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AMERICAN VETERINARY REVIEW.

APRIL, 1905.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, February 15, 1905.

"PROCEEDINGS" OF THE A. V. M. A.—When I mailed my "Chronicles" for March, I had not yet received the printed proceedings of the A. V. M. Association for 1904. They only came three days later—and it is with pleasure that in this my first "Chronicles" for our Volume XXIX, I can notice it—only notice it, for certainly later on I will ask permission to say a word or two more in behalf of that part of it relating to "Needed Reforms in Veterinary Education."

The "Proceedings" of the forty-first meeting—[how far these figures bring some of us back]—forms a handsome volume and the Committee on Publication and its Chairman, Dr. Richard P. Lyman, deserve credit for the prompt manner with which the work has been accomplished and the neat manner in which it has been presented to our *confrères*. I am sure that all the members of the Association have read it over and over again, thus refreshing their minds upon the treat they had in St. Louis. It is unnecessary for me to review the work, as its contents are already known to our readers.

I must, however, ask one question. The Association does good work; it meets regularly once a year. It records its labor in a neat form and issues a valuable book; but does it let the world know of it? Are those proceedings to remain only for us? or will others be allowed to know of them? In other

words, would it not be proper to send some of these proceedings, as complimentary from the Association, to the libraries of some veterinary schools and societies of Europe?

It may be objected that proceedings of similar organizations of Europe are not sent to our Librarian. The reason may be that our existence being unknown, it is not possible for them to do so.

Anyhow, this is only a suggestion I make!

* * *

THE EXPERIMENTS WITH VON BEHRING'S VIRUS.—In the January "Chronicles" (No. 10 of our last volume), I was telling you of the experiments which were to be organized by the Société de Médecine Vétérinaire Pratique to test the value of von Behring's antituberculous Jennerisation. To-day I will tell of the work so far done. Prevented from being present by illness, I did not assist in the first part of the experiment which took place December 11 last. There were 21 calves, aged between 4 and 6 months, and belonging to various breeds. They had been all submitted to the tuberculin test a few days previous and on December 11, before a large representation of the veterinary profession, they were injected in the left jugular by Prof. Vallée, with an emulsion containing 4 milligrammes of dried vaccine, which had been sent from von Behring's laboratory.

After the operation, Prof. Vallée held a conference on the subject, and on the object of the vaccination, in which he gave the history of the discovery claimed by von Behring, who uses as vaccine cultures of human bacilli, dried in vacuum. The first inoculation made, twelve weeks after another injection of bacilli, five times stronger, shall be made. In this experiment all the precautions are taken to prevent any possible infection, and if any of the calves react to the injections of tuberculin which shall be made several weeks after each vaccination, the nocicity of this could not be contested. Should this occur, the infected animals shall be kept to watch the development of the lesions promoted by the vaccination. Several weeks after the

second vaccination—therefore about June, 1905—all the vaccinated subjects shall be submitted to severe tests of infection, of various nature, and exposures to bovine tuberculous virus at the same time with an equal number of healthy witnesses. That date in June will be looked forward to with interest.

* * *

THE DANGERS AND DIFFICULTIES OF VON BEHRING'S METHOD.—To read this description of the *modus operandi* seems to show how simple all the manipulations are. But, nevertheless, they are not, and Prof. Vallée, as others have already done, points out some difficulties which, on account of their being rather serious, will have to be overcome before the operation can enter daily practice. Indeed, every one who has experimented with the vaccine agrees in saying that the preparations and the vaccination are not exempt from the greatest danger. According to some German writers, the manipulations preceding the operation are very dangerous. For instance, the veterinarian must prepare the emulsion himself, at the time it is to be used. He must crush the virulent powder into a mortar with sterilized water, added little by little, and, says Vallée, "this manipulation is most certainly dangerous, made as it will be in open air and from which minute dust of the dangerous bacilli will be spread more or less." While doing it one must protect himself by covering his nose and month with a regular mask of wadding, and even then will that be sufficient? It is reported that the manipulations of preparing the dried virus have already been followed with infection among the working class at Marbourg, where this powder is prepared. I must, however, say that Prof. Vallée has already found a way to render the making of the emulsion almost harmless. One must bear in mind that it is very essential that the emulsion be as thorough and perfect as possible, or the quality of the vaccine will be defective by the deficiency in the number of bacilli introduced. This first objection is very important, even if it can be overcome. The second, which is attributed to Prof. Vallée by Mr. Pion, in the

Semaine Vétérinaire, says that the method of immunization of von Behring remains, scientifically speaking, very uncertain. I have attentively read Prof. Vallée's remarks and failed to find this expression.

* * *

PROF. LIGNIÉRE'S METHOD.—Of course the discovery of a vaccine is the object of many investigators to-day, and it is not surprising if some one would not take advantage of the experiments now carried out by the Société de Médecine Vétérinaire Pratique. Indeed, at the stables where the 21 calves were inoculated (method von Behring), there were two others. These had been submitted to the same minute tests of tuberculin and were also on December 11 injected under the skin of the left side of the neck with an antituberculous vaccine sent from Buenos Ayres by Prof. Lignière. What the vaccine is, I do not know; and if it succeeds it will certainly take the lead over that of von Behring, as it demands only one vaccination. These two Lignière calves will be submitted to the same exposure of infection. The result will certainly be very interesting, even if it has to be waited for so long.

* * *

OTHER EXPERIMENTS ALONG SIMILAR LINES.—If the method of von Behring is to-day in France the object of a practical test, in other parts of the world it has been experimented with more or less largely. Bang's method was surrounded with great difficulties; that of Ostertag also, besides being too long in its results; that of von Behring was from the start accepted by many with enthusiasm; experiments were started, and already reports are coming in telling us of the value of Jennerisation, and giving us the opinions of those who have resorted to it. In the *Revue de Leclainche* of December 15 there is a general review of all that has been done, which is concise and interesting.

After reviewing the investigations of de Schweinitz, Schroeder, McFadyean, and Thomassen, the writer arrives at the experimental test of von Behring's method.

Pearson and Gilliland, recognizing the immunizing value of inoculations of cultures of human bacilli, are carrying on experiments to test the duration of the immunity they confer. Schlegel, Lorenz, and Eber receive bovines immunized by von Behring with the object of controlling the immunization; but the experiments that follow have but a limited significance, as they were not placed in the conditions of practical value, and the results, about the same by all, are yet doubtful. Hutyra experiments also, but his works, interesting as they were, do not bring a direct demonstration of the efficiency of vaccination. They show that it increases the existence of the organism, but that the vaccinated subjects do not resist intravenous virulent injection. All the previous experiments in the laboratory are of little value, as no eventual condition of a useful vaccination has been looked for.

* * *

VON BEHRING'S METHOD IN PRACTICE.—The method has received a wide application in central Europe. Thousands of animals have been vaccinated, and in a short time von Behring will publish the results of ten thousand inoculations. “ . . . Some of the inoculated have tuberculous lesions that cannot be explained except by the vaccine.” The supposition of Rœmer that the lesions found were due to infection previous to the vaccination cannot be entertained; the animals had been tuberculated before vaccination. There is no doubt that Jennerisation, at least with the vaccines that were used in some cases, is liable to give rise to a chronic tuberculous evolution. As very rightly remarked, by de Schweinitz and Schroeder, it is important to know exactly the duration of the surode of the human bacilli thrown into the cattle. Even when the vaccination would give only mild lesions, limited and harmless for the health of the animals, there would be an enormous objection to promote in an animal which furnishes man with meat and milk the development of a human bacillus much more dangerous for man than the normal bacillus of cattle.”

Of course, the statistics will give the frequency of accidents,

the duration of the provoked infections, that of the conferred immunity . . . let us wait and hope for their correctness, and in the meanwhile assume the conclusions generally arrived at by Casper and others:

(1.) Young bovines can be vaccinated against bovine tuberculosis. The vaccination is realized experimentally by various processes, and principally by the intravenous injection of human bacilli.

(2.) The practical value of the vaccination cannot be established until the results of the experiments made in various places shall be known.

(3.) Von Behring's vaccination is not always harmless even for young animals.

(4.) The technic of the vaccination must be considerably improved.

* * *

DR. PHYSALIX'S DISTEMPER PROPHYLAXIS.—In the same "Chronicles" of January I thought I would complete my communication relating to the Physalix prophylactic treatment of distemper in dogs, and I sent you the report made by the commission appointed in England to test its value. This report, signed by veterinary authorities in England, among them Prof. McFadyean, was that of the majority. But it seems that there was a minority in the commission. The *Veterinary News* has in several numbers given the report of the minority, signed by two members, Mr. H. Gray and E. Lionel Shoud. It is nothing but justice that I should give you the conclusions of the report of the two gentlemen. They read as follows:

"From what we know of the facts of the whole of the case we conclude that these investigations, although of great interest from a clinical point of view, have not by any means solved the question, viz., to prove or disprove the utility of the vaccine introduced by Dr. Physalix to prevent distemper.

"We also believe that the common source of infection was . . . We consider that the evidence obtained should not be allowed to be buried, but published, and that further inves-

tigations should be undertaken for the benefit of the veterinary profession and dog-owning public."

The criticisms of the report of the minority have been rather severe, if I can judge by some of the letters which have appeared, but certainly those who are very desirous of knowing the whole truth of the preventive inoculations of Dr. Physalix would be glad to see further investigations carried out. The subject is sufficiently important and offers sufficient interest to support the suggestion. Time will tell if more experiments will be undertaken. I am in doubt of it. Those who know of the peculiarities and conditions of distemper will readily appreciate the reasons which will render such experiments entirely exempt of possible causes of failures.

* *

TROPICAL DISEASES AT THE INTERNATIONAL CONGRESS.—In a previous issue the attention of our readers has already been called to the Eighth International Veterinary Congress which is to be held from the 3d to the 9th of September, 1905, at Budapest. I have received lately documents which will bring new interest to this great gathering, viz., the information of an international conference on tropical animal diseases. In 1904 delegates of the South African colonies of Great Britain held a meeting at Capetown, where prophylactic measures to be taken against the contagious diseases of meridional Africa were discussed. After the meeting the question was agitated to bring the subject before the Eighth International Congress, and finally an organization was made up of all the members and delegates of the States and colonies of meridional Africa, of Australia, India, Egypt, United States of America, of South American States, and in general of all countries and colonies where domestic animals are suffering with diseases analogous to those prevailing in South Africa, with the object to have the questions relating to them discussed in a scientific manner. Although in its programme, the Eighth International Congress had already included the consideration of tropical diseases, the organization of the committee at Capetown and the object of its

labors were fully taken into consideration, and measures taken to facilitate its labors. Those of our friends who in South Africa, in Philippines, etc., may have had opportunities to witness some of the diseases in question will no doubt find much interest in following the work of the Congress.

* * *

THE NOCARD MONUMENT, AND AMERICA'S SHARE IN IT.—I believe that the generous gift of the American Veterinary Medical Association, which was handed in a short time since, was about closing the subscription which was open to the world for the erection of a monument to the memory of Prof. E. Nocard. The total amount received is in the neighborhood of \$10,000, of which veterinarians of North America gave a good share—nearly \$500. Truly, it is but a twentieth of the whole amount, but when one takes into consideration the difficulties that were present, I find and the committee in sending their thanks agrees with me, that our American brethren have done well. The monument will be simply grand, and will be placed in the Alfort School. It is said that the inauguration will take place in the second half of October, 1905.

A. L.

"THE VETERINARIAN AND ANIMAL HUSBANDRY."

In our editorial remarks in the January number, citing instances where a number of veterinarians in Pennsylvania and New York had attended and addressed meetings of stock breeders and farmers upon subjects connected with the diseases of domestic animals, as well as other questions relating to animal husbandry, the point sought to be impressed was the great good which might thus be caused to flow to our profession through this coöperation, since a better understanding of our worth and needs could be produced upon the minds of stockmen. It was shown how by this means protective laws and measures for the betterment of live-stock interests could be secured if agriculturists understood us more thoroughly and were hence more in sympathy with our ambitions and necessities. The article did not have for its object an enumeration of those veterinarians of

the country who have labored in this direction. Had this been attempted there are many men in every quarter who should have been included. Indeed, the pioneer workers in this field were not mentioned, because our object was merely to draw attention to a conspicuous succession of meetings along the Northern Seaboard which were distinguished by the presence of veterinarians, whose activity was deemed most commendable. Had we striven to give a list of such missionaries, there is one veterinarian in the South whom we should have placed in the first line, for he has done more to make his profession understood and respected in a land where the term "veterinarian" was unknown but a short time ago, than any man in this country. Dr. Wm. H. Dalrymple, of Louisiana, has for the past nine years been Secretary of the Louisiana State Agricultural Society and the Louisiana Stock-breeders' Association, and for several years past has represented his State on the Executive Committee of the National Live Stock Association. There is scarcely a convention of breeders and agriculturists in that section where his voice is not sought as a feature of the meeting, and in his editorial work upon the agricultural press he never loses an opportunity to draw attention to the achievements of his profession.

His is not the only instance of such services to the veterinary profession and to the live-stock interests. Our members are taking advantage of their opportunities in all sections, and we simply here wish to urge them on in their great work. What is to the interest of the one is the concern of the other, and this mutual spirit cannot fail to be to the benefit and to the honor of both.

"THE EVOLUTION OF THE HORSE."

That the better element of the general public is keenly interested in "the affairs of the horse," was demonstrated during the first three weeks in February, when Professor Henry Fairfield Osborn, LL.D., Sc.D., Professor of Zoölogy at Columbia University, delivered six beautifully illustrated lectures on the

evolution of the horse in the great North Hall of the American Museum of Natural History in Central Park, New York. The lectures were as follows : (1) The horse as an animal mechanism. (2) The horse in relation to the idea of evolution. (3) The fossil history of the horse (especially in North America). (4) The fossil history of the horse continued (contrast between Miocene horses of Europe and North America). (5) Existing races of horses, asses and zebras. (6) Probable origin of the domesticated breeds of horses.

When it is considered that the subjects of the above lectures, illustrated by the most up-to-date stereopticon outfit, presenting the subjects life size, some idea of the treat that was enjoyed by those attending the course can be obtained.

A goodly number of the veterinarians of Gotham (accompanied in many instances by their wives), were seen each lecture-night listening with deep interest to the learned professor's remarks ; going away each night fully satisfied, and expressing a determination to be present on the next occasion.

It is gratifying to see the public outside of the veterinary profession, ladies as well as gentlemen, display the interest that was shown in this subject, and it is doubly gratifying to have a man such as Professor Osborn present the subject to the public, and thus arouse their interest in the wonderful adaptability of the different structures of the horse to their peculiar function, and of the horse as a whole, to his work in man's service ; at the same time enlisting their sympathy, and adding recruits to the army of horse-lovers.

(R. W. E.)

THE veterinarians of Pennsylvania are leaving not a stone unturned in their effort to secure an appropriation of \$100,000 from the Legislature of that State for the Veterinary Department of the University of Pennsylvania, and when they unite in a common cause the Keystone veterinarians usually succeed. With the recent endowment of a similar sum, the school will have a fund sufficient to place it at the very front of veterinary educational institutions in America.

"GOVERNMENT INSPECTOR OR NOT? The Government Inspectorship in the United States Department of Agriculture as a Career," by Dr. D. Arthur Hughes, East St. Louis, Ill., will be published in the REVIEW for May, and will be a fitting continuation of the fascinating story appearing in the present number by the same author.

It is believed by the publishers of the REVIEW that this journal has now reached the largest *bona fide* circulation among the veterinarians of this country and its dependencies that was ever given to a similar publication. There are probably certain foreign professional periodicals with a greater *clientèle*, but they may be counted upon the fingers of the right hand, and the thumb and index finger can be omitted.

PRESIDENT KNOWLES, of the A. V. M. A., has secured a representative body of Cleveland veterinarians as a local committee of arrangements for the approaching meeting in that city, and all who know them will at once be assured of success when their names are read. The Cleveland meeting will surpass all previous ones, if the signs of the times are worth anything. Interesting data concerning the national organization will be found elsewhere in this number.

FOR UNIFORM AMERICAN VETERINARY TITLE.—In a paper contributed to the Iowa-Nebraska Veterinary Medical Association meeting, at Omaha, Neb., Oct. 4 last, Dr. H. Jensen, of Weeping Water, Neb., says: "There is one more subject that lies very close to my heart that we ought to take some action upon, and that is the question of veterinary degrees. We have in this country no less than a half dozen different degrees attached to the veterinary profession, thereby puzzling the public as to what these degrees really stand for. And to me it seems idiotic that such a state of affairs should exist. Resolutions should be made at this meeting and forwarded to the Secretary of the American Veterinary Medical Association, so that they may take some action upon this question at the next National meeting, that we may secure a uniform degree in the United States."

ORIGINAL ARTICLES.

THE VALUE OF MEAT INSPECTION TO THE PUBLIC HEALTH.

THE DANGERS FROM ANIMAL DISEASES—METHODS OF MEETING THE DANGER—WHAT MEAT INSPECTION ASSURES TO THE PEOPLE. ILLUSTRATED WITH PHOTOGRAPHS.

By D. ARTHUR HUGHES, PH. D., D. V. M., CORNELL UNIVERSITY,
GOVERNMENT INSPECTOR, EAST ST. LOUIS.

I. THE DANGERS OF ANIMAL DISEASE TO THE PUBLIC HEALTH.

The relation of animal disease to human disease—Animal diseases a menace to man—Necessity for government control.

Grave as are the dangers which may arise from the consumption of meats in any degree unwholesome, people are apt to use meats and meat products, seemingly fresh and wholesome, without fear and due precaution. The close relationship of animal diseases to human diseases is well known to the scientist; but the great American public does not know the care and caution which is necessary to prevent the direct transmission to man of diseases common to animals, or to prevent the setting up of diseased condition in man arising from the consumption of meats from unhealthy animals. Yet in these days of absorbing interest in preventive medicine and dissemination broadcast of knowledge on means of prevention of disease, it is well that the people should have explained to them the danger and means of avoidance. That certain frightful diseases can be, and have been, transmitted from animals to man as infections: that certain other non-infectious diseases, nevertheless almost equally destructive to man, are started unknowingly by those who eat such meats, point to an undoubted danger. How great the danger is from this single source of disease it is impossible to measure. Still its gravity is indubitable.

There are many means by which animal ills may become hurtful to man. The chief means may be very well illustrated by reference to several animal maladies. Most important of all are, firstly, the infections likely to be directly carried from animal to man and becoming, when so carried, equally destructive to the human body. Of all the infections certainly the most dreaded and surely the most destructive is tuberculosis—commonly called "consumption" when it attacks the lungs of man. Everyone remembers the view of Robert Koch expressed at the British Tuberculosis Congress in 1901: that he believed this infection in cattle was not transmissible to man. Nevertheless the same congress, in which were gathered distinguished students of infections from all lands, by a great majority, said, "in the opinion of this congress medical health officers should use the powers at their disposal and relax no effort to prevent the spread of tuberculosis by milk and meat." This infection carries off one-seventh of the human race; in some European countries, twenty, forty, and even sixty per cent. of the cattle are infected by it. With the facts so alarming, the people will not tolerate flesh from an animal infected with tuberculosis for food. In still a second group must be placed diseases like Texas fever in cattle and cholera in swine which render the meats, if not dangerous, at least decidedly harmful to man and valueless for food; for, far from containing nourishment, they are the cause of chronic diarrhoea and prolonged indigestion. Third, the flesh of animals often enough contains parasites in such a form as to be dangerous to man. For instance, the people do not usually know that the only means to become infested with tape worm is to eat the improperly cooked meat of swine or cattle infested with the cystic or second form of the worm's life found only in the meats of those animals. Gradual emaciation, debility and even death in man ensue from being infested with these parasites.

