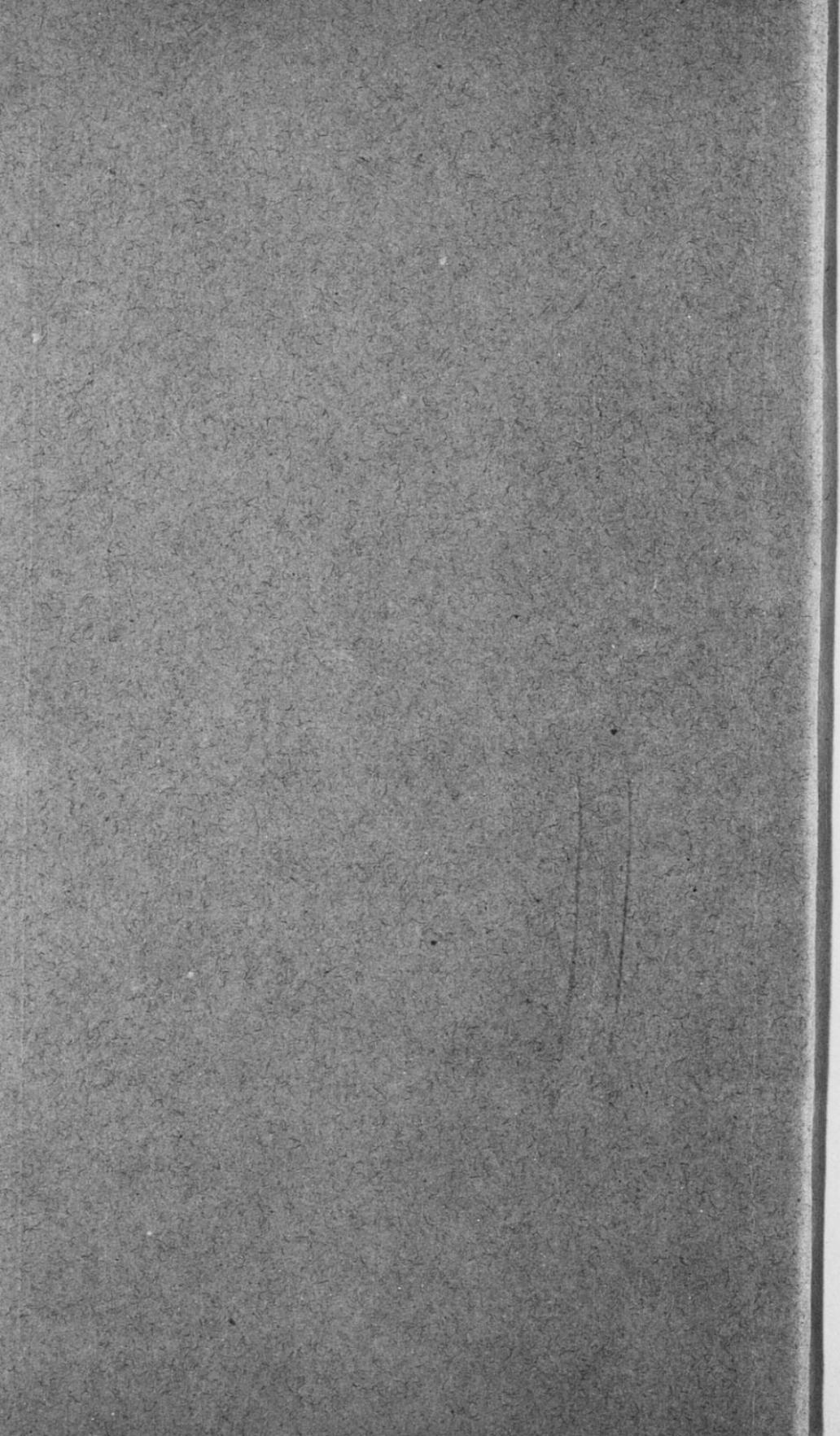
1886-87.

V. T. ATKINSON, V. S.

STATE HISTORICAL SOC.
1888
OF WISCONSIN.



MADISON, WIS.:
DEMOCRAT PRINTING COMPANY, STATE PRINTERS.
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OFFICE OF STATE VETERINARIAN.

TO HIS EXCELLENCY, JEREMIAH M. RUSK,

Governor of Wisconsin:

I have the honor to submit, as required by law, my third annual report as State Veterinarian. As no provision was made for printing the foregoing reports, it will be necessary to reproduce parts thereof, in order to convey a correct idea of the doings of the office.

Very respectfully,

V. T. ATKINSON, V. S.,

State Veterinarian.

563 Milwaukee Street, Milwaukee, Oct. 31, 1887.



REPORT.

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The office of State Veterinarian was created by the enactment of chapter 474, of the laws of 1885, which was amended by the enactment of chapter 76, of the laws of 1887. The first appointment was made in April, 1885. Since then nearly my whole time has been devoted to the performance of the various duties of the office, the greater part of which time has been taken up in traveling. The work has accumulated so rapidly that it has been impossible to attend to all cases promptly. As far as possible the work has been arranged so as to take up a number of places requiring investigation on each trip, and to reach home as nearly as possible once a week to attend to office work and correspondence, which has increased until it requires a good deal of attention.