The United States government, thoroughly aware of the danger of animal diseases to the public health, has devised an elaborate plan to meet the danger.

II.—METHODS OF MEETING THE DANGER.

Summary of the first few paragraphs of the Federal law—

Growth and present extent of government inspection—The diseases covered in the inspection—Description of work at official abattoirs.

By virtue of an act of Congress, approved March 3, 1891, and an amendment approved March 2, 1895, the Secretary of Agriculture was empowered to form, set in motion and promulgate the requirements of a system of inspection of live cattle, hogs and other animals and the carcasses and products thereof which are the subjects of interstate and foreign trade. With authority resting in the acts of 1891 and 1895 the Department of Agriculture has originated a system of Federal inspection of animals, their parts and their products, which embraces in its workings the whole live-stock trade of the country in so far as it has the least to do with interstate or foreign commerce. The law explicitly designates the persons who are concerned in its provisions : "proprietors of slaughter houses, canning, salting, packing or rendering establishments engaged in the slaughter of cattle, sheep or swine, or the packing of any of their products, the carcasses or products of which are to become the subject of interstate or foreign commerce." These proprietors must do three things : must make application for Federal inspection ; must state in detail the work anticipated ; and must agree to strictly comply with the regulations of the inspection.

Since 1891, when government inspection of all animals entering the great abattoirs was begun, the extension of the inspection to the limits of the country has been rapid. In 1891, on the initiation of the movement, government inspection of animals covered only nine establishments in six cities. Now it embraces the majority of the packing establishments—in all one hundred and fifty-five establishments in fifty cities, and it is still extending. Not only are all the packing houses and all the yards in Chicago—that great centre of the packing trades—rigorously supervised by the Federal eye, but the work has radiated everywhere even to the remotest points of the conti-

ment, Boston, New York, Philadelphia; Fort Worth, Texas; Monterey, San Francisco, Portland on the Western coast. The astonishing thing is so much has been done, so well done, and there has been such a ready compliance with the law. The mind reading the figures reels with the magnitude of the trade in live-stock; for, from official report, the inspection last year reached 839,227 for calves; 9,796,450 for cattle; 12,556,729 for sheep; and, wonderful to relate, 35,964,530 for hogs—a total of over fifty-nine millions of animals.

There is considerable difficulty involved in an attempt to explain to those not intimately acquainted with medical terms the reasons for which animals are condemned. The chief point in question is: is a particular disease found in an animal hurtful or destructive to man if the meat should be eaten? The answer to the question is left to the inspector; and his judgment is final. However, his judgment is guided by reference to the printed regulations for inspectors. By the consensus of opinion of medical men, animals having an infection like hog cholera, swine plague, anthrax, rabies, pyæmia, septicæmia, black-leg, tuberculosis or Texas fever should be condemned; and animals so infected are condemned by government regulation. Those with virulent and aggravated inflammations of vital portions of the body like the lungs, pleuræ, walls of the intestines, the peritoneal covering of the intestines, or the uterus are condemned and destroyed. A third kind of diseases for which an inspector rejects animals and often condemns them are parasitic ailments like mange, scab (scabies), tape worm, trichinæ. Too young or immature animals, those in advanced pregnancy, the badly bruised, the badly injured, those showing tumors or suppurative sores are mentioned as condemnable. However, the inspector's code of regulations does not shackle his judgment; nor is it meant to shackle it; for the officer may cast aside an animal or carcass for "any disease or injury, which causing elevation of temperature or affecting the system of the animal, will make the flesh unfit for food."

The government supervision of the live-stock trade in its

relation to the packing houses takes three forms: an inspection of the animals before death; an inspection of the carcasses after death; an oversight of the carcasses, parts of carcasses or edible products as they pass into the trade.

Inasmuch as conditions met with in an animal before death are an index to what may be expected post-mortem, all animals are subjected to a sufficiently close examination in the stock yards before being driven into the abattoirs. In packing-house towns a group of abattoirs, belonging of course to rival companies, is surrounded by stock yards divided off into numerous pens. Commonly a single yard, with the pens, cover a mile or several miles square, with railroads running in from every direction. It is in the yards when the animals are landing from trains, after they are in the pens, or are passing to a pen the floor of which is the scales or weighing platform, that the government inspection of animals, while they are alive, occurs. As the chief object is to separate animals fit for food from the unfit, a sharp eye must be kept on all animals while they are in the yards. In all instances the unfit animals are turned aside into government pens; each animal so penned has a metal tag placed in an ear containing the words "U. S. Rejected," and a serial number. Such an animal cannot pass out from the yards where it was rejected, must be sold and killed in some one of the abattoirs in the particular yard where the ante-mortem inspection occurred. When it is to be killed a notice is sent to the government inspector of the floor in the abattoir where its slaughter is to occur, in order that he may make a final examination of it and dispose of it according to his judgment based on his knowledge of ante-mortem conditions and post-mortem findings. Thus cattle are inspected before death three times: at the train landing where inspectors look for infectious diseases among them, and for the bruised or injured; in the pen just before the cattle are to step on the scales platform, where men look for actinomycosis (lumpy jaw), obvious advanced pregnancy, tumors or suppurative conditions; in the common pens where men look for emaciation whether from tuberculosis or any other cause.

Hogs must pass, before death, in front of the eyes of the government officials at least twice—though usually they are inspected oftener; they are inspected at the train landing for infectious diseases or any marked illness or weakness observable; they are inspected in the pens just before passing to the weighing-scale platform for advanced pregnancy, tumors, suppurative conditions or other symptoms of diseases. Sheep, likewise, are inspected in the sheep folds for any seriously objectionable conditions, though notably for scabies, advanced pregnancy, injuries or emaciation.

Not at all satisfied with a mere inspection of animals before death, the government places inspectors on the killing floors of each abattoir in constant attendance while carcasses are on the rails. Not only must these inspectors examine carefully the carcasses of animals which have been individually reported to them as rejected for cause in the yards, or examine after death rigorously lots or herds which have been reported to them by the yard inspectors as suspicious for any reason, they must also inspect every other carcass closely, duteously, for the presence of any disease likely to make it unfit for human food. Thus, when each carcass is eviscerated on the cattle-killing floor an officer is ready to watch carefully the abdominal organs and organs of the chest for condemnable diseases; an officer stands at the place of evisceration of calves and sheep where each carcass is seen as it passes and is carried by the chain along the hanging rail; and two officers are always on duty to inspect the carcasses of pigs—one to examine the severed head and neck for readily observable signs of cholera and tuberculosis; the other to examine either the viscera or the internal appearance of the carcass. In many of the official abattoirs also the government carries on a microscopic inspection of pork for trichinosis, one of the worst of animal diseases communicable to man. For this disease alone 5,136 pigs were condemned last year. The number of parts of carcasses, of all kinds, condemned was over 64,000; in addition the number of whole carcasses was 113,000.

Neither will the inspection of animals and carcasses suffice. The people must have undoubted evidence that the carcasses, parts of carcasses and animal edible products they purchase are wholesome. Accordingly the government places indelible marks and serial numbers on carcasses and their parts inspected ; and it superintends the work of placing government stamps on all boxes, barrels, sacks, firkins or other package whatsoever, containing inspected meats or edible products. Over twenty-two millions of these packages were stamped last year ; while over thirty million carcasses or their parts were marked or numbered.

III. WHAT MEAT INSPECTION ASSURES TO THE PEOPLE.

The kind of men desired as inspectors—How these things affect the Service and enhance the value of the inspection—Why there is an elaborate system of labelling and stamping—General statement on the value of meat inspection to the public health.

If the United States government wishes to assure the people that its inspection of meats is indeed valuable to them, it must choose men to inspect, under its order, who are fit for the work by reason of character and intellectual attainments. The government does this. Candidates for an inspectorship must be American citizens who prove by sworn statement and vouchers to the United States Civil Service Commission, that they are physically, mentally and morally worthy of the responsibilities of public office ; they must be graduates of recognized veterinary colleges, must have had at least three years study of veterinary science ; must pass the examinations under the Civil Service Commission, on basal and professional subjects ; and must stand well up in the list of passmen to receive an appointment. The tendency of the Commission is to make the examinations stiffer and to add new professional subjects to the list. In a word the standard is high ; and tends to be higher. Retention in the Service, advancement from an assistant-inspectorship to a full inspectorship with higher salary, depends upon fidelity and

trustworthiness shown in three or more years duty. High standard in professional training, proven character and usefulness by length of service, breeds confidence of the people in the class of public servants. The fact that the inspectors are unshackled makes them independent in their judgments and pronouncements. Their judgment on meats is final ; they do not need to truckle to the packers—though they must be prudent and just ; they need not fear political changes. Nor can they be lackadaisical in their work ; for, so to speak, there are inspectors of inspectors—chief inspectors at the stations who direct the inspectors, and travelling inspectors who may appear in the shadow at any time.

The question may be asked how these things affect the Service and enhance the value of meat inspection ? The answers are : we have, not an ignorant, superficial and inconsequential, but an expert examination of live-stock and carcasses ; we have an assurance that each carcass is examined—which would not happen in case there were knuckling and dependent inspectors ; we have a rejection or condemnation of carcasses without fear or favor ; we have not a listless inattention to the disposition of diseased meats, but an assurance that these condemned meats will be disposed of under the very eye of the inspector—a prevention of fraud. For in truth the inspector is required to hold condemned meats in a cage fastened with a government lock ; on a given day to follow the condemned meats to the tank, to see to the tankage and to seal the tank with official seal until he is sure the diseased meats are destroyed.

Notwithstanding the fact that meat passed by the government officers was free from diseases, the people could not rest if unassured that all packages of meats coming from a government-inspected abattoir were not stamped by the officers of the Law. Hence the elaborate system of stamping all packages and labelling meats. These Federal labels and stamps identify carcasses, their parts and packages of meats ; are proof of inspection ; and are an assurance of the health of the meats.

If we were asked to give a summary statement of the value

of meat inspection to the public health, we would say :

1. Government inspection gives certification to the people that carcasses passed, their parts or edible parts thereof, are free from disease and the meat is therefore wholesome.

2. It protects the public against the purveyors and vendors of meats which are diseased and contaminated. Means are used to make it an incrimination to use government stamps or labels over again. This is a Federal offence, the penalty for which is a heavy fine, or imprisonment, or both.

3. By far the largest part of the meats used as foods come from the meat-packing centres. The total number of live, meat-producing animals in the United States last year was 159,688,826. Of these fifty-nine millions were examined before death by Federal inspectors at the packing centres and thirty-eight millions after death. Hence the Federal government undertakes to protect the public at the places where protection is most needed.

At present the only way for people to protect themselves against diseases communicable from animals and to guard themselves against diseased animals sold into the local markets, killed, prepared for the trade without expert government inspection and foisted upon them as wholesome, is to take advantage of the wisdom of the Federal law. If they refuse to purchase meats which have not passed the government inspection, their protection is assured. The government has recognized the danger arising from diseased meats ; it has devised methods to meet the danger ; it assures the people of safety provided they consume meats guaranteed to be free from disease.

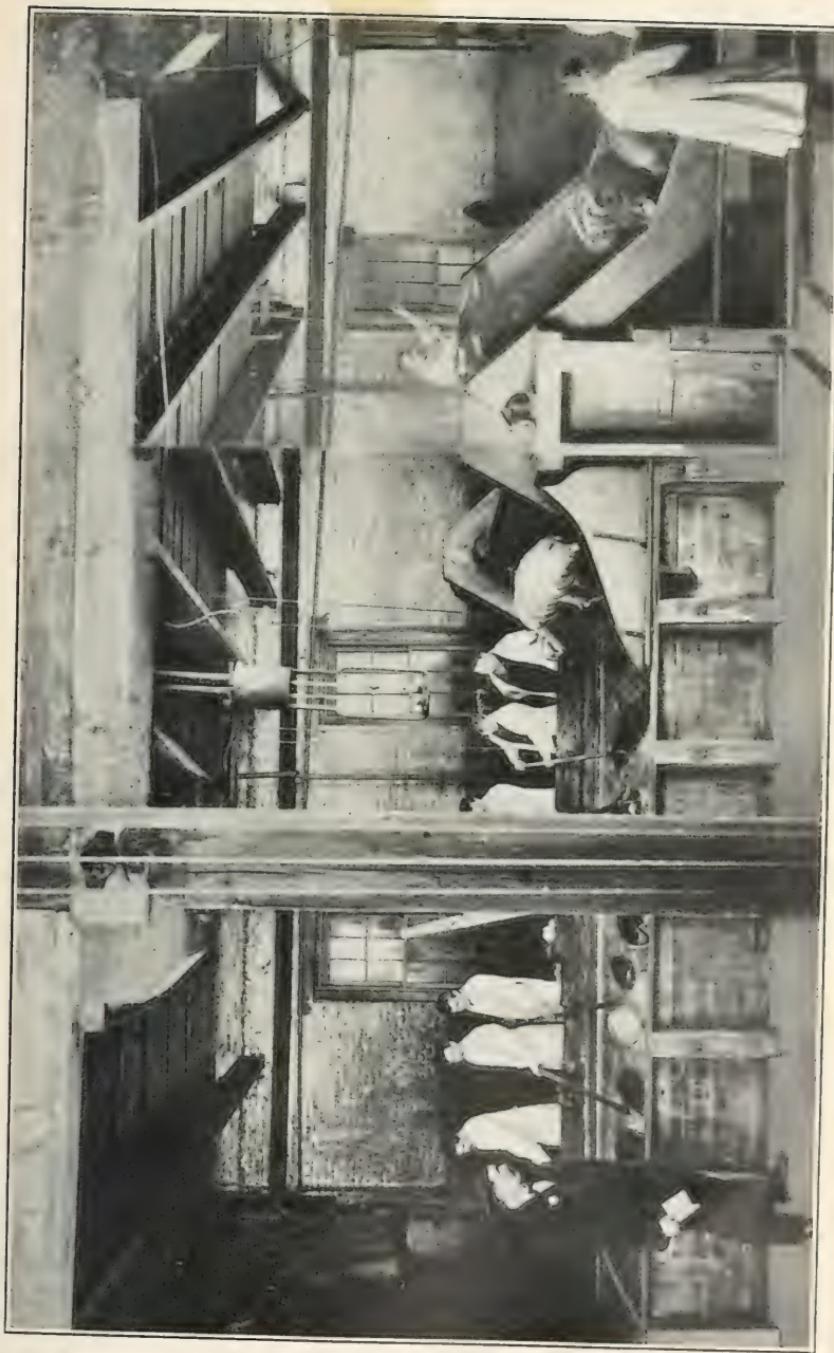
STICKING.



FERRIS WHEEL, SWINGS, HOGS ON HANGING CHAIN.



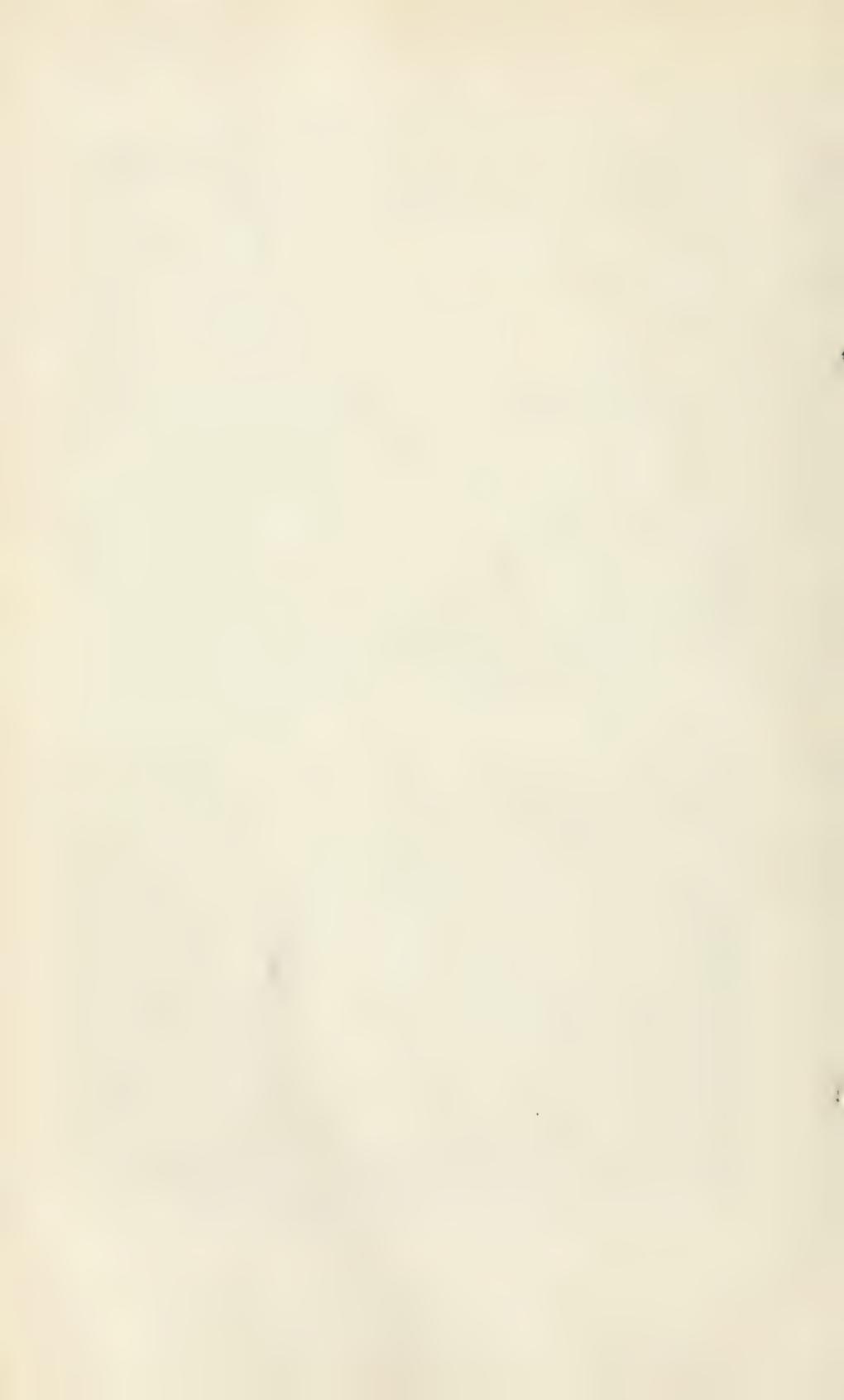
SCALDING IN BOILING WATER CONTAINING A SOLUTION OF TAR FOR DISINFECTION.







POST-MORTEM GOVERNMENT INSPECTION OF BEEF—SWIFT & COMPANY.





SCALDING HOGS.

IN THIS PROCESS THE TAR IN THE BOILING WATER ACTS AS AN EXCELLENT PURIFIER AND DISINFECTANT.



HUNDREDS OF PIGS ON THE RAILS AFTER INSPECTION.

GOVERNMENT INSPECTOR IN THE CENTRE OF THE AISLE AT WORK.

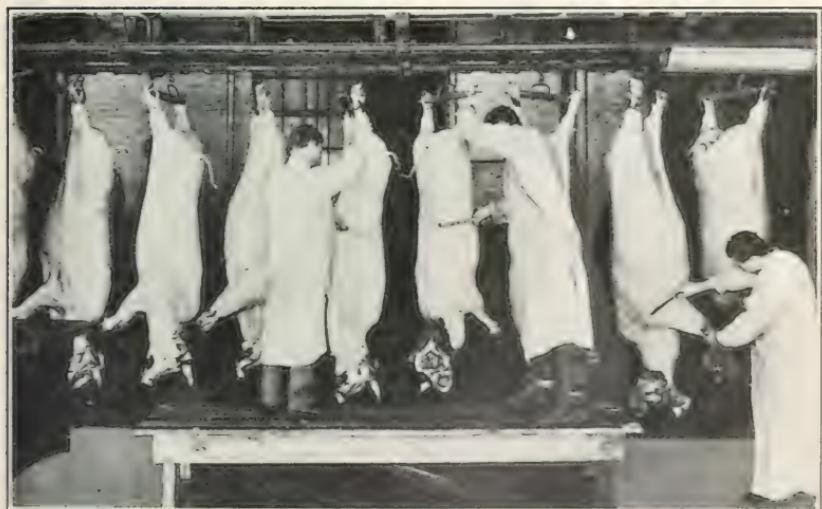




PLACING GOVERNMENT LABELS ON CARCASSES AFTER THE INSPECTION. THE TAGGERS, OR LABELLERS, ARE ON THE LEFT OF THE PICTURE.



THE IMMENSE COOLERS WHERE THE PIGS ARE PLACED AFTER INSPECTION.



WHERE HEAD AND NECK IS OFTEN INSPECTED FOR DISEASE.



EXAMINATION OF HEAD AND NECK OF HOGS FOR SIGNS OF CHOLERA AND TUBERCULOSIS.



WEIGHING AND PUSHING INTO COOLERS AFTER INSPECTION.



INSPECTORS OFTEN STAND AT POINT WHERE THE CARCASSES OF HOGS ARE SPLIT TO WATCH FOR DISEASES OF PLEURA AND PERITONEUM.



HOGS READY FOR INSPECTION OF HEAD AND NECK FOR CHOLERA AND TUBERCULOSIS.





DRESSING PIGS FOR FOREIGN TRADE.
THE GREATEST CARE IS EXERCISED IN THE INSPECTION OF THIS CLASS OF PIGS.



STUFFING AND PACKING SAUSAGE FROM INSPECTED PORK



GOVERNMENT INSPECTOR WATCHING AT THE TIME OF EVISCERATION OF HOGS.



SAUSAGE READY FOR SHIPMENT.



MICROSCOPIC INSPECTION OF PORK BY GOVERNMENT EMPLOYEES FOR TRICHINOSIS, ONE OF THE WORST DISEASES COMMUNICABLE TO MAN.

CLINICAL OBSERVATIONS IN THE TREATMENT OF PARASITIC SKIN DISEASES AND FISTULOUS LESIONS IN THE HORSE WITH THE VASOGEN COMPOUNDS.

BY E. STANTON MUIR, PH.G., V. M. D., INSTRUCTOR IN COMP.
PHARMACOLOGY, UNIV. OF PENNSYLVANIA.

My attention was first directed to Vasogen by some publications which I noticed in German veterinary journals. I learned upon investigation that the Vasogen preparations are used extensively in human medicine, in this country as well as abroad, and that they owe their popularity to Vasogen's remarkable power of rapidly penetrating the epidermis, carrying the remedy incorporated with it to the underlying tissues, where it is quickly absorbed.

Therefore, Vasogen, which is an oxygenated hydrocarbon, is a base, vehicle or solvent for many of the important remedies in daily use, whose action is greatly enhanced when combined with it, while their application is made easy and convenient.

Thus the Vasogen preparations find extensive application for inunction upon the skin and mucous membrane, also for internal administration, and general surgical uses. Through the courtesy of Lehn & Fink, of New York, I was enabled to obtain a quantity of the Vasogen preparations, and the results I derived through their use warrant me in presenting the following observations to the veterinary profession :

The compounds used in my experiments were

Iodine Vasogen, containing 10 per cent. iodine.

Iodoform " " 3 " iodoform.

Creosote " " 20 " creosote.

Pyoktanin " " 2 " pyoktanin.

With the action and source of the first three drugs, viz.: Iodine, iodoform, and creosote, the profession is well acquainted. The latter drug, however (pyoktanin or methyl violet), is not in common use, and practitioners are not so familiar with its

source, action and therapeutic indications. It is a coal-tar derivative, and is one of the most powerful and yet one of the least irritant antiseptics and pus-destroyers in use to-day. A 1-to-1000 aqueous solution will destroy the bacillus of anthrax, and a 1-to-2000 solution will arrest the development of pyogenic organisms. This powerful antiseptic property makes it an invaluable drug for veterinary use.

I have been able to substantiate the claims made regarding the rapid absorption of the Vasogen compounds, and have also found that there is less irritation attending its use than when the above remedies are combined with other vehicles.

In sixteen cases of erythematous dermatitis (scratches), eczematous dermatitis (mud fever), and gangrenous dermatitis (cutaneous quittor), I have had invariably good results from the application of iodoform Vasogen. The treatment consists of first cleansing the part thoroughly with carbolized flaxseed poultices, applied hot, after clipping the hair as closely as possible. Then painting the part affected once, or better twice, daily with the preparation, and keeping the part closely bandaged. The oily nature of the Vasogen compound keeps the part soft, prevents the formation of the dry scales which are so troublesome, besides facilitating the action of iodoform.

A case in which iodoform Vasogen gave me good results was in a pacing mare that ran away and kicked herself free from the runabout to which she was hitched, her hindquarters being badly lacerated. I counted 14 places where the skin was broken, most of them severe, one particularly so, as it was located about half way between the point of the hock and the fetlock on the posterior face of the cannon. The ligaments were badly lacerated and I had a fight with her each time I dressed it. I cleansed the abrasions as well as possible and made application of iodoform Vasogen twice daily, bandaging the laceration on the cannon after each application. The healing was rapid, with very little pus formation (none after the fifth day) and only a slight enlargement was left after it healed.

The application of the iodine and the creosote Vasogen prep-

arations in the various forms of mange and other cutaneous diseases of parasitic origin that I treated, has resulted in prompt and permanent cure. One case in particular is that of a bay pacing gelding, that had been suffering with sarcoptic mange (that form which occurs along the crest of the neck and under the mane). This case had been treated by several veterinarians and pronounced cured, myself among the rest, but in a few weeks at the most the denuded spots reappeared and he would be as bad as before treatment. When the Vasogen compounds were brought to my notice I concluded to try the 20 per cent. creosote preparation on him, more for the sake of doing something than from any hope of success, I having come to the conclusion that the case was incurable. Much to my surprise, there was a decided change for the better in ten days, the parts kept soft, did not become covered with loose epithelium and the hair began to grow and to assume a decidedly healthy look. After three weeks I changed the treatment to a simple one of anti-septic oils and sulphur. In six weeks no one could have told that he had ever been afflicted with the disease. I should state that when I commenced treatment with this preparation his face was almost bare and the crest of the neck and the inside of his front legs from the body to the knees was in the same condition. After three months I stopped all treatment and shortly afterward two or three spots appeared on the neck and under the mane. These, however, disappeared in a short time, under the daily application of the creosote compound. This treatment was carried on during the best season of the year for the growth of skin parasites, viz., June, July and August. I see the horse every few days and watch him closely, but up to the present time see no recurrence of the trouble.

Another case worth recording is that of a Great Dane dog afflicted with mange which had resisted treatment for a long time, and was in such a condition that the owner thought seriously of having him destroyed. I persuaded him to let me try creosote Vasogen; the results were surprising. Inside of two months no one could have told that the dog had ever had skin

trouble, and from a poor emaciated brute hardly able to get around, he developed into a strong, healthy dog with a beautiful coat of glossy hair. The other cases were simple ones of mange and eczema. The former I treated with creosote Vasogen, and the latter with the iodine preparation. In all cases it is necessary to watch the animal closely for a possible recurrence of the disease, because some parasites or eggs may remain which will hatch out and multiply, causing a fresh breaking out; but if the spots are painted with the preparation as they appear, the disease will surely be overcome.

Even if I had had no good results from any of the other Vasogen preparations, I would feel amply repaid for all my trouble in the results obtained from the use of pyoktanin Vasogen. We all know that poll-evil, fistulous withers, and cartilaginous quittor are three of the most troublesome lesions that the veterinarian has to deal with. In poll-evil, or fistula of the poll, I have never had a chance to try this preparation, but from the results I have had with it in fistula of the withers and cartilaginous quittor I feel sure that the results would be satisfactory on account of the similarity of the lesions. In dealing with the last two troubles I never have to keep the animal away from work more than a week, no matter how serious the lesion. In the case of fistulae of the withers it is of course necessary to open the tracks sufficiently to clean them out with hydrogen dioxide or any other convenient solution, then pack the track with cotton saturated with pyoktanin Vasogen, being careful to *get the cotton to the bottom of the pockets*. I have been surprised to see how quickly the formation of pus is stopped and healthy non-suppurating tissue will fill the cavities. In necrosis of the lateral cartilage it is only necessary to open the fistulous tracks sufficient to introduce the saturated cotton. This may be done quickly with the pointed quittor-iron heated to a white heat, then pack it tightly to the bottom, packing the track every day or every second day, keeping the part covered with a suitable bandage. Three horses with cartilaginous quittor belonging to an ice company were treated in this way by myself during the

past summer, all resulting in quick cures, the animals being away from work in no case over four days.

I have recently treated an interesting case of an abscess on the zygomatic crest, complicated with necrosis of the superior maxillary bone, by making a free opening into the abscess, scraping off the necrosed bone and packing the cavity with cotton saturated with pyoktanin Vasogen. After dressing it once daily in this way for a week, I then used iodoform Vasogen, packing the cavity once daily. The healing process was rapid and complete in about three weeks. The pus which was running from the nostrils before treatment was started and the odor (that of necrosed bone) could not be detected after the third day. The only disadvantage, if it could be called such, that I found, was that when applied to a part for a length of time, the hair would come out, although new hair would grow quickly when the application ceased. This was noticed only after the application of pyoktanin and iodoform Vasogen.

The various Vasogen componnds are used extensively in human medicine with very satisfactory results (as is evident from the literature), and in my opinion no veterinarian's case is complete without having at least the four preparations, the satisfying use of which caused me to write this article.

HORSE SENSE.—The person who advertised for "A man who speaks German and understands horses" was satisfied with the wording of his advertisement until the first applicant arrived. "Vell," said the would-be stableman, soberly, scratching his head, "I schpeaks Chairman all righdt, but I don't know dot I can understand dose horses. Vat langquiches do tey schpeak?"

A PAIR OF OSTRICHES, "Black Diamond" and "Whirlwind," owned by Thomas A. Cockburn, of Arkansas, have trotted a half mile, driven to pneumatic speeding wagon, in 1:05. In single harness each of them has been speeded against many noted trotting horses, and though occasionally beaten, have won more frequently than they have lost. The larger bird stands 9 feet 8 inches high, and weighs 300 pounds. Both are first-class plumage birds, and are valued at \$20,000.

NUCLEIN CONSIDERED AS A THERAPEUTIC AGENT IN VETERINARY PRACTICE.

By E. R. VOORHEES, SOMERVILLE, NEW JERSEY.

Ever since Metschnikoff's phagocytosis was first brought to the attention of the medical profession, the substance that was first called nuclein by Germain See, of Paris, has been looked upon as the most prominent substance in the complex chemistry of the subject accounting for the increase of the phagocytic action of the blood. While this substance is old to the medical profession, the writer is of the opinion that it has never been used to any extent by veterinarians.

Nuclein belongs to that class of substances known as the defensive proteids, and is obtained from various animal and vegetable sources. Reliable specimens contain large amounts of phosphorous and nucleinic acid. It has been found by manufacturing chemists that the most reliable sources from which to obtain it is from the vegetable kingdom, especially from yeast.

Nuclein is a non-poisonous germicide. Its administration increases the number of leucocytes, and this in consequence produces an increase in the disease-resisting power of the blood.

Nuclein, therefore, influences a morbid condition of the blood by bringing about a reactionary state through its powerfully germicidal action.

Nuclein has come to us from a source to which we are deeply indebted for many other good things, viz., the medical profession. It came without the blare of trumpets by a gradual evolutional process, and it is the basic principle of all serum and cellular therapy. Recent and much advertised additions to this mode of therapy have no claim to priority, as nuclein has been used to produce leucocytosis for many years. All diseased conditions due to bacterial invasion or to a hypoleucocytosis are rationally, scientifically and successfully treated by this mode of therapy.

It is not the writer's object to impress veterinarians with the

idea that nuclein is a specific for all diseased conditions where such a remedy is indicated, but as a most potent and reliable addition to our list of therapeutic agents.

The writer's attention was first directed to nuclein by the published reports in medical journals, of its action and uses in a variety of diseases, and it occurred to him that it should prove a valuable remedy in the treatment of distemper in dogs. Obtaining a supply, it was first given a trial in this disease and with very gratifying results. A 5 per cent. solution was used hypodermatically, the maximum dose being 20 minimis. It was next used intravenously in horses in purpura haemorrhagica, pneumonia, influenza, etc., with such good results that all other forms of anti-toxin and serum have been discarded as possessing no curative action that cannot be secured by the intravenous administration of nuclein. Veterinarians need have no fear of using this remedy in the manner indicated, as experiments conducted by Doctors Vaughn and McClintock showed that such amounts could be introduced in the jugular that the blood of the animal contained 1.8 per cent. of pure nuclein without any toxic effect.

The largest dose used by the writer at any one injection has been 20 c. c. This is usually followed by 10 c. c. doses once or twice daily.

The only rules to be observed in its administration are to be careful that you have a reliable preparation in the first place; next, to observe the ordinary rules of cleanliness as to syringe, which should be sterilized either by boiling or immersion in pure alcohol before each injection, and see that the container is kept free from contamination. The writer puts 20 c. c. in sterilized vials and so obviates the danger that may follow from frequently uncorking a larger retainer in the contaminated air of the stable. The firm of Parke, Davis & Co. have promised to put the remedy in hermetically sealed tubes as soon as a sufficient demand is created.

The record of cases treated by this mode of therapy will be reserved for a subsequent communication.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

INTERESTING CASES OCCURRING IN A NEBRASKA PRACTICE.*

By H. JENSEN, Weeping Water, Neb.

Concretion of the Guttural Pouch.

In the spring of 1899, Mr. J. brought to my infirmary a dun-colored mare, six years old, presenting the following symptoms: A sanguineous unilateral nasal discharge and a slight cough, temperature and pulse normal. After making a thorough examination of the sinuses of the head and also examining the teeth, I concluded it was simply a case of catarrh and prescribed a tonic and requested the owner to let me see the animal again in a few weeks.

Mr. J. living quite a distance from my place, it was nearly five weeks before I saw the patient again; at this time all the above mentioned symptoms were intensely aggravated, the cough much worse, and the nasal discharge quite profuse, but worse, so the owner observed, when the animal lowered its head to eat or drink—a very valuable observation toward making a correct diagnosis. A very marked dyspnoea had now ensued, and it was so bad that she could not stand a slow trot; also a very slight swelling in the left parotid region. By this time I knew what I had to deal with, and informed the owner that an operation would be necessary, and as I had some business in Mr. J.'s neighborhood the following week, I promised to call and operate on the animal. I went to Mr. J.'s place the following week prepared to operate; the animal was cast on the right side and the operative field rendered thoroughly aseptic; an incision was made in the triangle through the skin, a passage was forced into the guttural pouch with the index finger, a small amount of offensive pus escaped, but I could feel some hard movable object within the cavity. I enlarged the opening carefully with a probe-pointed bistoury, and with a teaspoon (the only suitable instrument available), I removed nearly two quarts of hard concretions. After thoroughly cleansing the cavity and providing drainage, the animal was allowed to get

* Presented to the Iowa-Nebraska Veterinary Medical Association, at Omaha, Neb., October 4, 1904.

up. I noted upon rising that the breathing was perfectly normal, and taking into consideration the great amount of concretions removed and the slight exterior swelling ; the dyspnoea must have been caused by the partial collapse of the trachea. The after-treatment was exceedingly tedious. I used everything indicated, new and old, including the new silver preparation, but all failed to do any good. I became absolutely disgusted with the old mare, and when Mr. J. called for some more medicine, in sheer desperation I gave him some powdered alum and directed him to put a tablespoonful to a pint of water and inject in the cavity twice a day. In a week's time he returned, all of a smile, and asked why I did not give him that stuff in the first place, as that healed it right up. The question is, did the alum do it ? Five years later, at this writing, the horse is well.

Canker of the Foot.

Last March, a gentleman brought to my place a nine-year-old gray horse for treatment. The foot had been treated by different parties for over a year for thrush. On examination, I found almost the entire sole covered with papillary enlargements, secreting a very offensive fluid ; the heel was also badly cracked, from which also exuded a very offensive fluid. Upon the least touch these papillary enlargements bled very profusely and seemed very sensitive. The foot was put in a creoline foot-bath for 24 hours, after which I removed those papillary enlargements with the actual cautery, taking care not to penetrate too deeply ; after having these removed I discovered they extended under the portion of the sole not detached ; this portion of the sole was all removed and the underlying papillary growth cauterized in a strong solution of zinc chloride applied on cotton to the foot and the entire foot bandaged. This foot gave me considerable trouble. I applied everything imaginable ; iodine, mercury bichloride, zinc chloride, etc., to check the papillomatous growth, but nothing seemed to check it until I painted the entire surface with pure formaldehyde covered with a large ball of oakum, so as to get direct pressure on the sole, which, by the way, I consider very essential. To sum up the following points in the treatment of canker of the foot : First, thorough cleansing ; second, effective removal of papillary enlargements with the actual cautery to prevent loss of blood ; third, removal of every vestige of the sole under which the pododerm is diseased ; fourth, apply formaldehyde to destroy papillary growth, follow with a dressing of lead nitrate and direct pressure.

Habitual Luxation of the Patella.

This condition has, no doubt, to those of you who have had them to handle, become a source of considerable annoyance and disappointment. When such a case has been presented to you for treatment perhaps you have blistered or used the actual cautery—yes, even had a shoe of a peculiar construction made and applied to the sound foot so as to compel the animal to bear weight on the afflicted leg. Expecting to accomplish something, and I will truly say that, personally, I have not in one instance had any success by the above mentioned proceedings. About a year and a half ago I bought a two-year-old Clyde colt thus afflicted, with the intention of operating at once, when upon consulting different old operators, I was in every instance discouraged—"it's too risky," "too great danger of infection," "danger of puncturing the capsular ligament." Having this animal on my hands, I decided to operate anyway. The animal was prepared by shaving the interior and anterior surfaces of the femoro-tibial articulation, and a system of disinfection was commenced 24 hours before operation. The animal was then cast and the operation done according to Merillat (as described in the *Chicago Veterinary College Quarterly* of June, 1903), which is as follows: Animal cast as for castration. I, however, found that I could not do anything in this way, as I could not get at it, so I rolled the animal over on the afflicted side, unfastening the afflicted leg and extending it backwards. I did not chloroform, but used local anaesthesia of cocaine-adrenalin, and thoroughly disinfected the operative field; located the ligament by palpation, made an incision through the skin from the middle of ligament to tibial attachment, arrested all haemorrhage, continued incision through fascia lata, dissected fascia to each border of ligament until its outlines were plainly brought to view. Placed neurotomy hook under the ligament as near to the tibia as possible and as close against the ligament as possible, avoiding injury to the structures beneath; lifted up the ligament gently and divided it by cutting downward to the hook; disinfected thoroughly and closed wound with interrupted sutures, covered with bichloride collodion; tied up animal for eight days, so it could not lie down, and when wound was closed exercised. A perfect recovery took place.