The diseases requiring most attention were suspected cases of glanders, hog cholera, hydrophobia, anthrax, foot-rot, scab-in-sheep, malignant catarrh and lung consumption in cattle, lung-worms, ergotism and contagious pleuro-pneumonia. More time has been taken up in investigating suspected cases of glanders than any other disease. Fully two-thirds of the official correspondence has related to it. In thirty-four counties, one hundred and seventy-six animals were discovered to be afflicted with this disease, all of which have been destroyed. Sixty-five of the above cases were discovered during the last year. It has undoubtedly existed in the state for years and owing to its insidious nature been an almost imperceptible cause of great loss. A case illustrating the force of this suggestion, was found in one of the northern counties where a large lumber company had lost horses to the value of nearly seven thousand dollars in a period of about two years, from some unknown disease, as it was represented to me. I discovered eight well.

marked cases of glanders in the place, which were destroyed and as no other cases have been since reported, the disease has evidently been stamped out.

That it might be more fully understood, the following bulletin was issued:

BULLETIN ON GLANDERS

BY STATE VETERINARIAN OF WISCONSIN.

This disease has been found to be quite common among the horses of our state.

DEFINITION.

Glanders is a specific contagious and incurable disease, originating in the equine species, transmissible to man and other animals.

HISTORY.

This disease seems to have been the scourge of the equine race for a very long time. Historic mention of it is found as early as the fourth century.

NATURE.

Authors differ as to its origin. It was formerly believed to originate spontaneously with the horse, ass and mule, and nearly all the standard writers of the present day affirm that it may arise from neglected cases of distemper; or in horses that have been kept in badly ventilated stables, or in other unsanitary conditions. A few of the more recent writers, however, incline to the opinion that it never originates in that way; but that its continuance is due solely to its contagious nature. From my own observations I am inclined to believe that the former is the correct conclusion. That the disease is contagious there can be no doubt; but it is not infectious. Or, in other words, it spreads by inoculation only, and not through the air. A healthy animal can contract the disease only by coming in contact with a diseased one, or with some of the contaminating surroundings, such as hitching posts, watering pails, feed boxes, etc.

OTHER ANIMALS SUSCEPTIBLE.

Glanders occurs in the horse, ass and mule, and is transmissible to all the domestic animals except cattle, which seem to be unsusceptible.

MANNER OF INFECTION.

This disease owes its existence to a Bacillus or micro-organism, a low form of life which pervades the whole system of the diseased animal, and is found in the nasal and other discharges.

Susceptible animals are liable to become infected by contact with diseased animals, or any infected substance which is capable of conveying the diseased matter. The most common and dangerous of those are public watering trough and pail, and public sheds — the latter being by far the most dangerous; for when an animal has been driven or worked hard, and is placed in such sheds or stables as are commonly found at our country hotels, he is apt to smell of the surroundings, rub his head, and very likely bite the manger. If the animal be diseased, and allowed to stand for some time, the whole stall is contaminated, and if the partitions are not made close, the animal in the next stall is almost sure to put his nose near to that of the other horse, and snuff so as to take the greatest possible chance of drawing in the infecting virus. Stalls in such stables are likely to retain the infective matter for a long time, as they are not exposed to the natural disinfectants — sunlight, pure air, frost and rain. When healthy animals are brought in contact with the disease, inoculation may take place by the introduction of the virus into any open wound or sore, or by being brought in contact with the membranes of the eye, or nose, or mouth, the eye being particularly susceptible.

INCUBATION.

The period of time necessary to the development of the disease in an animal which has been exposed, is variously fixed by different authors as ranging from five to ninety days. A well-marked case came under my personal observation in which the period exceeded ninety days, and in order to in-

sure reasonable safety, I am of opinion that one hundred and twenty days should be allowed to elapse before animals which have been exposed may be regarded as free from the disease.

SYMPTOMS.

Glanders is divided into acute and chronic (chronic is most common) according to duration, and nasal, pulmonary and cutaneous, according to the organs most affected. Nasal glanders is the form in which the disease usually presents itself. The recognizable features are a discharge from the nose, ulceration on the membrane inside of the nose, and swelling of the glands between the jaws; each of those have characteristics peculiar to the disease. The discharge from the nose is generally from one side, though sometimes from both. When both are involved, one is generally more affected than the other. The matter discharged is yellowish-white in color, and very sticky, adhering closely around the nasal opening, and when from one side only, the adhering crusts give the nostril affected the appearance of being smaller than the other.