I operated on one this fall, but got a slight infection, but it seems to get along all right now.

In writing on this subject I have offered nothing new, but from my conversation with other operators, the general opinion

seems to prevail that it is quite a formidable operation. Such is not the case, however, and I heartily commend you all to try it, thereby enabling you to win more laurels and more dollars.

RADICAL TREATMENT IN A CASE OF TETANUS.

By ERNEST I. SMITH, D. V. M. (Cornell University). Cherry Creek, N. Y.

During the past two years the writer has not noticed any lengthy and detailed reports concerning tetanus in the pages of the REVIEW. There has been a slight allusion to it in the editorial and also several reports of cases, both of which are lacking notably in detail. Fortunately, in one sense, a typical case presents itself for treatment, and an effort will be made to set forth three of the most striking points, *i. e.:* 1. The depth of the wound. 2. Being a well-developed case of tetanus. 3. The antitoxin and iodine treatment. The antitoxin method in these cases will bear out the old homeopathic dictum of *similia similibus curantur*, but so far as infinitesimal doses are concerned, the writer is not one of its votaries.

Subject.—A broodmare, about seven years of age, in excellent working condition; weight approximately 1,150. By all objective symptoms she appeared to be a mare well advanced in pregnancy and would very likely foal within the next thirty days.

History, Observations and Symptoms.—During her work upon a small truck farm she was reported to have come in contact with a horseshoe used as a gate hook. Now, July 23, 1904, three days after the accident, she was presented for examination and treatment, and at the same time the history was given as stated above. The hook was found to have entered the triceps muscles of the forearm, making a deep puncture wound, that severely lacerated the muscles, but left the skin intact, save the exterior abrasion, which was about 4 centimetres long. No attention had been paid to it prior to this, for to the layman the wound presented no dangerous appearances. The limb was somewhat stiffened and the inflammation was intense. Suppuration was freely going on, but to remedy this free openings were made for drainage and the parts dealt with on general surgical principles. The mare was then discharged and the owner requested to return her the following day.

During the same day in the afternoon July 23, 1904, she was returned on account of the excessive haemorrhage induced by the morning's surgical wound and constant exercise. At the second dressing tonic spasms of the triceps muscles and those in close proximity were observed. This called forth further obser-

vations, which noted the train of symptoms that were just coming on. The mare when turned around would turn the whole body at once as if the entire spinal vertebræ were ankylosed. General stiffness in the neck and hardness of the cervical muscles were noticeable, tail elevated, and in three hours' time the jaws were partially set. Salivation profuse, and if patient was moved the membrana nictitans would cover one-half of the corneal surface. Great difficulty was manifested in attempting to eat and only accomplished after several trials with continual grinding of the molars, which would finally separate sufficient to admit food between them. The mare could not lower the head to drink, and when water was offered she would drink a little, but would not refuse to drink minute quantities at any time of the day. If grain was given she would take one hour to consume it and then to aid the consumption of it in that time it had to be kept stirred up in order to assist prehension. The facial muscles were hard and firm and when touched would become rigid. The muscular rigidity in the course of three days became more marked over the body, passing posteriorly. She would not attempt to lie down, but stood constantly in one position. The fæces were hard and coated with mucus, urine scanty in amount. The temperature and pulse were not taken, the writer believing them to be only of secondary importance. In the meantime the fore limb became swollen twice the normal size.

To assist the reader, following is a tabulated report, giving date, hour, dose, agent used and method of administering.

Date.	Hour.	Dose.	Agent used.	Method.
July 23	8 P. M.	40 c.c.	Tetanus antitoxin (H)	Hypodermic
" 23	12 P. M.	20 c.c.	" " (H)	"
" 24	7 A. M.	10 c.c.	" " (V)	"
" 24	8 P. M.	10 c.c.	" " (V)	"
" 25	8 P. M.	10 c.c.	" " (V)	"
" 27	10 A. M.	10 c.c.	" " (V)	"
" 28	10 A. M.	10 c.c.	Tr. iodine	"
" 29	10 A. M.	20 c.c.	Lugol's sol.	"
" 30	10 A. M.	30 c.c.	" "	"
" 31	10 A. M.	50 c.c.	" "	"

H=Human antitoxin.

V=Veterinary antitoxin.

The morning of July 24, no change was noted for the better, but on the other hand, advanced symptoms. Up to this time notice that 60 c.c. of (H) antitoxin had been given. Not until 20 c.c. (V) antitoxin had been given had the symptoms

abated any and the antitoxin showed that it was checking the progress of the absorbed toxin. During all the time up to July 27, when the last antitoxin was given, the patient had shown no nervous symptoms. She took one firm standing position and refused to change. The food had to be kept within easy reach of her in order to aid prehension; still it was taken with difficulty; water was drunk in very moderate quantities.

On the morning of July 28, a change for the better was noticeable for the first time during the treatment. Not desiring to administer any more antitoxin, but at the same time feeling that further medicinal agents would not be out of order so long as the case manifested any gain, the iodine solutions were substituted, as shown in the table.

On July 31, the mare was making a rapid stride toward recovery, indicated by relaxation of the muscles, giving a chance to turn the head, allowing the jaws to open wider. The caudal muscles were relaxing and the tail resumed its natural position. Food was being eaten in one-half the time as at the onset of the disease. The wound, in the meantime, had received daily attention, being flushed out with strong and penetrating antisepsics, but the depth of it necessitated a slow recovery in that part.

On Aug. 2 the patient was discharged cured. In about one week the owner found her lying down and able to handle herself with ease, and a fortnight later she was found with a nice, vigorous, growing foal and both doing well.

Conclusions.—One hundred c.c. tetanus antitoxin seems a large amount, but it is evident that the (H) antitoxin is not so virulent as the (V) serum. Following this, 110 c.c. of iodine solution was used, which is not contraindicated with tetanus antitoxin, although the case might have made just as fine recovery in its absence. The writer believes that stronger treatment could have been resorted to and that the physician should give the maximum dose in such serious cases, and especially in tetanus, where the mortality is so high. "As timidity is the cause of the death of a great deal of talent," so "timidity is the cause of the death of a great many lives."

"A CASE OF TETANUS." *

By DR. J. N. GOULD, Minnesota.

Patient, brown gelding, 5 years old, weight 1,500 lbs.; entered hospital September 3, 1904. Gait stiff, membrana nicti-

* Read at 8th Annual Meeting of the Minnesota State Veterinary Medical Association, at St. Paul, January 12-13, 1905.

tans covering nearly the anterior half of the eye ; gluteal, lumbar, and cervical muscles very hard and tense. A small abscess in the sacral region had appeared about August 20 ; this discharged pus for a few days and apparently started to granulate in a healthy manner. The abscess was evidently due to a puncture from a fork-tine. At the time of entry the animal was still able to eat, but with difficulty. A diagnosis of tetanus was made and the prognosis very unfavorable.

Treatment.—Patient was placed in a box-stall, somewhat dark, but not free from noise and other disturbances. The seat of the abscess near the sacrum was incised freely, the wound and surrounding region saturated with tr. iodine and oil terebinth, equal parts, and the treatment continued twice daily for a week. A three-gallon pail of 1 per cent. solution of carbolic acid was placed in front of the patient and kept there most of the time throughout the treatment. At first the animal took but very little of this solution voluntarily, but later drank of it freely. The neck, back, and hips were bathed six or seven times daily with a 3 per cent. solution of crude carbolic acid. In the bathing process the skin was thoroughly soaked, nearly the whole surface of the body becoming wet in the process. After wetting the skin a woolen blanket was used to prevent the animal chilling. For the most part at the start the solution was applied cold, but later warm water, and, instead of crude acid, the white crystals and an equal quantity of glycerine was used. The last few days the strength of the solution was increased to 5 per cent. and applied three times a day.

The tetanic symptoms grew steadily more pronounced up to the night of the 5th, when the patient laid down and stayed down several hours. The animal was placed on his feet again with some help, but seemed much excited.

From the 5th to the 8th the patient grew rapidly worse, and was entirely unable to eat or drink on the morning of the latter date. In the afternoon of the 8th the animal received, through a nasal stomach tube, three gallons of water containing three ounces of carbolic acid and the same quantity of glycerine. This mixture was allowed to stand for an hour to insure solution. In about ten minutes after the administration of the solution the patient became greatly excited and sweated profusely. This excitement lasted possibly two hours and then gradually subsided ; the patient seemed much relieved later in the evening.

About 8 o'clock A. M., September 9th, the injection was re-

peated ; the same symptoms were presented as after the previous one, but did not last for so long a time and were less pronounced.

Four o'clock p. m., September 9, a third injection was given containing the same amount of acid and glycerine, but less water. The solution was administered warm and a common catheter with a bell-shaped end was used instead of the stomach tube. The excitement manifested after this injection was decidedly less severe and lasted not over 45 minutes ; the sweating was profuse, however. September 10th, the patient was able to eat some cut *blue grass*, a small quantity of oats and drank some of the acid solution.

The bathing and acid in the drinking water was continued up to and including the 14th. At this time the treatment was discontinued, as I thought the animal had absorbed all that it was safe to give. The hardness of the muscles was disappearing noticeably and the patient could eat and drink quite well.

September 15th.—At ten o'clock the patient either fell or laid down and remained quiet for about an hour ; later becoming quite restless he was placed on his feet with a sling. The excitement caused by being down caused a relapse and a great deal of the muscular hardness returned ; the patient ate with great difficulty but drank fairly well.

The bathing and acid in drinking water was again resumed, the bathing up to and including September 21st, and the drinking solution to the 24th ; on those dates they were dispensed with.

September 20th the patient ate and drank freely. From the 20th to the 22d inclusive, the patient took nine ounces of acid in the solution. The patient was kept in sling from the 15th of September until October 18th.

On the 18th the sling was entirely dispensed with ; the patient, however, had been allowed to lie down several times before that date. Legs were badly swollen and quite tender at this time (Sept. 25th). Animal could slip around in the sling and did not show excitement when legs were brushed.

Patient received at this time a ration of cut blue grass, oats, bran, and hay. October 3d the animal moved from box stall to an open one. From the 3d convalescence was not seriously interrupted and the patient was sent home October 31st, recovery being complete.

Conclusion.—Solution should be given warm when injected. A large quantity of glycerine can be used to insure more com-

plete solution. A catheter should be used instead of stomach tube, as it causes less irritation and consequently less excitement.

Patient should be placed in the sling at the start to prevent accidents. During the treatment of the case 26 ounces of acid were consumed. In this case the dose of acid was irregular as I had no data to refer to as to the amount of acid that a horse could take with safety.

ACUTE INDIGESTION, WITH UNUSUAL SEQUELA.*

By G. L. BUFFINGTON, Brooklyn, Iowa.

The subject of this was a fine young mare of about 1,100 pounds weight, and used for light driving occasionally, but did no hard work; was in good flesh and always received the best of care. When not in use she was turned out in a small field near town in the day time and taken to the stable and fed hay and grain night and morning. The pasture was eaten almost bare at the time she was taken sick, so she received very little food from that source. The feed was all of good quality.

On the evening of November 21st last, when the owner went to the pasture to bring her in for the night, he found her in much pain, lying down and rolling some. He brought her to the stable, gave a dose of belladonna and aconite, but as she continued to grow worse I was called to see her about 7 o'clock.

Found the mare presenting the most distressed appearance, suffering intense pain, lying down, stretching out, but not rolling much. Mucous membranes injected, pulse at 60, rather feeble, abdomen much distended by accumulation of gas. Temperature about normal, respiration not much altered. She was given 4 grs. morphine, hypodermically, a diffusible stimulant and a pint of oil. The distension of the abdomen soon began to disappear and in two hours was all gone. However, this did not relieve her condition. On the contrary, she continued to grow worse. The pulsations were rapidly becoming faster and more feeble, and all the symptoms indicated a fatal termination.

On one side of the stable was an elevated floor used to stand a cow on, and the mare persisted in standing with front feet on this floor and hind feet down on the ground. When led to her own stall and given her freedom she would immediately return and resume the same position by elevating her front parts.

* Presented to the Meeting of the Iowa State V. M. A., January 25-26, 1905.

There was observed a rattling noise in the throat and a slight discharge of blood from the nostrils. The pulse had now become imperceptible. I left her at 10 o'clock, expecting death to occur in the morning or before.

However, she was still alive in the morning, but presented a very dejected appearance. Pulse imperceptible, eyes staring and occasionally she would arch the neck and make retching movements as though attempting to vomit, or as a choked horse will do.

There was a discharge of a dirty colored thin fluid issuing from the nostrils, and was coming from the stomach. It was running a small stream and had been for some time, as the trough and manger were soaked with the liquid. The oil which had been given the previous evening was mixed with the discharge. The smell from this was very offensive. The liquid material continued to run from the nostrils in a small stream up to the time of death, which occurred about 6 o'clock that evening.

Expecting to find some lesion or condition in or near the stomach to account for this peculiar phenomenon, I proceeded to make a post-mortem examination the next afternoon, but to my surprise the stomach and whole intestinal canal presented a normal appearance, except that they were pale and bloodless and contents were fluid, except the rectum and colon, which was of normal consistency. The muscles of the inferior cervical region were very dark colored, in places black, looking much like the affected muscles of a calf with the black-leg. Considerable blood had accumulated in the pleural cavity, but the heart and lungs were normal. There was a very little serous exudate on a portion of the pleura. All other organs were normal.

The peculiarity of this case to me was the continuous discharge of the liquid material from the stomach, which continued in an uninterrupted stream for 8 or 10 hours, and yet after death the stomach and intestines were apparently filled to repletion with the same material. Also the congested condition of the inferior cervical muscles. Was that associated in any way with the gastric disturbance?

GASTROPHILUS HÆMORRHOIDALIS IN THE PHARYNX OF A HORSE.*

By G. L. BUFFINGTON, Brooklyn, Iowa.

On Nov. 26, 1903, I was called to see a 1,200-pound bay mare that had been slowly starving. She had had difficulty in eating

* Presented to the Meeting of the Iowa State V. M. A., January 25-26, 1905.

for a month or more, but only for the past week was she unable to take any food at all. She could drink a little, but with difficulty. Would take food into the mouth, masticate it a very little, then drop it out. The symptoms were those of paralysis of the muscles of deglutition. There was a very offensive odor about the head.

Suspecting some obstruction in mouth or throat I applied the mouth speculum, but a careful examination revealed nothing in the way of a satisfactory explanation of the cause of the difficulty.

The condition of the animal was such that a fatal termination was looked for at any time, and such was my prognosis. I, however, used throat washes and left same to be used, with request that I be notified if the animal died. Four days later I received telephone message that she had died and proceeded at once to the farm, which was nine miles out, with the following result: Very offensive odor coming from head. The nasal, pharyngeal, laryngeal and upper portion of cesophageal mucous membranes were gangrenous. This was the source of the offensive odor. On opening the pharynx I found attached to its walls 12 or 15 larvae of what I have classified as *Gastrophilus haemorrhoidalis*, and these I considered as the source of this peculiar affection and death of mare.

ENCEPHALOID CANCER OF THE EYE.*

By DR. C. A. MACK, Stillwater, Minnesota.

On September 27, 1904, a grey gelding, weighing about 1250 pounds, was brought to me, the owner requesting something to put on one of its eyes. On making an examination, I found a soft friable tumor, situated on the internal aspect of the left eye, involving part of the cornea and sclerotic coat. The eye, from pressure or otherwise, was much destroyed; the aqueous and vitreous fluids having escaped, causing the globe to collapse; the tumor, filling the remaining portion, protruded somewhat over the internal canthus. It presented a reddish appearance and was a soft and fluctuating mass, unencapsulated, and gave out rather a pronounced foul odor. An operation being decided upon, the horse was cast, the part cleansed, antiseptics applied and a 10 per cent. solution of cocaine injected. The operation was simple, merely consisting in cutting with a pair of curved

* Presented to the St. Paul Meeting of the Minnesota State Veterinary Medical Association, Jan. 12-13, 1905.

scissors the orbital membrane, ocular muscles, and optic nerve, thus allowing the tumor, with the eyeball, to be removed *en masse*. An antiseptic dressing was applied and the animal allowed to rise. After the part had healed sufficiently I placed a hard rubber false eye *in situ*, which served the double purpose of improving the animal's appearance and prevented the eyelashes turning inward and irritating the mucous membrane.

FOREIGN SUBSTANCE IN THE BLADDER OF A MARE.*

By J. J. RICHARDSON, V. S., Marcus, Iowa.

Some time ago I was called to see a mare, six years old, that had difficulty in passing her urine. I made an examination by passing the hand into the vagina and pressing with the open hand down over the bladder. I discovered a rod-like substance. I then inserted the finger into the meatus and found that one end was embedded near the neck of the bladder, the other end was free. I passed in a pair of forceps, got hold of it, worked it loose and pulled it out. It was a piece of an apple limb, coated over with carbonate of lime, and measured $7\frac{1}{2}$ inches in length.

On making inquiry, I was informed that about six months previous the owner had found some boys in the barn teasing the mare with some brush that had been cut from the orchard.

Treatment consisted in washing out the bladder with a dilute acid for a few days. In about ten days the owner reported the animal as all right and as having no symptoms of any trouble in passing her urine.

PUNCTURED WOUND.*

By J. J. RICHARDSON, V. S., Marcus, Iowa.

I was called by telephone on Nov. 18th, ten miles east of Marcus, to see a valuable grey mare that had been injured in a runaway. Imagine my surprise on my arrival at the farm to see my patient standing in the yard. Twenty-six inches of the buggy shaft had passed clear through the right hind quarter; it entered on the inside of the thigh and passed up through the obturator foramen, and came out on top of the rump beside the sacrum. It was so firmly embedded that it required the combined strength of two strong men to pull it out.

Treatment consisted in flushing out the wound daily with an enema pump, keeping up drainage with iodoform gauze, and

*Presented to the Meeting of the Iowa State V. M. A., Jan. 25-26, 1905.

of giving eucamphol internally. On December 23 the wound was healed and the animal returned to her usual work.

STRANGE DISEASE IN SHEEP.*

By R. W. McDONALD, V. S., Flint, Mich.

About March 25 last, I received a call to go and see a flock of sheep that were showing peculiar symptoms, and in fact at that time some 12 or 15 had died. On my arrival there I found somewhere about 300 Montana lambs that had been purchased in Chicago and had been unloaded the day previous to my visit. At night they were apparently all right; but about noon the following day some of them were noticed to be acting strangely and this continued so during the day. The symptoms shown were: a lamb would be noticed to elevate its head, and upon the least excitement would run against any of the others or over them and possibly striking against the wall or any other object that it came in contact with, falling in a paroxysmal condition, breathing rapidly and frothing at the mouth. After a few minutes the animal would become composed and remain so for a considerable time, or until some person should go through the pens and arouse their nervous system. Usually three or four such spasms rendered them helpless and they would continue in an unconscious condition from three or four up to twelve or sixteen hours before death ensued.

Being fully satisfied the trouble was a nervous one I held a midnight post-mortem, and found all the internal organs apparently in a healthy condition, but upon exposing the brain I found slightly more than ordinary serous effusion in the brain cavity.

The total number of deaths were 47, the later cases terminating almost a week after the first appearance of the disease. One peculiarity I noticed was that in choosing a subject for post-mortem I selected some already dead, others those that were almost lifeless, and after having bled them they still retained life for an unusually long time. While in conversation two weeks ago with the man who had those sheep in charge he informed me that a similar outbreak occurred a short time later some distance from him with equally fatal results.

My object in bringing this before the meeting is simply to draw out information, as I am at a loss to know what is either the true cause or the exact nature of the disease.

* Read before the Michigan State V. M. A., at Lansing, February 7-8, 1905.

A DOG WITH "A YELLOW STREAK."

By WM. HERBERT LOWE, D. V. S., Paterson, N. J.

Owner brought bull terrier dog, 6 years old, to office, February 3d, with the statement that he had killed 500 rats "on the dump" in eight days; had killed 105 rats in an hour and a half six days previous.



Upon examination I found dog with swelling of throat, neck and head, with marks on side of face and throat where the rats had evidently bitten and infected him. The animal's skin and mucous membranes were yellow as gold; urine and vomit were also yellow. The characteristic symptom seemed to be a yellow color to all the tissues. Constipation, loss of appetite, inability to drink. Temperature 103° F., slight acceleration of pulse and respiration. Animal stiff and weak. Unfavorable prognosis. Dog died two days afterwards.

A CALF WITH ITS HEART IN ITS NECK.

By DRs. HAGYARD, BRYAN, and SHANNON, Lexington, Ky.

At the farm of Mr. Daniel Combs, a shorthorn breeder of this county, one of his finest shorthorn cows gave birth to a large, well-developed bull calf, Feb. 21, 1905.

On the under surface of the neck midway between the atlas and sternum, there was a large swelling. On making an examination you could see and feel something move. It was a well-developed heart. The calf could nurse, but slowly, was very active and of large size.

It died on March 1. At the autopsy the heart was found located in the neck, as described above. The right lung was congested and atrophied. Other organs normal. Weight of heart, one pound.

THE Austrian city of Vienna is about to put into operation a novel scheme. It proposes on a co-partnership basis to provide meat for city consumers, selling it 5 cents under prices charged by Vienna butchers.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Kansas City, Mo.

E. VON BEHRING'S COMMUNICATIONS ON THE MORTALITY OF SUCKLINGS AND ON THE MILK TAKEN BY THEM (FORMALIN MILK, A NEW REMEDY FOR "WHITE SCOUR.") [Dr. M. Klimmer].—Behring in his publication on "Sucklings' Milk, and the Mortality of Sucklings" (*die Therapie der Gegenwart*, 1904), gave his opinion that cows which acquired a high grade of resistance against tuberculosis through protective inoculations will secrete with their milk immunizing agents, and that people, especially children at breast, when partaking of such milk will also take those immunizing agents into their system, through which they receive a certain amount of resistance against tuberculosis. The utilization of such milk will, however, necessitate an adaptable milk preservation method, through which the immunizing agents will not be destroyed or diminished. The usual sterilization or pasteurization, through heating to 60° C., is for this purpose unsatisfactory, as in this process the protective agents are greatly reduced. The only method which v. Behring found practicable consists in the addition of formaldehyd (formalin) to the milk. While the presence of formalin in the milk in quantities of 2% was harmless in all applications for test animals, it does, however, disagreeably change its taste; only in quantities of $1:4,000$ is the formalin undetectable to the taste and odor. Behring states that formalin, even in extraordinary high dilutions, prevents a decomposition of the milk, and is therefore recommendable for preserving purposes. Milk which without the addition of formalin coagulated in 48 hours, when exposed to a temperature of 18° C. will with the addition of $1:10,000$ on the 6th day, and in $1:5,000$ not before the 8th day, become sour. Such small quantities of formalin have no effect on the immunizing agents of the milk. Formalin milk of $1:10,000$ as proved, is for test animals very becoming; in fact, experiments carried out on the estates of the Grand Duke Frederic, in Teschen, proved that it was more beneficial for newly born calves than the milk free from formalin; an average gain of 10 klg. was the result from the former, against 7-8 klg. from the latter. Above all, however, the formalin milk proved itself as a great remedy against the mortality of calves. On one farm, where the

calves succumbed to such an extent that 48 hours after birth most every newly-born calf died, from the time the formalin milk was given not a single case of death could be recorded. The plague disappeared. To obtain the best results the formalin milk should be fed raw, as, according to Behring, not only the immunizing agents of tuberculosis, but also those against "white scour," are preserved. He states that cows' milk always contains protective agents against the *Bacterium coli*, which is the principal cause of that affection. Experiments in this direction are very simple and cheap, so that they can be carried out everywhere. The first administration is to be given immediately or soon after birth, with a sucking bottle. Cattle owners and veterinarians have both a great interest in this matter; therefore, to work!! Should the hopes as given above prove facts, the formalin preservation of the milk will revolutionize the dairy industry.—(*Zeitschr. f. Thiermed.*)

THE TREATMENT OF OBESITY WITH THYROID GLAND COMPOUNDS [Dr. A. Zimmerman].—The thyroid gland contains two albumen compounds, the thyreoproteid and the thyroïdin. The thyreoproteid is the product of material changes, while the thyroïdin is produced by the specific activity of the thyroid gland cells and it acts principally on the thyreoproteid. When this action is absent, as for instance after extirpation of the gland, then the accumulation of thyreoproteid produces an acute intoxication, the so-called kachexis strumipriva. In human medicine the thyroid gland compounds are applied for myxodemas, for Basedow's disease, for psoriasis and various nervous diseases. The veterinarians chiefly apply it for obesity. The influence of the thyroid gland on the organism manifests itself in the increase of nitrogenous changes. The consequence of this action is a considerable reduction of the body weight. The effect is quite rapid. The author treated seven dogs for obesity with thyroid compounds. The dose of the thyroïdin was 0.15 gm., with which exercise was given. The patients were house and pet dogs. Their ages varied from 3 to 10 years. Two patients were males, three females and two were castrated. The duration of the treatment extended from eight days up to five weeks. The average reduction of weight amounted from 26 to 143 gm.; the average for the seven registered cases being 97 gm. Unpleasant effects from the thyroïdin, as inappetence, depression, dizziness, tremors, diarrhoea, albuminuria, diabetes, as reported by some, were never observed by the author. The thyroïdin as a remedy for obesity of dogs is

given with three times the amount of pulv. rad. liquirit. As it easily decomposes, only small quantities should be ordered, and instructions given to keep the drug from light, heat and moisture. Should its application per os not agree with the patient, the same good results may be obtained from a 2 per cent. thyreoidin-lanolin salve, or with the thyreoidinum depuratum (0.01—0.05) subcutaneously.—(*Zeitschr f. Thiermed.*)

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

CLINICAL NOTES OF CANINE PRACTICE [*F. R. C. V. S.*].—It is not always easy to state what is the cause of ascites, although it is a symptom quite frequently observed. Sometimes it reappears after it has been removed by puncture of the abdomen or by other treatment. And there are also cases of recovery where the cause of the trouble remains unknown. *Example I.*—A terrier dog, six years old, is ailing; he has pined away for some time; has a cough; urinates little. The abdomen is distended; there is abdominal dropsy; the animal moves with difficulty. He is operated upon, and 1½ pints of fluid removed. Iodide of potassium and digitalis are prescribed. The cough improves, but after ten days the dropsical condition has returned as bad as ever. Operated upon again, 1½ pints of fluid are taken off. The dog is taken away by the owner, and lost sight of for several months, when he is seen again in perfect health. *Example II.*—Valuable thoroughbred bull dog has had eczema for some time, and has been treated for it. All of a sudden he loses flesh, coughs and ascites appears. The abdomen is so distended that puncture is decided upon. The trocar is introduced in three different places and only a small quantity of fluid extracted. Iodide and digitalis are prescribed. For a few days there is no change, but then the abdomen gradually diminishes and final radical recovery follows in a short time.—(*Vet. Rec.*, Nov. 12, 1904.)

A CASE OF TUBERCULOSIS IN THE HORSE [*E. A. Batt, M. R. C. V. S.*].—Bought in April, examined and passed sound, this horse worked regularly up to June 15, when he is observed to be dull, refusing his food, with slight nasal discharge and a temperature of 103°. He is able to resume work on the 19th, but only for a short time, as on the 24th he presents again the same symptoms and has a temperature of 106°. He then be-

comes greatly emaciated, eats well one day and nothing the next; now and then he looks at his flank; he has no polyuria. Auscultation and percussion reveal nothing abnormal towards the lung. As his temperature is too high, the tuberculin test cannot be applied, and the animal is turned out to wait until he has less fever. After two weeks, however, he is much worse. Rectal examination reveals the presence of a tumor as big as a hen's egg and attached to the intestine. This growth or some other is also felt on palpation of the left flank, when it seems as large as a cricket ball. The animal was destroyed. At the post-mortem the lymphatic glands of the cæcum and colon were found greatly enlarged,—many being as big as a ball, and along the groove of the colon they formed a continuous mass; the bronchial glands were also enlarged and miliary tubercles were scattered through both lungs; the other organs were healthy. Examination of the glands under the microscope revealed the presence of large numbers of tubercle bacilli. Taking in consideration the condition of the abdominal lesions, it is quite evident that the disease existed previous to the purchase of the animal.—(*Vet. Rec., Nov. 19, 1904.*)

FISTULA BEHIND THE SHOULDER [*E. W. Turner, M. R. C. V. S.*].—Among several cases reported by the author at a veterinary association, the following presents an unusual interest: An aged cart horse turned out to grass with a few bullocks was found one morning lame on the near fore leg. He could not get his shoulder forward and had a small puncture back of the shoulder about six inches above the cap of the elbow. This puncture looked as if it had been made with a nail and ran upwards for two inches. Hot fomentations were prescribed. About a week later a large abscess was found at the posterior border of the shoulder, from which an abundant discharge of pus was extracted. Warm water and antiseptic lotions failed to relieve entirely, and the discharge of pus continued, always copious. After a long trial, seeing no improvement, the owner ordered the horse destroyed. At the post-mortem the scapula was found enclosed in a semi-osseous case for two-thirds up towards the top and the cavity was full of pus, with no chance of a depending counter opening.—(*Vet. Rec., Nov. 19, 1904.*)

HERNIA OF THE UTERUS—REDUCTION—OPERATION [*Guy Sutton, M. R. C. V. S.*].—A small toy bull bitch has vomited all night; by the vulva she has a bloody discharge, and in the groin a large tumor. It is formed by hernia of the uterus, which contains a foetus at term, and it has one of its paws engaged

in the vagina. The size of the foetus is such that it cannot be extracted by the vagina, neither does it allow the reduction of the hernia. To realize this last, laparotomy has to be performed, and even yet it is only after much care and precaution that this mass is returned into the abdomen. But even then, removal of the foetuses, as there were two in the uterus, is impossible on account of their size. Amputation of the uterus is imposed. After thorough cleaning and antiseptic care, ligatures are applied above the ovaries and as near the vagina as possible, and the tissues between are resected. After minute disinfection the wound was closed and dressed with collodion and boric acid. There were no complications, and in a few days the little bitch was well. She only had a small hernial sac, which did not interfere with her.—(*Vet. Rec., Nov. 26, 1904.*)

VITALITY OF A CALF [*F. Norton Wallis M. R. C. V. S.*].—A Saturday evening as a farmer was bringing his cows home from the field he noticed that one was missing. She was advanced in calf and expected to deliver in a few days. Searches were made for her all night and all the day following, but she could not be found. In the evening, however, she was brought home with her calf, which was very small and puny, yet apparently in good health. The following Saturday, as the farmer was out, he found in the woods, close where the cow had been seen a week before, another calf, very thin and weak. It was taken home, and after a few days of care, became as well as the other, although he was not as big nor as robust.—(*Vet. Rec., Nov. 26, 1904.*)

THREE CASES OF LACERATION OF THE VAGINA [*E. A. Weston, G. M. V. C., V. S.*].—The first is that of a mare which at the time when she was served was so terribly injured that she died in a few hours. The superior wall of the vagina was torn on a large surface, and through the laceration the intestines had escaped and come out by the vulva. It seems that during the act of copulation, the mare remained perfectly quiet and it was only shortly after that she was taken with pains, strained violently, with the fatal result which occurred so rapidly. . . . The second case is that of a mare which was expected to foal in about a month. In good health one evening by 7 o'clock, she was taken with labor pains at 10, made violent expulsive efforts and when the author arrived he found her laying down with several yards of intestine hanging from her vulva and upon which she laid. She was killed immediately. There was a laceration of the floor of the vagina close to the os uteri. The

fœtus was in anterior presentation with both front legs in good position and the neck bent backwards with the head turned to the right. . . . In the third case, a mare in foal was found one morning with one fore foot of the colt protruding through the anus. This was pushed back in place and the mare delivered. She had a laceration of the upper wall of the vagina extending through the rectum. The perineum, vulva and anus were much swollen, but there were no general disturbances. The parts were well disinfected, the edges of the rectal wound brought together with sterilized catgut and the wound of the vagina left open to serve as a drain. The treatment consisted in creolin injections, severe diet, opium and aconite internally. Recovery was complete.—(*Vet. Rec., Dec. 3, 1904.*)

SEXUAL PRECOCITY IN FOALS [*E. A. Westrop, G. M. V. C., U. S.*].—At the age of six weeks a colt began to tease his mother, and before it was known he mounted and covered her like a stallion. He performed the act as an old horse would. It was not observed whether he ejaculated or not. When three months old he was running after heifers and fillies and became so annoying that he had to be castrated. From his early life he showed lack of natural affection, coming to his mother only to suck her and then leaving her to run after heifers and fillies. . . . Another case is that of a well-bred colt which when only two months old began to masturbate and has kept up this bad habit ever since. He was fed only on grass and had no stimulating food of any kind. During the act of masturbation, he stands with his back arched, his hind legs well under him and he squeals with pleasure. His general condition does not seem to suffer from his bad habit, although he does not look as well as he ought to.—(*Vet. Rec., Dec. 3, 1904.*)

TUBERCULEUSE MARE [*W. R. Davis, M. R. C. V. S.*].—A mare, four years old, after being broken to harness, is turned out. She is in fine condition. A few months later she is taken in, as she does not look so well. She is thin, scarcely eats, her mucous membranes are pale, yet her temperature and pulse are normal. She is in foal, having probably been covered by a colt turned out with her. Ten days later she has a foal, small but in good health. The mare continues getting thin; she has no cough; nothing abnormal can be detected at auscultation. She has a swelling, rather firm and not painful, in front of the arm, running up to the point of the shoulder and seeming to push into the chest. An injection of tuberculin gives no reaction. The mare is killed. When the knacker to bleed

her, dips his knife at the base of the neck, no blood escapes. In removing the skin that covers the swelling of the arm, the tumor appears with a pearl white color and is continued to the prescapular glands. At the opening of the abdomen, the enlarged liver is found with lots of tuberculous masses of various sizes. The colic mesentery presents a long chain of tuberculous glands and a big mass, weighing 7 pounds, is hanging from the lumbar region. The right ovary is full of tuberculous pus. No tubercles in the lungs. These removed with the heart, an enormous mass is exposed at the entrance of the chest, which it closes, and is compressing the trachea, oesophagus, bloodvessels and nerves, which enter the chest. Tuberle bacilli were found in quantities on examination of scrapings from the lesions. By the extent of the lesions Prof. McFadyean explains the failure of the tuberculin test.—(*Vet. Rec.*, Dec. 10, 1904.)

CASTRATION OF A SMALL CRYPTORCHID [*H. Snarry, M. R. C. V. S.*].—It is certainly a case worth recording. The author was called to examine a small pony, five years old, nine hands high, which lately has become vicious, does not allow children to approach him and acts as a stallion. It is a cryptorchid. Indeed, when cast and secured one cicatrix only is observed on the left side of the scrotum ; there is none on the right. With much care and difficulty the left testicle was removed ; it was about fully developed. In three weeks recovery was perfect, and the little fellow behaved well.—(*Vet. Rec.*, Dec. 10, 1904.)

“PREVENTABLE AND CURABLE DISEASES OF ANIMALS” was the theme presented by Dr. M. H. Reynolds, of the University of Minnesota, before the Minnesota State Dairymen’s Association, held at Albert Lea, December 13-15.

HORSES FOR THE PHILIPPINES.—Just now a big order for cavalry horses for Uncle Sam’s account is being filled in the Chicago market. A peculiar feature of this contract is that most of the animals must be mares, whereas ordinarily the Government buys only geldings for army uses. The bunch now being purchased is intended for service in the Philippines, and after a time the mares will be drafted out and sold for breeding purposes. The insular authorities have announced their intention of doing all they can to encourage horse breeding in the Philippines with a view to obtaining continually troop horses native-bred, and so less liable to attacks by disease in the strange land and climate.—(*Breeder’s Gazette*.)

ARMY VETERINARY DEPARTMENT.

THE RINDERPEST AND THE EFFECT OF KOCH'S BILE INOCULATION.

(Continued from Vol. XXVIII, page 1184.)

The diseased cattle were kept in a separate barn and their temperatures taken twice daily. Although the temperature charts vary greatly, they nevertheless give certain common indications of value to the prognosis. This is particularly so with cases that will terminate fatally. They show after the fourth day of inoculation fever, and diarrhoea develops soon afterwards, which in another day turns bloody. Death occurs in about seven days, in spite of the bile-inoculation. But other animals of the same herd, inoculated with the same quantity of the same bile, although they also became ill, recovered on about the seventh day. The cause of this unfavorable result in the disease in certain animals cannot be explained in any other way but that they naturally possess a lesser resistance towards the infectious agent, as will be shown later on.

The height of the fever alone does not indicate an unfavorable turn in the disease, as none of the oxen with a temperature of 41° C. died. Neither does bloody discharge alone indicate a fatal termination. But both symptoms taken together, if they follow each other quickly, give always an unfavorable prognosis.

From the post-mortem examinations it was further learned that there existed no particular difference in the extent and character of the local pathological affections of those animals that died early in an acute attack, or those that died after the acute attack had passed, or those few cases that finally died without having shown marked clinical symptoms and that promised recovery. Thus the specific clinical picture of the disease and its final termination is not so much dependent upon the anatomical-pathological alterations produced, as from a more or less quick and intensive biological effect of the organized poison of the pest.

The last day of fever of those animals which recovered was four times the fourth day, twice the first day, and only once the seventh day. Two oxen which still had fever on the eighth day died. This observation coincides with those made by Koch and Kalle, who maintain that the immunization is completed on the seventh day. If the bile has not effected its favorable result

up to that day, it is a sign that it has been destroyed and the animal succumbs to the pest-poison as if it had not been inoculated.