The ulcers on the membrane separating the nostrils have the appearance of small cupped out sores with ragged edges. They are sometimes situated so far up as not to be discoverable. When this is the case there is likely to be occasional bleeding from the nose. When the disease is well advanced, the ulcers frequently eat completely through the separation between the nostrils, and when the destructive process has gone far enough to involve the bones of the head, a very offensive smell is developed. This last symptom does not appear till the latter stages of the disease are reached, and should not be regarded as characteristic of glanders, as diseased teeth are likely to cause nasal discharge and offensive smell. An examination of the teeth is frequently necessary to ascertain the true nature of the disease.

The enlargement of the gland between the lower jaws is of an indolent nature, varying in size, usually about as large as an egg, tender to the touch, and in glanders does not gather and break.

FARCY — CUTANEOUS OR SKIN GLANDERS

is not a distinct disease, but another form of the same disease, the only difference being that, the inside of the membranes of the nose and head being the principal seat of the disease, it shows itself in the skin and general absorbent system. The noticeable symptoms are swelling of the legs (particularly the hind legs), and the dependent parts of the body, on which appear little sores or abscesses, which break and discharge yellow matter, and heal up to be followed by others, so that the limb or part is kept in a continuous state of suppuration and discharge. Similar little abscesses frequently appear on the side of the neck. Before they break they have the appearance of little knots connected by little hard lines or cords under the skin. The group of symptoms peculiar to either farcy or glanders may appear separately, so as to give the appearance of two distinct diseases, or they may both appear in the same animal. Animals dying of glanders almost invariably develop farcy before death.

PULMONARY OR LUNG GLANDERS,

very rarely develops independent of one or the other forms. When it does, the symptoms are very obscure; the most noticeable being difficult breathing and cough, which may arise from other causes, and should not be regarded with much suspicion, unless there is well-authenticated history of exposure to contagious influences.

DURATION.

This disease, in the acute form, may run its course in a few weeks. In its chronic form the animal may live for years, and apparently suffer no other inconvenience than a chronic nasal discharge. Such cases are generally the most dangerous sources of contagion. Mules and asses generally succumb more quickly than horses.

DIAGNOSIS.

A few common errors are worthy of consideration and correction at this time.

It is generally believed that the matter discharged from

the nose of a glandered horse has a very offensive smell, and that it will sink in water. Neither of these conditions are noticeable till the disease has advanced far enough to involve the bones of the head, and exactly the same conditions frequently result from diseased or broken teeth in which pus forms around the root, and being forced upward by impacted food, is discharged through the nostril. In this case there is an offensive smell from the beginning; and if the face be examined, an enlargement will usually indicate the location of the diseased tooth. If the tooth be broken, it may sometimes be detected by running the finger along the outside of the cheek, pressing hard enough to force the animal to open its mouth so that any irregularity may be felt. Glanders may be distinguished from horse distemper by the following symptoms. In distemper the glands between the jaw usually suppurate and discharge pus. In glanders it does not. Distemper generally attacks young animals and runs its course rapidly either to recovery or fatal termination. Distemper spreads more rapidly than glanders.

In reaching a conclusion the evidence of contagion should always be carefully considered, and the previous history of the case carefully inquired into.

TREATMENT.

Veterinary science has so far failed to produce a cure for this disease, and it is now regarded as absolutely incurable. Such being the case, and man himself being liable to contract it with the same certain fatality, the only rational manner of dealing with such cases is to destroy them and dispose of the carcass and disinfect in such a way as to prevent its further spread.

DISINFECTION

to be effectual should of course be very carefully carried out. Infected stalls, feed boxes and other like material, should be either torn out and burned, or carefully washed with hot water containing in solution at least four per cent. of carbolic acid. After careful cleansing in this way, the

whole inside of the stall should be carefully whitewashed with quick lime solution. When diseased animals have been kept in pastures, it is not generally best to attempt disinfection, as it would be nearly impossible to make it thorough. The better way is to use the pasture for cattle only for the balance of the season; the sunlight, snow, frost and rain being sufficient to effectually cleanse them during the winter months. Harness should be thoroughly soaked in warm four per cent. solution of carbolic acid and carefully scrubbed so as to free it from dirt. This may be conveniently done by putting the strap on a board, placing the foot on one end, and with an old broom giving it a thorough scrubbing. Bridles and halters had better be dipped in boiling water. Bits may be thrown into the stove until purified by fire. After the harness has been thoroughly cleaned, it should be placed in the sun for a few days so as to thoroughly dry, then oiled, when it will be again fit for use.

The carcasses of glandered animals should be burned, or buried deeply or otherwise disposed of so as to leave no chance of contagion.

LEGISLATION

bearing upon the subject will be found in chapter 467, laws of 1885, and chapter 76, laws of 1887.