As regards the effect of the bile itself, we cannot agree with the opinion advanced that it contains the pest-poison in a virulent or attenuated form, and that its inoculation leads to an active immunization. It cannot be so, for bile taken under aseptic precautions is not infectious, and the duration of its protective action extends only over a short period of three to five months. But the immunization effected by inoculation of virulent pest-blood extends over years, and most likely for a lifetime. The protective bile-inoculation according to Koch's method is merely a passive immunization, brought about by the injection of bile that contains antibodies which become bound to the pest-toxines in the blood. The pest-toxine is produced by the local morbid processes of the intestines (ulcers), which enters into the circulation as soon as formed, and produces the pest-fever. The development of the pest-antitoxines after injection of bile soon shows itself by a perceptible fall in body-temperature, followed by a decline or cessation of diarrhoea, effects which were so markedly observed in those many cases that recovered from the rinderpest.

But it is possible that the pest-toxines remain predominant in the course of the disease. If the introduced bile-antitoxines were not of sufficient quantity to counteract larger quantities of pest-toxines as are occasionally produced in several affections of rinderpest, then the remaining surplus of the pest-toxine finally kills the animal. Such cases were observed in several animals of herd C. Their temperatures remained continually high after inoculation, the diarrhoea did not desist, and the animals died.

It is further prescribed that the bile-antitoxines may at first produce beneficial results as seen by a reduced fever, etc., but they are finally overcome by a continued production of pest-toxines newly developing in intestinal ulcers. Examples of such cases we had in two oxen which still had normal temperatures on the fourth day after the inoculation, but they finally showed a rise in temperature on the seventh day. Late on the same day bloody diarrhoea developed and death occurred on the ninth day.

If the unfavorable termination in these cases was dependent upon an insufficient amount of bile-antitoxine injected, then it should be possible to prevent it by a larger dose of bile. That this contention is correct was proven by the course and termi-

nation of a case which from want of bile could not be inoculated before the third day after a visible affection of rinderpest. The animal received a double dose of bile of 20 c. c., with the result that the body temperature fell on the next evening and became normal on the second day after the injection. The diarrhoea remained bloodless and the animal recovered.

To sum up the result of this protective inoculation it must be stated that 41 oxen were more or less affected by the disease when inoculated, yet the herds only showed a mortality of 10 per cent. against a mortality of 90 per cent. without bile inoculation. That this percentage can be still further reduced, so that almost every diseased animal may be saved, if good bile in sufficient quantity can be promptly injected, is most probable from our observations.

But such favorable result of Koch's bile-inoculation cannot be expected in practice, because its procedure is only possible if a certain number of animals have already succumbed to the disease and continue to die so that a supply of bile of sufficient quantity and good quality may be uninterruptedly secured. This method cannot, therefore, be sufficient to save all or nearly all animals of an infected herd.

Another drawback of Koch's inoculation is that it only produces a passive immunity for a comparatively short period. As far as infected herds of beef-cattle in an army in the field are concerned, this disadvantage is of little consequence, because the animals are gradually slaughtered as soon as fit for butchering after recovery of the disease. But the conditions in Africa demanded a larger period of immunity, and a method producing such was devised by Koch by the injection of 2 c. c. of virulent pest-blood between the 40-50 days after inoculation with bile, a method which produces an active immunization lasting during the lifetime of the animal.

Still, even this more complicated method depends primarily on previous death of certain numbers of animals, and it requires a longer time to complete the immunization. It was, therefore, a decided progress when Kalle introduced the *simultaneous* injection of highly-virulent pest-blood and of immunized rinderpest serum on both sides of the neck of an animal. By this method over a million of cattle were saved from rinderpest in Africa.

Inasmuch as Kalle's method depends upon the production of rinderpest-serum in a laboratory, it is not applicable to infected cattle-herds of an army in the field, because no labora-

tories can be maintained with a moving army. Thus, in spite of its shortcomings, Koch's bile-inoculation will again be resorted to in future wars in countries where rinderpest is indigenous or likely to be introduced, because it is a ready method that consumes little time. Its success, however, depends in no small measure upon prompt establishment of a quarantine-station for beef-cattle, the immediate isolation of the well from the sick and infected, and the prompt injection of bile as soon as a good quality of bile can be procured by the death of an animal.

NAIL PUNCTURES OF THE HOOF.

NOTHING ORIGINAL, BUT A NEW WAY OF EMPLOYING AN OLD REMEDY.

By L. E. WILLYOUNG, Veterinarian Artillery Corps, Fort Sam Houston, Texas.

Diversification in treatment and clinical methods are found, perhaps, more common in this form of injury than in any other part of equine pathology.

The Southern States have always enjoyed the unfortunate reputation of reporting numerically more cases of tetanus due to hoof injury than those of colder latitude; the same may be said of the extreme tropical possessions.

Punctures of the sole are common in any locality, of course depending on the careless manner in which nails are dropped by mechanics during the construction of buildings; ashes containing nails strewn on the ground are also a common source of injury. It may be a fact that tetanus bacilli exist in abundance in the South, but if this be true, its manifestations have not been apparent during my experience of over two years in this State.

The top-soil in this immediate vicinity consists of a black gumbo, which when dry hardens like cement, and this accounts, no doubt, for the frequent punctures we encounter among our horses of the Artillery. It is a common sight to see nails embedded, point upwards, ready to penetrate the inoffensive hoof.

Army horses at this post are not stabled on wood floors; the stalls are in most instances dry from early morn until night; hence we do not have the same tendency to infection which arises from urine-soaked wood floors that exist in most cities. Nail pricks here, especially if the offending agent still remains in the frog or sole, are in nearly all cases, discovered the day on which the injury occurs, due to the rigorous system of thoroughly examining and cleaning the bottom surface of the hoof twice

daily, it being rare that suppuration is manifest—in fact, suppurative puncture wounds are the exception.

Since April, 1903, our records show nail pricks as follows: April, 1903, 3; May, 5; June, 2; July, 3; August, 3; Sept., 3; Oct., 3; Nov., 6; Dec., 10; Jan., 1904, 7; Feb., 8; March, 7; April, 3; May, 2; June, 10; July, 6; August, 2; Sept., 7; Oct., 2; Nov., 6; Dec., 5; total 103.

These punctures occurred among 208 horses of this battalion; all animals were lame; all punctures reached the sensitive structures; the major portion were punctures through the frog; all were treated alike, and all recovered inside of two weeks without permanent lameness or navicular complication. It may be further stated that with but two exceptions, the injuries occurred among different horses, showing that nearly 50 per cent. were affected in this manner.

Our method of treatment is as follows: Removal of the shoe and the offending agent, thorough cleansing of the entire hoof with soap and hot water, a funnel shaped opening is pared through the sole to the sensitive structures; pure carbolic acid is then either forced into the wound its entire length or depth, or is poured into the wound and probed to its bottom.

Several years ago the subcutaneous injection of carbolic acid was advocated in the treatment of tetanus; the results were in a measure successful. This acid employed in tetanus, subcutem, even in the extreme dose of one drachm, diluted with water or glycerine, or undiluted, injected at intervals of two to four hours, appears to manifest a specific influence toward mitigating tonic spasm, relaxation of muscular tension, producing some intestinal peristalsis, and an appreciable reduction of temperature. In two cases I have administered one ounce inside of 24 hours in drachm doses, at intervals of two to four hours, with recovery from trismus, and other voluntary muscles. This relaxation usually follows at the end of 36 to 48 hours.

I will state here that in both cases laxative medicine was administered before trismus was pronounced.

In nail pricks, "assuming that infective matter has been carried into the wound by means of the nail," as Dr. Van Es writes in his well-directed article in the March REVIEW, it may be mentioned here that our method of irrigating the entire wound with pure carbolic acid will and does destroy, in nearly all cases, any infection of microbian origin and render the wound a clean self-draining one.

The application to sensitive tissue of pure carbolic acid gives

rise to but a slight irritative sensation. Try it. If water is added to the acid, the pain is much more severe. Pure carbolic acid applied to human skin and allowed to remain there, produces an eschar, with desquamation in two or three days. If, however, the acid be diluted with a small quantity of water, the results are different, and the injury becomes more extensive. In applying the acid to the puncture we do no harm to surrounding tissue, and a moment after it is forced into the wound its analgesic effects are noticed. Usually but one application of the acid is sufficient. If, however, the wound does suppurate, we employ its use again.

Our next step in the clinical treatment is to apply an antiseptic poultice, consisting of a hot preparation of flax-seed meal, mixed with a solution of creolin (1 to 100), enclosing the entire hoof for 24 hours. This is always followed by hot soak of permanganate of potash solution, one ounce to four gallons of water, until lameness subsides. This is done daily for about four hours. During the intervals between soaking, a dry gauze or cotton dressing is kept closely applied, and when the wound is dry and healed a shoe is applied, having leather, oakum, and pine tar placed between it and the hoof. Our experience here has shown that an animal treated in this manner will be ready for the harness in from four to six days.

While continued poultices are conducive to microbic life, it is an undisputed fact that an antiseptic poultice affords capillary attractions, its emollient properties act beneficially to an unyielding dense horn, if judiciously applied for a short time, and my experience has led me to believe that in all such cases "they do more good than harm." The above record is the result of 21 months' experience in treating Artillery horses, and, while we may be in a position to exercise authority in the treatment of public animals under our care, we are still handicapped by lack of facilities, proper attendants and hospitals.

PERSONAL.

DR. SAMUEL GLASSON, veterinarian 9th Cavalry, who has recently been on a two-month's furlough, has left San Francisco to join his regiment at Fort Riley, Kansas, where it is thought he will be assigned to a chair in the United States Army School of Farriery.

DR. ALEXANDER PLUMMER, veterinarian 4th Cavalry, has been placed at the head of the examining board for veterinarians about to enter the service.

CORRESPONDENCE.

VACCINATIONS AGAINST TUBERCULOSIS—REPLY TO DR. PEARSON'S CHARGES.

NEW YORK, March 16, 1905.

Editors American Veterinary Review:

DEAR SIRS:—In the March issue of your valuable journal we notice a letter from Dr. Leonard Pearson, in regard to Prof. von Behring's Bovovaccine for immunizing cattle against tuberculosis, in which letter Dr. Pearson sets forth certain reasons as to why this method should not be taken up. As a matter of fairness to all parties around, as well as to the readers of your paper, we herewith beg leave to enclose you our answer to these entirely unfounded charges, and we hope that you will give this letter space in your paper. There is no doubt whatever that this question is of interest to the majority of your readers, who certainly will be more than interested to hear our view and side of this matter.

Very truly yours, C. BISCHOFF & Co.

* * *

Our attention has been called to a circular letter that has been sent out by Dr. Leonard Pearson, the State Veterinarian of Pennsylvania, in which he belittles and decries the work of von Behring, in regard to immunization against cattle tuberculosis. The matter is certainly of such great importance, that, while we are fully in a position to answer these entirely unfounded charges made by Dr. Pearson, we think it advisable, that his letter shall be brought to the attention of Prof. von Behring himself, who, we have no doubt whatever, will answer direct to them.

At this time, however, we think it not out of place to bring to the notice of all parties interested, that notwithstanding all the claims made to the contrary by Dr. Pearson, facts on record prove beyond any question whatever, that Prof. von Behring's experiments with immunization against tuberculosis date back a great many years, and from our knowledge we believe even before 1895, and that the practical application of those experiments was started in 1901; consequently the statement of Dr. Pearson, that Behring only recently adopted the method of inoculation, is entirely without foundation. While there might have been some changes as to the mode of application, the principle, nevertheless, remained the same during all those years.

Facts on record positively prove, that animals vaccinated after the von Behring method have not responded to the tuber-

culin test and show no reaction whatever, which entirely refutes the charge made by Pearson, that those animals developed tuberculosis in an excessively severe form.

Most complete and minute researches during post-mortem examinations failed to reveal the presence of any tubercle bacilli in any of the animals that were thus immunized. We do admit, that a few cases did result in failures, but as you know such things happen to the most scientific men and to the most tried and known methods, and if any one with an unprejudiced mind will consider those few failures in the 15,000 cattle that have been inoculated, it is only one possible conclusion that he can come to, and that is, that the process is a success.

As to vaccinating older cattle, as well as cows in milk; or cows carrying calves, we have stated distinctly, that Behring does not recommend the immunization of any animals but those that come within the limited age of from three weeks to three months, and it is certainly but natural and within the understanding of anybody, even with an ordinary education, that milk cows, or cows carrying calves, or unhealthy animals in general, should not be inoculated, and we call your special attention to the advice laid down by Behring, where he says distinctly, that older animals must first undergo the tuberculin test, so as to prove the absence of the disease before they can be inoculated.

Literature pertaining to these different points is on record ; the number of failures out of the 15,000 cattle immunized are also on record ; consequently it is easy to prove the entire questionable value of the charges made against this method.

We are certainly aware, and did expect some sort of opposition to the introduction of Prof. von Behring's Bovovaccine, as we know that all great discoveries, in medicine especially, bring forth protests and opposition from inferior minds, and if any one will recollect the storm of abuse that was heaped upon Prof. von Behring, the discoverer of anti-toxin for diphtheria, and which, by the way, has proved such a great boon to humanity, in saving hundreds and hundreds of children's lives from the clasps of diphtheria, we are not at all surprised at some of the opposition that was called forth on this occasion, but we would like to have everything on a fair and square ground.

We note that the final conclusion arrived at by Dr. Pearson is, that the production and sale of vaccines, anti-toxines, etc., for animals as well as for man, should be under more stringent State control, and in regard to this particular point we beg leave to say, that we should only be too pleased to have the

State assume charge and control of this matter, and see that the inoculations should be done properly, and we would be willing and pleased to supply the Bovovaccine free of charge, on the first few occasions, in order to prove to the country at large, that in this Bovovaccine the world has received finally its answer to this great problem of bovine tuberculosis.

Any impartial man, who has been reading our correspondence and literature which has been sent out in regard to Prof. von Behring's Bovovaccine, will certainly agree, that we have been perfectly ethical in every possible way, and we strongly protest against Dr. Pearson's term, that our letter and claims are of the patent medicine variety.

We merely ask from you, dear sir, an impartial and fair trial for the Behring method, and are perfectly willing to stand and abide by results as obtained after the inoculations.

Very truly yours, C. BISCHOFF & Co.

PARTURIENT PARESIS IN A PRIMIPARA.

DAYTON, OHIO, March, 6, 1904.

Editors American Veterinary Review:

DEAR SIRS:—I noticed in the February number of the REVIEW, in the report of the meeting of the Ontario Veterinary Association, a paragraph which I will quote:

"Dr. Barnes gave a short address, showing deep thought, on the actual cause of parturient toxicosis (parturient apoplexy). He asked why does it not occur at the first calving? An interesting discussion ensued, in which Drs. Reed, Mole, and others participated."

I should like to answer Dr. Barnes' question. It has occurred at first calving, and it was not in a deep milking breed. The case I will refer to was a full-blooded Shorthorn heifer of the Crookshank family, a few days over eighteen months old, the property of Mr. C. L. Gerlaugh, of Osborn, Ohio, an importer and breeder of Shorthorns of the Crookshank family. This was a very fine show heifer and was accidentally bred by a young bull breaking into her paddock. At the time of calving she had very little more udder development than any other heifer of her breed kept in show condition, which she was. Her owner intended to wean the calf, dry up the small secretion of milk, and exhibit her at the State fairs as a yearling heifer, with others of his herd. In the afternoon of June 23, 1904, Mr. Gerlaugh telephoned to me to come on the train to Osborn,

where he could meet me and take me to his farm to treat a case of milk fever. When we met at Osborn, he informed me that the heifer had calved the day before and had become paralyzed the afternoon he called me. He had ordered broken ice kept on her head. When we arrived at the farm, we found broken ice and salt on her head, which was slightly frozen to the hair. The ice was removed at once. An examination showed the heifer to be in a comatose condition, eyes amaurotic, temperature subnormal, and unable to rise. I gave her the Schmidt treatment, left instructions for her care and treatment, and then left for home. I visited her the next day, arriving at the farm about 10 A. M. The patient was reported to have been on her feet about an hour before and drank a bucket of water. When we went into the stable, she got up and stayed on her feet until after I left for home ; she was weak and unsteady in her movements, temperature was normal, bowels and kidneys were acting, and a favorable recovery was expected. On the morning of the 25th, Mr. Gerlaugh telephoned me that he considered her out of all danger. He said she was drinking well and eating the little bran mash I had ordered. The bowels and kidneys were acting freely.

WALTER SHAW.

THE INTERNATIONAL VETERINARY CONGRESS.

KANSAS CITY, March 9, 1905.

Editors American Veterinary Review :

DEAR SIRS :—There will be in connection with the Eighth International Veterinary Congress at Budapest, Hungary, an International Conference on tropical diseases. At the meeting at Capetown, the representatives of the English Colonies of South Africa discussed the animal diseases prevalent there, and at the closing meeting of this Conference it was decided to take steps to have in connection with the International Veterinary Congress, which will be held this year at Budapest, a special conference, to which the South African States and Colonies, the English Colonies of Australia and New Zealand, India, Egypt, the United States of America, the South American States, in fact the representation of all those States and Colonies shall be invited in which the same or similar diseases as those of South Africa are prevalent among the domesticated animals. The Executive Committee of the Congress had already previously to this action placed on its programme the discussion of the tropical disease. However, the conclusion of the Cape-town conference will considerably add to the interest taken by

the most eminent scientists in all parts of the world towards the approaching International Veterinary Congress at Budapest. Recently, Dr. S. de Ratz, General Secretary of the Congress, was notified of the organization of local committees from the following places : Dr. Lüdtin of Baden-Baden, Binder of Vienna, Dr. Bang of Copenhagen, A. Cope of London, Dr. Nogueira of Lisbon, Prof. Dr. Thomassen of the Utrecht University, A. Malm of Norway, and A. Popovits of Belgrade. These, with the committees already announced of Prussia, Saxony, Italy, France, Belgique and Hessen (in most of the European States the local committees are organized), which undoubtedly proves the great interest taken towards the Congress. Should members of the veterinary profession of America desire to attend the Congress, I will gladly furnish all information regarding the trip, traveling, and expenses connected with the same.

DR. ADOLPH EICHHORN.

Room 328, Live Stock Exchange, Kansas City, Mo.

CHEERING NEWS FROM FLORIDA.

TAMPA, FLA., March 17, 1905.

Editors American Veterinary Review :

DEAR SIRS :—I have just read Dr. Dawson's letter in the current REVIEW entitled "The Florida Variety." It is very true, but there is a chance that it will not always be so. Under the direction of State Senator Crane I am even now circulating a petition that will result in the introduction of a bill at the coming session of the State Legislature, for a law governing the practice of veterinary medicine.

I have met no one who has not regarded it in a favorable light ; I have endorsement from the State Board of Health, and Senator Crane, who will take care of the measure for me, says he believes it will go. As there is no veterinary medical association in this State, and the few of us here are widely scattered, I must needs work alone. If the law goes through I shall feel proud of it. If not, I have at least started something that will materialize sometime. Very truly yours,

FRED W. PORTER, D. V. M.

THE LITERATURE OF PROTARGOL.

NEW YORK, March 17, 1905.

Editors American Veterinary Review :

DEAR SIRS :—Our attention has been called to the fact that in the March issue of your journal it is stated that no literature

on protargol exists. This is certainly an error in view of the immense number of articles which have appeared on this preparation both in European and American journals. We presume, however, that this remark referred only to veterinary reports, but even of these there are several, three of which were published in your journal. Among the more important contributions we would refer you to the following : AMERICAN VETERINARY REVIEW, May, 1901 (p. 143), by Dr. T. Hendrickx ; Aug., 1902, by Dr. W. E. A. Wyman ; and Jan., 1901, by Dr. Wm. Petrie. *Journal of Comparat. Med. and Vet. Arch.*, Aug., 1901, by Dr. W. H. Wheeler ; July, 1902, by Dr. Albrecht ; May, 1902, by Dr. W. E. A. Wyman ; July, 1902, by Dr. G. M. Boon ; June, 1900, by Dr. W. T. Campbell.

With kindest regards, believe us, Yours very truly,
FARBENFABRIKEN OF ELBERFELD CO.

MISSOURI SECURES A PRACTICE ACT—KANSAS FAILS.

KANSAS CITY, Mo., March 24, 1905.

Editors American Veterinary Review:

DEAR SIRS:—On March 23d the Governor of Missouri approved a bill enacted by the legislature regulating the practice of veterinary science in the State of Missouri. It provides for the registration of practitioners who have gained a livelihood by veterinary practice for three years prior to January 1, 1906. It also provides for a Board of Veterinary Examiners, and that persons seeking certificates to practice, after January 1, 1906, shall be veterinary graduates, and shall pass an examination before a license shall be issued.

Efforts to secure veterinary legislation in the State of Kansas proved a failure for want of hearty and general support by the veterinarians of the State. Very sincerely yours,

S. STEWART.

THE TRANSMISSION OF MUTILATION MARKS TO OFFSPRING.

DENVER, COLO., Feb. 24, 1905.

Editors American Veterinary Review:

DEAR SIRS:—I note with much interest in last issue of the REVIEW Dr. Thomas Farmer's remarks on "Heredity." The doctor goes on to say that the effects of mutilation are open to serious objection ; for instance, circumcision of the Jews and the dehorning of cattle not being transmitted to offspring.

I beg to call the doctor's attention, as well as the profession

at large, to an experience I met with in my practice since coming to Denver which was entirely new to me and perhaps to all or most of the profession.

I was called Nov. 30th, 1904, to aid and assist a fox terrier bitch during labor. There was born three puppies, all having their tails perfectly bobbed.

This I consider is ample proof of the possibility of mutilation being inherited, since it has been the custom for many generations to cut the fox terrier's tail.

Yours truly, MARK WHITE, JR., V. M. D.

HUMAN AND BOVINE TUBERCULOUS DISEASE.—In a recent contribution to the casuistics of the relations of human and bovine tuberculous disease (*Archiv für pathologische Anatomie und Physiologie und für klinische Medicin*, clxxvii, 3; *Berliner klinische Wochenschrift*, January 23d) Ipsen records the case of a child, ten months old, in which there was found post-mortem ordinary tuberculous disease of the lungs, the intestines, and other organs, together with an affection of the intestinal peritoneum corresponding to one of the forms of the disease in cattle, in both its gross and its microscopical appearance. Such cases, it is remarked, are very rare in literature.

LICENSED TO PRACTICE IN NEW JERSEY.—The following persons passed the January examination of the State Board of Veterinary Medical Examiners at Trenton and have been duly licensed to practice veterinary medicine, surgery, and dentistry in the State of New Jersey: Edward A. Durner, D. V. S., New York University (N. Y.-A. V. C.), 1904, New York City; Chas. S. Thompson, D. V. S., New York University (N. Y.-A. V. C.), 1904, Newark, N. J.; Ralph Lee Thompson, V. M. D., University of Pennsylvania (Vet. Dept.), 1904, Haddonfield, N. J.; Otis H. Downs, D. V. S., Kansas City Veterinary College, Englewood, N. J.

"SPECIAL REPORT ON DISEASES OF CATTLE."—The revised edition of the Government work on the "Diseases of Cattle," issued by the Bureau of Animal Industry, Department of Agriculture, Washington, D. C., is now out and can be procured by application to members of Congress or U. S. Senators. The various chapters of the work have been prepared by different veterinarians of national reputation, including Drs. D. E. Salmon, Theobald Smith, Leonard Pearson, William Herbert Lowe, James Law, Ch. Wardell Stiles and John R. Mohler.

NEBRASKA VETERINARY LAW.

The Nebraska Veterinary Medical Association has caused to be introduced in the Legislature the following bill (Senate File 105), and Dr. A. T. Peters, of Lincoln, under date of March 10, says: "This bill has passed the Senate unanimously, and at this writing is already on general file in the House, and if nothing unforeseen happens, will pass that body."

A BILL.

For an act to establish a State Board of Veterinary Medicine, to Regulate the Practice of Veterinary Medicine, Veterinary Surgery, Veterinary Dentistry, or any Branch Thereof, and to provide for the Appointment of Examiners and Secretaries thereof, to Protect the Title of those engaged in the practice thereof, and to provide penalties for the violation thereof.

Be it enacted by the Legislature of the State of Nebraska:

SECTION 1. There shall be established in the State of Nebraska a Board styled The Nebraska State Board of Veterinary Medicine. Said Board shall consist of the Governor, Secretary of State and State Auditor and said Board shall appoint three qualified veterinarians as examiners or secretaries, each of whom shall be a graduate of a recognized veterinary college or university, one of whom shall be appointed for the term of one year, one for the term of two years, and one for the term of three years, and thereafter it shall be the duty of said Board to appoint or reappoint one secretary or examiner each year who shall hold said office for the term of three years and until his successor shall be appointed and qualified.

SECTION 2. Said Board of Examiners or Secretaries shall within thirty days after their appointment meet and organize by the election of a president, secretary and treasurer from its own members who shall be elected for the term of one year and serve until their successors are elected and qualified, and shall perform the duties prescribed by the Board. It shall be the duty of said Board of Examiners to examine all applicants for license to practice veterinary medicine, surgery, or dentistry in the State of Nebraska, and to grant certificates to such persons as may be entitled to the same under the provisions of this act. Said Board shall hold meetings for examination at the Capitol

on the second Wednesday of April and October of each year, and such other meetings as may be necessary, each session not to exceed three days. It shall have a common seal and the president shall have the power to administer oaths. All certificates issued by said Board shall be signed by the president and secretary and attested with its seal. Said certificates when so issued shall be conclusive as to the rights of the lawful holder of the same and shall entitle holder to practice veterinary medicine, surgery, and dentistry in this State, under such title as he may deem fit, until revoked. Two of said Board shall constitute a quorum, and said Board may make and adopt all necessary rules, regulations and by-laws not contrary to law, to enable it to perform its duties under the provisions of this act.

SECTION 3. Said Board shall keep a record of all its proceedings and also a record or register of all applicants for license and licenses issued together with name, age, and residence of applicant, the time spent in the study and practice of veterinary medicine, surgery, and dentistry, and location, and the name of location of the college or university of which said applicant is a graduate, in which he has pursued such studies. Said books and records shall be competent evidence of all matters therein contained.

SECTION 4. No person engaged in the practice of veterinary medicine, veterinary surgery, veterinary dentistry, or any branch thereof, shall assume or use the title of veterinary surgeon or analogous or the title of any degree or part of a degree conferred by any recognized veterinary college or university unless he shall be the lawful holder of a certificate or license issued in accordance with the provisions of this act.

SECTION 5. All applicants for certificates as aforesaid shall be required to pass satisfactory examination in such subjects and topics, a knowledge of which is commonly and generally required of candidates for degrees in reputable veterinary colleges or universities in the United States. All examinations provided for in this act shall be conducted under rules and regulations prescribed by the Board, which shall provide for fair and wholly impartial methods of examination.

SECTION 6. Every applicant for examination and certificate under the provisions of this act shall pay to the Board of Examiners prior to his examination the sum of \$5.00 and said Board of Examiners shall receive no fee or salary from the State but the fees received from applicants shall defray all expenses of said Board.

SECTION 7. The Board may refuse to issue a certificate or may revoke or cancel one already issued for any of the following causes; to wit; the employment of fraud or deception in applying for said license or certificate, or in passing examination provided for in this act; conviction of crime involving immoral turpitude; habitual intemperance in the use of ardent spirits, narcotics, or stimulants.

SECTION 8. Any person violating any of the provisions of this act shall be deemed guilty of a misdemeanor and upon conviction shall be punished by a fine not less than \$25.00 nor more than \$100.00, or by imprisonment in the county jail for a term of not less than thirty days, nor more than ninety days, for each and every offense, and cost of prosecution, and shall stand committed until such fine and costs are paid.

SECTION 9. Nothing in this act shall prevent any person practicing veterinary medicine, veterinary surgery, or veterinary dentistry in the state, provided, said person shall not assume or use the title veterinarian or analogous title, or that of any degree or part thereof conferred by a recognized veterinary college or university.

SECTION 10. Whereas, an emergency exists, this act shall take effect and be in force from and after its passage and approval as provided by law.

NEW JERSEY VETERINARY REGISTER.—Dr. Wm. Herbert Lowe is now completing the work of the revision of the "Veterinary Medical Register of the State of New Jersey," issued in 1900, and would appreciate any data that will make the Register more accurate and complete. Veterinarians are reminded not to neglect to notify the compiler of removals, changes of address, etc.

BULLETIN No. 90 from the Utah Experiment Station deals with the fattening of animals on beet pulp and refuse beet molasses to cattle and sheep fed with alfalfa in all and grain in some instances. Steers fed pulp and alfalfa alone made a net profit of \$11.56 per head in 107 days and the gain cost only \$2.80 per cwt. The daily gain was 1.48 pounds. A gain of 2.65 pounds per day was made when grain was added to the former ration and the net profit was \$7.03 in 107 days. Good net profits are also reported from pulp-fed sheep. The bulletin may be obtained on application to the Utah Experiment Station, Logan, Utah.

A COMEDY.*

BY MAUDE MIRIAM MILLER.

A horse that tried to jump a fence
Got worsted at his own expense,
Without a witness of defence,
He was a horse of indolence
Not noted for his abstinence
But famed for his circumference
And heavy weight magnificence.
His breadth was certainly immense,
Small his supply of commonsense;
You should have seen this horse commence
To learn to jump a barbed wire fence,
It was the greatest evidence
Of his half witted innocence,
To jump a fence this horse was bent
But he was destined to repent—
This animal intelligent
Learned pride must have a swift descent
After a fall so violent
As that one which he underwent.
When torn in every ligament
He spoke in language vehement
At his ill timed experiment
Which ended in the accident.
He moved his body corpulent
And groaned in sorrow evident
Because of the illstarred event.
Intending not to mope and pine
And thinking it was time to dine,
He stopped the peevish little whine
And tried his forces to combine
And rise from the unwished decline.
He slowly accomplished his design,
Then calmly nibbled pumpkin vine;
And with an intuition fine
And very plainly masculine
This lesson of grave discipline
The old plug could no more define
Than could a silly porcupine—
But then he had an awful chill
And felt extremely stiff and ill.
A pompous man of stubborn will
With V. S. for a codicil
Was called to give this horse a pill.
His sense was smaller than his bill
For he allowed that horse to swill

* Read by President Miller at the Meeting of the Iowa State V. M. A., Jan. 25-26, 1905.

Of whiskey more than half a gill—
But then, you know this pompous wight
Was really a little tight,
This horse, from brandy mixed with spite
Kicked that vet higher than a kite,
And sent him nearly out of sight,
For o'er the fence he fell in fright,
Much to the nags inward delight
Who thought it keened his appetite
More than a dose of aconite.

COLLEGE COMMENCEMENTS.

KANSAS CITY VETERINARY COLLEGE.

The commencement exercises were held Tuesday evening, March 14, in the college building and the following large class was graduated: R. Logan Allen, Lloyd Ashlock, Joseph G. Beattie, George W. E. Bromell, Edward A. Bundy, George E. Butin, Leroy M. Chambers, Lloyd Champlain, Roy R. Clark, Charles B. Clement, Gardner W. Clossen, Charles C. Conley, Alva G. Coppenbarger, Lewis Cravens, T. Byron Cracraft, Hugh T. Doak, Jaroslav J. Drasky, Robert B. Grimes, George A. Hanvey, Jr., Clarence E. Hart, Robert H. Hayes, Thomas S. Hickman, Walter F. Holbrook, Mearl W. Hughes, Frank Jelen, Roy Jones, Edward H. Kilian, Christopher C. Kinsley, R. W. C. Lowry, Will E. McClure, Ira W. McEachran, George A. Meixel, George J. Mutziger, John H. Oesterhaus, Ole C. Olsen, Benjamin P. Rainey, George A. Revercomb, R. Lee Rhea, James D. Rinker, Fred W. Roach, William H. Saylor, D. Clark Scott, Fred L. Schneider, Emry C. Sheumaker, Peter Simonson, Charles R. Treadway, William H. Tuck, Frank H. Tucker, Benjamin F. Webster, Benjamin H. Yenner, William Yenner. *Special Course*—Samuel E. Hershey, V. S., Orange V. Phillips, V. S., Henry J. Sebaugh, D. V. S.

WESTERN VETERINARY COLLEGE.

The eighth annual commencement exercises of the above school were held in the College Auditorium, 1123 Holmes Street, Kansas City, Mo., on Tuesday, March 7, at 8 p. m. The following received diplomas on this occasion: George Allen Abbott, Medford, Wis.; Elza E. Bell, Athens, Ohio; George H. Atkinson, Oshkosh, Wis.; Ernest G. L. Harbour, Overbrook, Kans.; William W. Thomas, Jr., Wichita, Kans.; Earle A. Bow-

man, Overbrook, Kans.; Arthur M. Haushalter, Menomonee Falls, Wis.; Albert C. Dunlap, Cadiz, Ohio; John J. Streng, Melrose, Kans.; Frank F. Schmidt, Deepwater, Mo.; George H. Scheuer, Manchester, Mo.; Wilbur N. Mateer, Syracuse, Kans.; Thomas A. Long, Mound City, Mo.; Willis T. Christison, Lebo, Kans.; William F. Jones, Jefferson, Oreg.; Anton E. Byron, Bristol, S. Dak.; George D. Byerley, Overbrook, Kans.; Harry P. Gray, Cole Camp, Mo.; J. W. Rossiter, Alden, Mich.; D. Albert Yowell, Monroe City, Mo.; Morton F. Hutton, Canton, Ill.; Albert J. Erickson, Tustin, Mich.; John P. Jones, Beattie, Kans.; Clement Kelnhofner, Medford, Wis.; James H. Sterett, Paris, Mo.; Fred Gilgen, Highland, Ill.; Harry H. Thomas, Wichita, Kans.; S. Charles Page, Cokeville, Wyo.; William C. Shikles, Plattsburg, Mo.

SAN FRANCISCO VETERINARY COLLEGE.

The following gentlemen graduated from the college on Dec. 5, 1904: Frederick Segsworth, Colusa, Cal.; L. H. Mathers, San Francisco, Cal.; Norman Neilsen, City of Mexico, Mexico; Hudson Chadwick, Jackson, Miss.; George Gordon, Merced, Cal.; George Waddell, Modesta, Cal.; Ward Outheér, Salinas, Cal.; Robert B. Boyle, Concord, Cal.; George R. Ward, San Francisco, Cal.; Oliver B. Shipman, Hilo, H. I. Five students of the Senior Class failed to qualify.

C. J. HAMLIN, of Village Farm fame, is said to have left an estate valued at \$20,000,000.

WE acknowledge receipt of a reprint of the splendid paper upon "The Clinical Examination of the Blood of the Horse and Its Value to the Veterinarian," by Veranus A. Moore, Clarence M. Haring, and Bert J. Cady, read at the St. Louis meeting of the A. V. M. A.

HAD NO FAITH IN AUTOMOBILES.—An action for damages alleged to have been received in an automobile accident was recently brought in an adjoining county. A woman had been thrown from a carriage, the horse attached to which was frightened by an automobile. She landed in a ditch and was not dangerously injured. Upon being assisted to her feet, it is related, some one spoke of calling a doctor, and suggested a physician who visits his patients in an automobile. The injured woman protested, saying: "No, don't call him. I don't want an automobile doctor. Get me a horse doctor."—(*U. S. Observer.*)

OBITUARY.

WM. B. E. MILLER, D. V. S.

It becomes our sad duty to record, in the columns of the REVIEW, that on the 2d ult. one of New Jersey's best known veterinarians, Dr. Wm. B. E. Miller, of Camden, departed this life at the age of 65 years, at the home of his brother-in-law, Hon. J. V. D. Beekman, Hightstown, N. J. A wife and a daughter survive Dr. Miller. The funeral services were held at Hightstown on the 4th. The Veterinary Medical Association of New Jersey, of which organization Dr. Miller had been an active and influential member ever since its inception in 1884, sent a beautiful floral piece, besides being represented at the last sad rites by a committee of five of his fellow members, consisting of Dr. Albert Brown, of Hightstown; Dr. B. F. King, of Little Silver; Dr. Geo. F. Harker, of Trenton; Dr. John P. Mathews, of Princeton, and Dr. Wm. Herbert Lowe, of Paterson.

Dr. Miller's career has been a notable one in his chosen profession. He was graduated from the American Veterinary College in 1879 and rapidly gained a wide reputation as a practitioner and surgeon. He often traveled hundreds of miles by train and has been known to have journeyed half way across the continent to perform some difficult operation. His success was phenomenal and his reputation as a surgeon soon extended far and wide.

Dr. Miller was among the first who attempted the standing operation for castration, and was celebrated for the castration of the cryptorchid horse.

Dr. Miller served in a number of important positions and was highly honored in various ways by the profession of his State and in the nation.

He was for some time a Trustee of the American Veterinary College; one of the State Veterinary Inspectors of New Jersey for a number of years; one of the first inspectors of the Bureau of Animal Industry, and served said Bureau for many years in



various capacities. Until rheumatism and serious illness overcome him, he was always an earnest and active member of the Veterinary Medical Association of New Jersey, and in its early history was its honored President. More than twenty years ago he was also working for the upbuilding of the United States Veterinary Medical Association, and had the honor of being its President from 1883 to 1885.

He was also a member of the Pennsylvania State V. M. Association, at the recent meeting of which touching resolutions in acknowledgment of his worth were unanimously adopted.

(W. H. L.)

CHARLES K. GRESWELL, M. R. C. V. S.

Dr. Charles K. Greswell, for several terms State veterinary surgeon and one of the best known veterinary surgeons in the United States, died at Mercy Hospital at 8 o'clock yesterday morning, from the effects of an operation for perforation of the duodenum.

Dr. Greswell was on the witness stand two days in the Hindry-Globe smelter case, and it is the opinion of the physicians that the laborious work as witness aggravated the attack that resulted in his death. He suffered his first attack late Wednesday night, in his rooms in the Denver Athletic Club, and was hurriedly taken to the hospital.

Dr. E. P. Hershey, an old friend, was called, and pronounced his case serious. The patient steadily grew worse and, when it was seen that, even though Dr. Greswell was in no condition to withstand an operation, it was his only chance for life, Dr. Leonard Freeman was called into consultation. The operation was performed at 2.30 o'clock Thursday afternoon. Dr. Greswell never rallied. He became weaker and weaker, until at 8 o'clock life had fled.

While being wheeled into the operating room, Dr. Greswell said to William A. Rose, a friend: "Bill, it is a hundred to one shot that I croak."