In some cases it has been found necessary to resort to severe measures in order to inspire a wholesome respect for the law, which was either misunderstood or disregarded, as trading in glandered horses was frequently practiced. This was especially the case in Pierce and St. Croix counties, where animals were run across the state line to avoid inspection. An amusing case, and illustrating the difficulty met with, occurred at River Falls, where the owner of a glandered horse employed an irresponsible fellow to kill and bury it, which he pretended to do. While making an investigation there shortly afterwards, I was led to suspect that the bargain had not been faithfully carried out. I called upon the party who had been employed to dispose of the

case, and he firmly insisted that he had killed and buried the horse, and received his pay therefor. He even went so far as to point out the place of burial. I had him dig down, but he failed to find the carcass. After a fruitless search he gave up in despair, protesting loudly that some one must have stolen the body, as he was sure that was the place. I found the poor brute the next day at Prescott, in an advanced stage of the disease, and learned that he had passed through several hands before reaching that place. After having him destroyed, I returned to River Falls, and swore out a warrant against the party who had contracted to do the burying, leaving him to the mercy of an outraged community.

A provision in the law of 1885 which renders formal request for services from the Board of Health necessary before I was authorized to take any action, frequently prevented me from responding to calls as promptly as I otherwise would have been able to do; so that annoyance sometimes resulted, for it is often a cause of alarm in a community to have a suspected case upon their hands, though there is little danger of infection after the suspicion has been established. The danger is generally far greater from cases that are not suspected. This feature was eliminated by the last legislature.

HOG CHOLERA.

Hog cholera, which a few years ago prevailed to an alarming extent in many parts of the state, particularly in Buffalo, Columbia, Manitowoc and Rock counties, has in some instances reappeared, and has appeared for the first time in Barron county. The losses, however, are not nearly so great as last year; nor are the losses of the last year so great as those of the year before. This is perhaps in some measure due to a circular of advice which was issued in the spring of 1886, and distributed freely in the affected localities. The following is a copy of

SUGGESTIONS RELATIVE TO HOG CHOLERA, ADDRESSED TO THE HEALTH OFFICERS OF THE VARIOUS TOWNS IN THE STATE OF WISCONSIN.

"DEAR SIR.—In view of the great loss sustained by the pork raisers in this state from the ravages of Hog Cholera (Swine Plague), it is deemed expedient at this time to call your attention, and, through you, the attention of the community in which you live, to the importance of taking active measures to prevent its further spread.

"If the disease has prevailed in your locality, I wish you would call the attention of the owners of infected premises to the urgent necessity of a thorough cleaning and careful disinfection, for it is an established fact that its germs will both live and multiply in old straw piles, manure heaps and similar substances. After disposing of all such material, either by plowing under, burning or storing in a secluded place, the pens should be thoroughly cleansed by washing with a solution of carbolic acid in the proportion of five pounds to a barrel of water, or copperas (Ferri sulph.) twenty-four pounds to the same quantity of water. Burning sulphur in the pens with the doors closed also has a wholesome effect. After disinfection, the doors and windows should be thrown open, and light and air freely admitted. But so great is the vitality of the virus, that even with all possible precaution and the most careful disinfection, there is still danger of the disease reappearing; and in some instances it has been found advisable to abandon the keeping of hogs for a season.

"If the disease appears or is now prevalent in your neighborhood, the effort should, of course, be directed to prevent its spread; for this purpose all communication between healthy and diseased herds should be at once suspended. Visiting infected premises out of curiosity or for the purpose of gaining information, has in several instances cost our farmers dearly; for, unfortunately, on their return home, they not only carried with them some knowledge of the symptoms of the disease, but about their clothes and on

their soiled shoes lurked its germs ready to perform their deadly work.

"The carcasses of diseased hogs should be buried deeply, and not sold for rendering. Wagons employed by such establishments have done great harm in some parts of Illinois by carrying the infection from one place to another; running streams should be avoided, as the disease frequently spreads along their courses.

"When the disease makes its appearance in a herd, the sick hogs should be separated from the healthy; in so doing, always remove the healthy from the infected pens.

"Treatment of the sick is not generally advisable, but it is well to give those that have been exposed to the contagion ten drops of pure carbolic acid for every hundred weight of pork, mixed with the food. The intention being to fortify the system as much as possible against the disease.

"If your neighborhood is still free from the malady, too great care cannot be taken to prevent its introduction. Hogs brought from a distance should always be regarded with suspicion, especially so if they have made a journey in the cars or passed through any of the large stock yards.

"Trusting that you will co-operate earnestly in the movement, I have the honor to be

"Yours truly,

"V. T. ATKINSON, V. S.,
"State Veterinarian."

That this disease is purely contagious there can be no doubt. In all the cases that have come to my notice, the outbreak can be clearly traced to the introduction of diseased hogs. The first symptom to attract attention is vomiting or offensive diarrhoea. This is followed by loss of appetite, dejected appearance, arched back, weak gait, scaly looking skin, rapid breathing, coughing when disturbed, a desire to hide in a dark place, the belly is generally tender to pressure, and the skin between the legs, under the body and behind the ears is covered with red spots, which become larger and purplish black as the disease advances. The

mortality is always high, but the younger the animal the greater the proportionate loss.

The practice of some farmers in selling their diseased hogs cannot be too highly condemned. That such meat is unfit for food there can be no doubt. I have called the attention of the State Board of Health to this practice, and as the law imposes a heavy penalty, it is to be hoped that they, co-operating with the local board of health, will be able to suppress such traffic.

ANTHRAX.

Anthrax has appeared among the cattle in the counties of Brown, Calumet, Columbia, Crawford, Fond du Lac, Green, Jefferson, Kenosha, Manitowoc, Monroe, Ozaukee and Waukesha. The loss from this cause has not been very great, amounting in all to about eighty head. In each case the outbreak was traceable to local influences, and showed little disposition to spread.

Prof. James Law writes as to the development of Anthrax, and mentions the following conditions as likely to produce it.

“FIRST:— Rich surface soil abounding in organic matter and impervious subsoil preventing natural drainage.

“SECOND:— The frequent inundation of the banks of rivers flowing through level country, and the drying up of ponds and lakes, leaving such organic matter in their basins.

“THIRD:— A continuation of warm dry weather, which favors organic emanations from such places as the above.

“FOURTH:— A condition of the system of the animal predisposing it to the reception and growth of the poison consisting, in loading of the blood with plastic or waste organic matter, as in overfed plethoric animals; in those making flesh rapidly; in the young and rapidly growing; in those rendered unhealthy by impure air, overwork, unsuitable food or water.

"FIFTH: — Sudden chills when the poison is already present — hence the extreme variations of the temperature of night and day.

"SIXTH: — A close, still atmosphere."

It is generally the best-fed and most vigorous animals that are attacked. In its most acute form they fall suddenly and die in the midst of convulsions, blood-colored foam escaping from the mouth and nostrils! In other cases the course of the disease is not so rapid. Loss of appetite is the first symptom noticed, followed by suspension of rumination. Weakness or prostration ensues, with stupor or great excitement, or bleeding from the nose. The skin is alternately hot and cold. Pressure along the spine and ribs causes pain and violent muscular contractions, especially of the neck, which become more marked as the prostration increases. The animal staggers, and progression is nearly impossible. There is diarrhoea, the fæces are dark-colored and very bad smelling. Death may occur in a few hours, or the animal may live for two or three days. Recovery seldom takes place. In this disease more attention should be paid to prevention than treatment. When it appears in a herd, the cattle should be at once removed to another pasture, one in which they are not likely to take on flesh so rapidly. Bury all animals that die, deeply, and do not remove the skins, for there is danger of inoculation and dangerous results.

What is commonly called "black-leg" among calves is another form of this disease, but it is too well known to require description here. The same precautions should be ensured.

HYDROPHOBIA.

Hydrophobia has prevailed in some parts of the state, and in January, 1886, it was the subject of a special report which I made to the State Board of Health at its request, which was as follows:

"To the Honorable State Board of Health of Wisconsin:

"GENTLEMEN: In compliance with a resolution passed by your board at a recent meeting, I have made investigations

concerning the existence and spread of hydrophobia in this state. The most alarming reports came from Milwaukee, where it has created considerable alarm. On the 15th or April a large Newfoundland dog, supposed to be mad, made a circuit of the northwestern part of the city, and was killed by the police after he had bitten several children, and an unknown number of dogs. The only symptoms of hydrophobia that I could establish was a disposition to snap and bite all that came in his way, but no inclination to remain and fight, invariably snapping and pursuing his journey. A post mortem examination revealed evidence of a morbid appetite and glandular enlargements. Two days later a small Spitz dog developed similar symptoms, and traversed about the same part of the city, and was killed after biting two persons and several dogs. The wounds on six of the seven children bitten by the first dog received immediate medical attention, whether those bitten by the smaller dog did or did not, I could not ascertain, but as he was quite small, and the clothing worn at that season is generally heavy, the danger of inoculation was reduced to the minimum. However, no evil results have followed in any of those cases. All the dogs known to have been bitten by either of those dogs were immediately destroyed. There was no further cause of alarm till November 11th, when a large, rough looking dog went through the same part of the city showing the same symptoms, and after biting one or two boys and several dogs, was killed. December 10th, another large dog, acting similarly, made a tour of the same part of the city. Several dogs, but no persons were bitten. These are the only cases of which I could learn in which symptoms were developed that could justify a reasonable suspicion of the existence of hydrophobia. The sergeant of the West Side police station informed me that his men had killed seventy-four dogs known to have been bitten, some of which were thought to be developing the earlier symptoms of the disease.

"Jos. Thorp, aged nine years, bitten November 11th, died December 16th, attended by Dr. Dorland. This case was seen by Drs. Mason, Ogden, Martin and Williamson, all of

whom pronounced it hydrophobia, except Dr. Williamson, who expressed some doubt.

"Geo. Tachenschmidt died of hydrophobia November 27th. He was bitten at about the same time as the Thorp boy, and it is thought by the same dog. He was attended by Dr. Meyer, and was seen by Drs. Schorse, Martin, Hanson and Kramer, all of whom agree with Dr. Meyer, except Dr. Kramer, who questions the transmissibility of hydrophobia.

"In December a man named Kruse, of the town of Milwaukee, just north of the city, died showing well marked symptoms of hydrophobia. He had been bitten by his own dog, which was suffering from the disease. This case was attended by Drs. Senn and Schorse, both of whom assert that there is no doubt about the cause of the death.

"An aged lady, named Mrs. Lucht, living on the South Side, was bitten by a strange dog which she discovered in her cellar. After biting her, the dog attacked a child standing near by, but did not wound her. Mrs. Lucht was taken ill about six weeks after, and died January 4th. Her attending physician, Dr. Richards, says she died of hydrophobia. This case was also seen by Drs. Brown, Langland and Martin, all of whom agree with Dr. Richards.

"A farmer named Hill of the town of Newton, of Manitowoc county, was bitten in the hand by a dog showing symptoms of hydrophobia, and died about the 1st of December, showing all the marked symptoms of that disease. Another member of the family, bitten by the same dog in such a way that the teeth passed through the clothing before entering the flesh, has shown no symptoms of the disease as yet. This case was attended by Dr. F. S. Luhmans of Manitowoc.

"In making this report I have so far endeavored to confine myself to stating facts. I could have gathered evidence of two other cases, but they seemed too vague to warrant taking your time.

"To sum up the evidence:—The history of the symptoms in any one dog, although very suspicious, would not be sufficient to satisfy me of the existence of hydrophobia. But when we take into account the fact that several similar

cases have developed in the same part of the city within a few months, and that co-incidentally thereto four persons bitten by dogs showing such symptoms have been attacked and died of disease which the attending physician pronounced hydrophobia in every case, and those called in consultation, or who have seen the cases concur with the attending physicians (except in two instances), it seems to me that there is evidence of the disease and cause for alarm.

"Any danger there may have been has now, I think, passed. Since the first appearance of the disease the police have killed 218 dogs. They are now operating under an ordinance which makes it their duty to kill all unmuzzled dogs found running at large.

"Respectfully submitted,

"V. T. ATKINSON,

"*State Veterinarian.*"

"January 29, 1886.

Since that time I have been informed of an outbreak in the village of Burlington, Racine county, but as no persons were known to have been bitten, and as it is some time since the last case appeared, it is quite likely that nothing more will be heard from it.

SCAB IN SHEEP.

Shortly after my appointment, the State Board of Health called my attention to a flock of sheep that had been brought from Chicago to Fond du Lac county. They numbered about one hundred, and were badly afflicted with scab. The owner destroyed about thirty as worthless, and the remainder were held in quarantine until a cure was effected, and there was no further danger of spreading the disease.

TUBERCULUS.

Tuberculosis or lung consumption in cattle does not seem to prevail in this state to any considerable extent. My attention has been called to it in only five instances, in Kenosha, Oconto and St. Croix counties. In all, six deaths occurred.

ERGOTISM.

During the summer of 1885, I was notified as to a herd of cattle in Green county, suffering from disease of the feet. Investigation showed that the disease was identical with that which appeared in Kansas in the summer of 1884, and was due to the use of ergotized grasses. Ten out of sixteen animals were afflicted, four or five died or were destroyed. No other herds in the locality have suffered from this cause, though abortions, which were likely due to the same cause, have been frequent.

A few cattle near Oil City, Monroe county, were similarly afflicted. The loss in this case was small.

During the fall of 1886, a number of cattle in Rock county died which had been pastured in corn fields after husking, and had evidently been eating too freely of corn smut, of which there was a great deal that year, death resulted from impaction of the third stomach, and it seemed that the worst features of the difficulty were noticed in animals that did not have a regular water supply, but were allowed to drink freely while the stomach was full. In such cases the deaths were very sudden and quite frequent; while on the other hand, where water was plenty, very little inconvenience was noticed.

LUNG WORMS.

During the fall of 1885, a number of calves owned near Neillsville, Clark county, were afflicted with lung worms (*Filaria Bronchae*). A number died before the nature of the trouble was discovered. Most of the cases yielded readily to treatment, and the outbreak was soon suppressed. As the disease is liable to reappear, and is easily controlled when understood, I will give a brief explanation of its nature.

This disease usually attacks calves, but lambs and foals also suffer from it. The symptoms are, a slight, husky cough at irregular intervals, which rapidly becomes more frequent and violent. The breathing is rapid and labored,

the animal soon becomes unthrifty and emaciated, hide bound with sunken eyes, swelling beneath the jaw, chest or belly, and loss of appetite. It wanders away from its fellows, and, sinking gradually, if unattended dies in ten or fifteen days. The whole trouble is caused by numerous little worms in the air passages of the lungs, which have been taken in in the form of little eggs which were deposited in the food or water of which the animal partook. The worms may frequently be found in the mucus coughed up, and can be readily detected in the lungs on post mortem examination. The treatment is very simple and effectual. The main object of course is to destroy the worms, which is easily done by compelling the animal to inhale sulphur fumes. For this purpose all the diseased and suspected cases should be enclosed in a moderately tight room, and small quantities of sulphur burned to impregnate the atmosphere with the fumes. Care should be taken not to get it so strong as to cause violent coughing. The inhalation should be continued for half an hour, and an attendant should remain with them to be ready to admit fresh air quickly if it should become necessary. The same proceedings should be repeated every other day till all cough has disappeared, so as to be sure and kill all the young worms as fast as they are hatched. The pastures upon which such animals have been kept should not be used for young animals again during the same season.

INFLUENZA.

Last fall a typhoid influenza prevailed in Brown county, around Green Bay. Twelve or fifteen horses died. The trouble was likely caused by scarcity and impurity of water supply.

During the present season a number of horses in Brown, Marinette and Winnebago counties have died from an acute intestinal disease, to which complaint local veterinarians were unable to assign a name. All, however, agreed that it was the result of the very hot, dry weather of last season. The malady has disappeared since the cool weather set in,

and unless another extremely hot summer occurs, it is not likely to reappear.

Strangles, horse distemper and mild influenza, are reported from several parts of the state, chiefly from the larger cities; but in no case was the loss sufficiently large to attract particular attention.

CONTAGIOUS PLEURO-PNEUMONIA.

On the 25th of September, 1886, I noticed in the Milwaukee Sentinel, an account of a supposed outbreak of contagious pleuro-pneumonia in the city of Chicago. The day following, I visited that city, and found the report fully verified. The facts, as I then learned, were that the disease had been discovered by the State Veterinarian of Illinois, at Ridgeland, a small suburban village. From there it was traced to the large distillery stables of the city, and from there to several smaller dairy establishments. Several days were spent in investigating the outbreak in company with the Live Stock Commissioners, and the State Veterinarian of Illinois and his assistants, and representatives of different states, and the National Bureau of Animal Industry, and I was present at several post-mortem examinations. As soon as I was fully satisfied as to the nature of the disease and the necessary steps to be taken, I notified our governor, when the following was issued:

STATE OF WISCONSIN—PROCLAMATION BY THE GOVERNOR.

QUARANTINING PLEURO-PNEUMONIA.

WHEREAS, the following communication has been received from the State Veterinarian:

"To His Excellency J. M. RUSK, Governor of Wisconsin:

"WHEREAS, I find upon investigation, contagious pleuro-pneumonia exists among the cattle of Chicago, Ill., and a great many cattle have been exposed to its contagious influences, to such an extent as to endanger the health of the live stock of Wisconsin;

"I therefore recommend that your excellency, by proclamation, forbid the importation of all cattle from the state of Illinois into the state of Wisconsin, except when accompanied by a satisfactory certificate of health

issued by the State Veterinarian of Illinois, or one of his assistants, or an Inspector of the United States Bureau of Animal Industry, showing that such cattle are free from any such disease, and have not been exposed thereto.

“Respectfully submitted,

“V. T. ATKINSON, V. S.,

“*State Veterinarian.*”

Now therefore, in pursuance of the provisions of Chapter 467, Laws of Wisconsin for the year 1885, entitled “An act to suppress and prevent the spread of infectious and contagious diseases among Domestic Animals,” approved April 13, 1885, I, Jeremiah M. Rusk, Governor of the State of Wisconsin, in compliance with the foregoing request, and by virtue of the authority vested in me by law, hereby forbid the importation into this state, from the state of Illinois, of all cattle, except when accompanied by a satisfactory certificate of health, issued by the State Veterinarian of Illinois, or one of his assistants, or an inspector of the United States Bureau of Animal Industry, or such other regulations as may be prescribed by the State Veterinarian of Wisconsin.

In testimony whereof, I have hereunto set my hand, and caused the
 [SEAL.] Great Seal of the State of Wisconsin to be affixed.

Done at the city of Madison, this 27th day of September, A. D. 1886.

By the Governor:

J. M. RUSK.

ERNST G. TIMME,

Secretary of State.

Since then I have endeavored to keep a careful watch over the interests of the state in that direction. I again visited Chicago, and had a thorough understanding with Dr. Salmon, Chief of the Bureau of Animal Industry, and the authorities of Illinois, and placed at their disposal a blank form of certificate of health, made in compliance with the proclamation, requiring the maker to satisfy himself beyond all doubt that there could be no danger of infection from the animals certified to, and if necessary to do so, to require affidavits.

The general offices of the different railway companies doing business between this state and Illinois were also visited, and, at my suggestion, circulars of instruction were issued to their agents in Illinois, directing them not to receive cattle for Wisconsin points, except when accompanied by certificate. Since then regular reports received from the

principal examiners, indicate that the movement of cattle from Illinois to this state, has been pretty nearly suspended.

The National Bureau of Animal Industry, acting with the Board of Live Stock Commissioners of Illinois, have put forth a vigorous effort to stamp out the disease. Large sums of money have been expended, and all the affected animals, and those which had been exposed, have been killed so far as they could be discovered. At the present time a vigorous system of inspection is being carried on. Shortly after the first appearance of the disease a careful inspection was made of all such parts of the state of Illinois as were in any way likely to be affected, and as no trace of the disease could be found outside of Chicago, and as our quarantine regulations included the whole state, and was working unnecessary hardships on shippers, it was deemed best to modify it. The following was accordingly issued:

STATE OF WISCONSIN.

A PROCLAMATION BY THE GOVERNOR.

WHEREAS, It appears there is no longer reason to suspect that contagious pleuro-pneumonia exists among the cattle of the state of Illinois, except in the city of Chicago and the immediate vicinity.

Now therefore, I, Jeremiah M. Rusk, governor of the state of Wisconsin, by virtue of the authority vested in me by law, do hereby modify the restrictions imposed by my proclamation, dated September 27th, 1886, so that it shall apply only to the county of Cook, in the state of Illinois.

In testimony whereof, I have hereunto set my hand and caused the

[SEAL.] Great Seal of the State of Wisconsin to be affixed.

Done at the city of Madison, this 27th day of June, A. D. 1887.

By the Governor:

ERNST G. TIMME,

Secretary of State.

J. M. RUSK.

It is impossible to say where this disease originated, but it is quite probable that it is a continuation of the outbreak which occurred in several parts of Illinois three years ago, for the managers of some of the distilleries (although doubting the nature of the disease) assert that it has existed in the stables for nearly two years. That there was abundant opportunity for the disease to spread at that time there can

be no doubt, as the local quarantine imposed upon suspected herds amounted to no more in some instances than separation by a fence; and it is believed that the disease frequently spreads long distances through the atmosphere, the isolation, of course, amounts to nearly nothing as a protective measure.

While making a tour of inspection shortly after the creation of this office, I was so unfavorably impressed with the precautions being taken, that I seriously contemplated recommending a state quarantine against Illinois, and would have done so had it not been that the law creating the Live Stock Commission of that state was then about to go into effect, which it did shortly afterwards. And the commissioners, after looking over the ground, reported to their governor that they believed the state to be free from contagious pleuro-pneumonia. Being misled by this statement, the precaution was not taken. Fortunately, however, we have so far suffered no other ill effects than slight inconveniences, and with continued vigilance we may hope to escape this scourge. Our greatest danger now seems to be in a feeling that exists among the live stock brokers of Chicago, that the disease amounts to nothing, and they are so loud in their protestations that the embargoes placed by the different states are unnecessary, and representing as they do great wealth and influence, there is danger that their influence may tend to relax the vigilance of the inspectors. Every possible precaution will be taken to prevent any such misfortune, for it is fully appreciated that the danger from this source is the greatest that threatens our herds.

EXPERIMENTS.

A series of experimental inoculations were begun a few weeks ago. The subjects used were rabbits and guinea-pigs. The tests were made with a view of getting further light on the heritability of glanders. Nothing has yet been established, except that the disease may be transmitted to a second generation, which had already been pretty

clearly demonstrated. The tests will be continued till this feature of the disease is as clearly understood as it can be in this way, when other diseases will be taken up.

In taking up a study of this kind many obstacles are met with; and in order to proceed with any certainty it is imperative that the student to some extent familiarize himself with the peculiarities of the subjects to be used, which necessitates a great deal of careful observation. The guinea-pig seems especially suited to work with glanders germs, as they are not very expensive, are easily kept, and in them the disease does not generally run its course very rapidly. Several generations may be produced in a comparatively short time.

The common field mouse is also a good subject in many respects, but it is too small for accurate investigation.

OUR LIVE STOCK.

That some idea of the importance of the live stock interests of the state may be had, a brief quotation is made from the last census report, which shows as follows:

LIVE STOCK.

	<i>Number.</i>	<i>Value.</i>
Horses and mules.....	388, 132	\$31, 049, 563 00
Cattle and calves.....	1, 543, 899	26, 062, 598 16
Sheep and lambs.....	1, 427, 137	2, 353, 015 50
Hogs.....	1, 196, 200	4, 472, 658 05
Total.....	4, 565, 368	\$63, 937, 834 71

PRODUCTS.

	<i>Number.</i>	<i>Value.</i>
Cattle and calves slaughtered.....	221, 377	\$5, 981, 486 25
Sheep and lambs.....	296, 803	793, 018 07
Hogs.....	1, 047, 150	10, 323, 776 40
Total.....	1, 565, 329	\$17, 098, 280 72

DAIRY PRODUCTS.

	<i>Value.</i>
Cheese.....	\$2, 084, 231 92
Butter.....	5, 850, 402 55
Total.....	\$8, 835, 234 47

WOOL.

Value of.....	\$1, 337, 088 65
Total value of products.....	<u>\$27, 270, 603 64</u>

A comparative list of live stock interests of the states and territories given in the National Census Bureau of 1880, places Wisconsin eighth in point of importance. In dairy products we stand still higher, being eighth in amount of butter produced, and third in cheese. When we consider the magnitude of our live stock interests, we are indeed to be congratulated upon so favorable a showing, from a sanitary point of view.