Mr. Rose attempted to comfort him, but Dr. Greswell was too much of a surgeon not to know that the operation he was about to undergo was an exceptionally delicate one, and that the chances were much against his recovery.

He directed Mr. Rose to "settle things up as soon as possible." And asked that his remains be cremated. This was done at Riverside crematory yesterday afternoon. The ashes will be given to Mr. Rose next Tuesday, who will forward them by

express to Mrs. Greswell, who is in a critical condition in a sanitorium in San Jose, Cal.

Dr. Greswell was born in London, Eng., 47 years ago. He was graduated from the Royal Veterinary College of London, of which institution his father was a professor. He came to Denver 20 years ago and was in active practice from 1885 to 1895. He was first appointed State veterinary surgeon under Gov. Job Cooper, and served in the same capacity under Governors John L. Routt and Waite.

He removed to California three years ago because of the poor health of Mrs. Greswell. He came to Denver a week ago to testify in the Hindry-Globe case at the solicitation of Charles Hughes, Jr., leading counsel for Mr. Hindry.

Mr. Rose has taken charge of Dr. Greswell's effects. He telegraphed to friends of Mrs. Greswell telling of the sad death, but because of her critical condition, the news has been withheld from Mrs. Greswell. Besides Mrs. Greswell, a son, Richard, aged 16 years, and a daughter, Betty, aged 3 years, survive.

By request of Dr. Greswell before his death, the funeral service was from the undertaking parlors of W. P. Horan, and consisted of no ceremony other than the gathering of a few old friends to take a last look at the form cold in death.—(*Denver, Col., Republican, March 17.*)

MRS. H. D. GILL.

Dr. Harry D. Gill, of New York City, has suffered the irreparable loss of his estimable wife, which occurred on March 23, after a painful and lingering illness. She was before her marriage Miss Adelaide Florence Hasty, of Brooklyn, and was a most devoted, congenial and helpful wife, always taking a keen interest in her husband's affairs, and adding no little to his successful career. Dr. Gill has the sympathy of his large circle of professional and other friends in his great bereavement. The funeral took place on Sunday, March 26, in the chapel of the Stephen Merritt Burial Company, Eighth Ave. and Nineteenth St., New York, and the interment was in Greenwood Cemetery.

DR. OLAF SCHWARZKOPF has been on temporary duty at Fort Yellowstone, Wyoming. In a note he says: "The National Park here is grand beyond description. I have seen a good many of the wonders of the world in Europe, Asia and America, but the phenomena of nature here are marvellous."

SOCIETY MEETINGS.

MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.

The eighth annual meeting was held at the Metropolitan Hotel, St. Paul, Minn., January 12-13, 1905.

The meeting was called to order at 2 o'clock P. M. by Dr. L. Hay. Roll-call showed 29 members present.

The minutes of the seventh semi-annual meeting were read, and, after a small correction, approved.

Report of the Treasurer was given, and showed the Association in fine financial condition. The report was accepted by the Finance Committee and Association.

REPORTS OF COMMITTEES.

Dr. Reynolds, as Chairman of Committee on Colleges, recommended that the colleges should elevate the standard of their matriculants and lengthen the term.

Dr. Ward gave the following report of Infectious Diseases, which covers a period from July 1, 1904, to January 1, 1905: "Tuberculosis:—Number tested, 3,342; No. killed, 333. Glanders, No. tested, 267; No. killed, 197. Hog Cholera; during the past six months hog cholera has been reported to exist on but 28 farms."

Committees on Bacteriology, Surgery, and Medicine, gave no reports.

Dr. Ward, Chairman of Committee on Legislation and Empirics, gave a lengthy report as follows:

REPORT OF COMMITTEE ON EMPIRICS AND LEGISLATION.

"As chairman of the Committee on Empirics and Legislation, I have nothing to report in the way of legislation beyond calling your attention to the fact that it has been customary in the last three or four sessions of the Legislature for some member to introduce a bill looking to the creating of a breach whereby unqualified men may crawl through into the ranks of the profession. I would therefore advise that the committee of one be increased to five members and that the chairman of the same, if possible, be a resident of the Twin Cities. The reason for this is obvious. The chairman is in a better position to ascertain immediately through the public press any contemplated legislation, and at any time his attention is called to any bill which has been introduced he will be in a position to in-

vestigate and ascertain its nature. Communication can then be had by him with the different members of the committee, whom I believe it would be advisable to have from different sections of the State, stating the nature of the proposed bill, whether it is derogatory or otherwise to the profession, requesting their support or opposition by direct communication with their representatives. Opposition or assistance coming from different sections of the country, with the same from the Twin Cities, would make an apparent showing of strength. If any measure is introduced reopening or modifying the practice act it will be from the country districts.

"Empirics.—I have nothing to report in the way of prosecution of quacks during the last six months. I recently received a communication from Dr. Eckles, of St. Charles, asking if a certain man was registered. If not, he intended to prosecute him for practicing. The letter was referred to Dr. C. C. Lyford, Secretary of the Examining Board, in order that any communication from him might have more weight in the prosecution.

"Quacks may be divided into three classes : those who deliberately set themselves up as veterinarians ; those who confine themselves directly to dental work and advice as veterinary dentists ; and the castrator. Convictions are only possible in class one. The veterinary dentists as a rule travel from place to place and before we are aware of their doing work in a township they may be miles away, and therefore impossible for anything to be done in the matter. Those in class three are allowed to perform such work under the old act, castrating and dehorning not being counted as scientific work. It is a matter of great difficulty to obtain evidence that a quack is making a living by practicing. We find men answering calls and administering to the wants of animals free of charge. Their action, it seems to me, is governed by advice of some attorney, for they treat an animal free of charge, asking from the owner the price of the medicine used in the case. If the owner pleases they are willing to receive a present of an amount which he may think the services are worth. This method of doing business is one which is hard to combat and an impossibility to get a conviction. It is a curious fact, but nevertheless true, that there are four times the number of empirics in the northern than in the southern section of the State. The only reason I can give for this is that the southern part of the State has more veterinarians with a reputation extending over their entire

counties and oftentimes adjoining ones, for the good work which they perform, making it impossible for a quack to do any business. The people in the southern section have a better class of stock, are older settlers and value the services of a qualified man. In the northern section of the State there are fewer veterinarians, the people are in poorer circumstances, and their stock by no means up to the standard of excellence. Therefore, there is little inducement for a qualified man in such sections. Of course we will understand that there are exceptions. In the counties bordering on North Dakota, in that part known as the Red River Valley, the people are practically independent and the veterinarians are prosperous. I do not consider that the profession has very much to fear regarding any increase in competition by quacks. One prosecution a year given wide publication would work a wholesome fear upon these men. In my opinion our profession is not as badly situated in the way of competition from these men as our sister, the medical profession. The medical profession has a large bugbear in the proprietary remedies which are flooding the market and which are so extensively advertised as to appear before the public eye upon all occasions. It is impossible to pick up a paper without glaring type meeting the eye pronouncing Ward's liniment (outlawed from my family when the cure-all first appeared), Peruna, or some pain paint as an infallible cure for everything under the sun. The advertisements are couched in the most suggestive language, after reading which one fancies that they are the host of every malignant disease that is heir to mankind. The advertisers are, I consider, the worst parasites on the face of the earth. The higher priced ones, like Peruna and some others that could be mentioned, have little virtue except for the alcohol they contain.

"In conclusion, I desire to call the attention of this Association to the fact that this is the sixth year which I have served upon this committee, and I would respectfully suggest to the incoming President that there are gentlemen in the Association more capable and more deserving of recognition than I. It would seem to an outsider that a few of the older members of the Association monopolize every office. This is by no means right. New members deserve recognition and newer blood should be infused into the services of the Association. The services of the older members have been in constant action from the time the Association was first formed, and it is therefore time for such members to retire from active services, allow-

ing the younger ones to take up this work, the experience of the older ones being at their service if required. You will understand that work along one continual line year after year is apt to make one somewhat careless, and for the good of the profession it is advisable to stimulate the younger members."

Dr. J. W. Golden, Redwood Falls; Dr. W. L. Bebee, St. Anthony Park; Dr. M. F. Leffingwell of Austin; Dr. C. E. Cotton, Minneapolis; were elected and admitted as new members.

Under the head of "Unfinished Business" came delinquent members. After some discussion, it was moved by Dr. Lyons, seconded by Dr. J. N. Gould, that all members who are in arrears to the amount of three yearly dues, be suspended. Carried.

It was moved and seconded that the Secretary notify all members who are in arrears to the amount of three yearly dues, that they are suspended. Carried.

Moved by Dr. Reynolds, seconded by Dr. Eckles, that the Treasurer pay to the Treasurer of the Minnesota State Veterinary Examining Board the sum of \$40 to apply to the fund for the prosecution of empirics. Carried.

It was the vote of the meeting that a non-graduate, with a State license to practice, and later becoming a graduate, must pass the State Veterinary Examining Board before his name will appear under the head of "Graduates" in the "Directory of Veterinary Practitioners."

Moved by Dr. Keyes, seconded by Dr. McKinzie, that the federal inspectors of South St. Paul and Austin be made honorary members of this Association, and that the Secretary notify them to that effect. Carried.

The advisability of having a shorthand report of the proceedings of our meeting was the next subject that demanded the attention of the Association. After some discussion, it was moved and seconded that the Secretary be authorized to employ a stenographer to report our next meeting's proceedings, and to pay for such report not to exceed \$20. Carried.

Moved by Dr. Price, seconded by Dr. Lyons, that the Secretary and Local Committee be authorized to purchase a clinical subject for our next meeting, and the price to be nominal. Carried.

Next in order was the election of officers, which resulted as follows:

President—Dr. A. F. Lees, Red Wing.

First Vice-President—Dr. E. L. Kalb, of Rochester.

Second Vice-President—Dr. C. A. Mack, Stillwater.

Secretary and Treasurer—Dr. J. G. Annand, Minneapolis.

Board of Trustees—Dr. J. W. Cook, Dr. H. C. Peters, and Dr. J. N. Gould.

The following committees were appointed by Dr. Lees, President:

Colleges—Dr. M. H. Reynolds, Dr. S. H. Ward, and Dr. J. P. Foster. *Infectious Diseases*—Dr. M. S. Whitcomb. *Finances*—Dr. G. Ed. Leech. *Legislation and Empirics*—Drs. C. C. Tyford, C. T. Eckles, L. Hay, A. Youngberg, J. N. Gould, J. McKay, C. E. Cotton, R. Price, T. Lambrecht, H. C. Peters. *Bacteriology*—Dr. R. Price. *Surgery*—Dr. J. P. Foster. *Medicine*—Dr. J. W. Cook. *Press Reports*—Drs. J. G. Annand, D. McDonald, K. J. McKinzie. *Resolutions*—Drs. H. C. Lyon, O. W. Stanley, G. Ed. Leech.

Meeting adjourned until 7.30 p. m., when the papers and discussions were taken up.

Dr. Ward's paper on "Radial Paralysis" created quite a discussion. Dr. J. N. Gould gave a very interesting report of "A Case of Tetanus, with Treatment."* Dr. J. T. Lambrecht's paper on "Abuse of Repulsion of Teeth"† was read by the Secretary, Dr. Lambrecht being absent. Dr. J. W. Cook's paper on "Examination for Soundness," was not a paper, but a talk. He laid special stress on examination for corns and sidebones and high splints, also the teeth.

Dr. E. L. Kalb gave a very interesting paper on colic. Dr. C. A. Mack gave a report of a case of "Encephaloma of the Eye,"* with treatment. The Board of Directors selected Minneapolis for our next meeting place in July.

THE CLINIC.

Meeting adjourned until 9 a. m. January 13, and assembled at Dr. R. Price's Infirmary, to witness a very interesting clinic.

No. 1.—Bay horse, draft, sick two months, very much emaciated, sweats profusely on exercise, abnormal appetite. Diagnosis, diabetes. Treatment, iodine and iron. Dr. Price has had several of these cases this winter and all have made good recoveries under the iron and iodine treatment.

No. 2.—Dog, sick two or three weeks, very much emaciated; refuses food and drink, no history. Diagnosis, poisoning.

*Published in this number in "Reports of Cases."

†Will be published in a later number of the REVIEW.

No. 3.—Bay mare that fell and on arising was partially paralyzed on left side, and had no control of the voluntary movements; head tilted to one side, unable to back up, later an eruption of the skin on the left side. Diagnosis, clot at base of brain. Treatment, iodide of potash and bi-chloride of mercury for eight weeks. Nearly recovered.

No. 4.—Bay horse that had fallen in the street and when he was got up had lost partial control of his hind parts. At the clinic, he was quite lame in the left hind limb. Hip had been blistered with some beneficial results. When driven would lose control of that limb; quite sensitive along the spine. Diagnosis, concussion of the spine.

No. 5.—Grey horse, became suddenly lame, difficulty in placing carpus. Diagnosis, fracture of the trapezium. Treatment, rest and blister; recovery, a little knee sprung.

No. 6.—Black gelding, operated on by Dr. L. Hay for neuroma of external plantar nerve, following a previous low operation. At the end of eight days Dr. Price reported healing by first intention. Lameness has almost completely disappeared.

No. 7.—Sorrel mare, plantar neurectomy, performed by Dr. Annand for the relief of lameness following removal of lateral cartilage six months previous on account of a quittor. Dr. Price reports later, saying, primary healing, no suppuration, lameness completely gone.

No. 8.—Black gelding, suppuration and fistulous wound discharging above the coronet at the inner quarter of the left front foot; threatened quittor; Dr. Hay, operator. Removed the wall of the quarter affected, making a free opening under the coronary band connecting with the supra-coronary abscess in order to secure drainage; it was then thoroughly curetted. Dr. Price reports, January 23, that the case has done splendidly; the supra-coronary abscess healed rapidly and suppuration from both wounds is only that from the surface of the granulations of repair. The sinuses were healed without suppuration, when the bandages were removed three days later; the lameness eight days later, had completely disappeared at a walking gait.

No. 9.—Female dog, umbilical hernia; Dr. Price, operator; the hernial sac being laid bare by incisions through the skin and abdominal tunic. The sac itself was incised and adhesions looked for, but, none being present, the sac was excised, the peritoneum, abdominal tunic and skin were brought together with wire sutures. Dr. Price reports at the end of eight days the sutures were removed, healing being completed and the hernia

found to be removed. The patient is rapidly gaining in flesh. Previous to the operation she was poor and unthrifty.

No. 10.—Dr. K. J. McKinzie passed the Miller stomach tube successfully and washed out the stomach of the horse.

J. G. ANNAND, *Secretary.*

MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

The 23d annual meeting of this Association convened in Parlor "A," Downey House, Lansing, Feb. 7, at 1.30 p. m., Dr. H. M. Gohn, President, in the chair.

Roll-call showed the following members present : Drs. S. Brenton, J. Black, G. H. Carter, James Drury, William Jopling, Geo. C. Moody, J. C. Whitney, H. S. Smith, Robertson Muir, Hal L. Bellinger, J. S. Donald, F. M. Blachford, C. L. Jones, T. G. Duff, H. M. Gohn, James Harrison, J. J. Joy, R. W. McDonald, W. H. Erwin, D. G. Sutherland, C. A. Waldron, Thomas Palmer, W. S. Hamilton, C. C. Slight, S. M. Mizer, J. B. Stevens (27). Honorary members present : Drs. Jos. Hawkins, and W. A. Giffin (2). Visitors present : Drs. Fred. F. Consaul, Mt. Pleasant ; A. B. Sexmith, South Lyons ; C. C. Dauber, Sturgis ; C. C. Mix, Coldwater ; William M. Morris, Cass City ; Prof. D. King Smith, O. V. C., Toronto (6).

The President delivered his address, which was attentively listened to. The following is the full text of

PRESIDENT GOHN'S ADDRESS.

"It is not my purpose at the present time to inflict upon you any lengthy address. I have appreciated the honor you conferred upon me a year ago by electing me to fill this office for a second time.

"I hope the Legislative Committee will not think I have attempted to interfere with their duties, but I feel that this is a proper time for me to make a statement to the membership of this Association with regard to the success of our past legislation and our needs for future.

"Six years ago we succeeded in placing on the statute books a law governing the use of the title 'Veterinary Surgeon,' 'Veterinarian,' etc. This law was solely to prevent the use of such titles by any person who either did not hold a diploma from a regular veterinary college having a course of two sessions of six months each or did not pass an examination before

the State Board. This law has not been enforced as it should be.

" Inasmuch as this Association was the author of the existing law, it seems that it should have long ago taken steps to provide for its enforcement. A committee on prosecutions should be appointed or some officer of the Association should be empowered to draw on the treasury to pay expenses of prosecution and authorize some agent to act. The law has been effective in preventing the use of the title by many non-graduates, but many complaints yet reach me of violations of the law by such. The Board has never considered it a part of their duties to prosecute offenders, but have held that this was the duty of local officials on complaint being made to them. On this point I would like to read a circular letter issued to the profession in New Jersey by the State Board [see AM. VET. REVIEW, September, 1904, page 618].

" When I received my appointment to the State Board, Aug. 10, 1902, some applications of graduates of the Grand Rapids Veterinary College were being held up subject to inquiry. An examination into the methods of this institution having been asked for, Hon. Delos Fall appointed a Visiting Committee, as provided for by law, to conduct a thorough investigation of its courses of study, corps of instructors and everything that would throw any light on its standing as compared with other institutions. This was done and the report is on file in the Department of Public Instruction.

" The State Board called on Attorney-General Blair for an opinion as to whether or not they had discretionary power to determine whether this institution was entitled to be classed as regular. He said we had. The Board basing its action on the report spoken of, and the Attorney-General's opinion, decided to refuse to register graduates of the Grand Rapids Veterinary College.

" During last summer a complaint was made against one of their graduates for illegal advertising, whereupon mandamus proceedings were commenced to compel us to register him and to admit Grand Rapids graduates to register without examination. Our attorney contended that we had discretionary power, but the Supreme Court ruled to the contrary. (Extract from ruling of Supreme Court read at this point.)

" This is a point in the present law that should be amended to give the Board this discretionary power and the opinion of the Supreme Court makes it quite plain just what change is needed to do this.

"This is only one of many cases of institutions which the Board has had to pass on.

"Our experiences with attempts at legislation in the past have convinced me that legislators will neither ignore the rights of such non-graduates nor the wishes of their constituents who cannot secure the services of a registered veterinarian, and I am informed that there are many sections in this State where such a condition exists.

"I realize that my views may not meet with the approval of all, but I have been in a position to give the matter considerable thought, and deem it a duty to express my conclusions here.

"It has been suggested at one or two previous meetings that a press committee be appointed by this Association. Reporters generally visit us during our meetings and the advantage of such a committee must be evident. Reporters would receive from the committee authentic information instead of having to inquire of individual members and perhaps missing entirely the most important matters before us. The published reports of our proceedings would be made to convey a more correct idea of the objects and methods of our Association.

"I have here an 'ad' of a Veterinary Correspondence School : 'Veterinary Course at Home. \$1,200 year and upwards can be made taking our Veterinary Course at home during spare time ; taught in simplest English ; Diploma granted, positions obtained for successful students ; cost within reach of all ; satisfaction guaranteed ; particulars free. Ontario Veterinary Correspondence School, Dept. 9, London, Canada.'

"We have had several applications for registration on their diplomas.

"Many interesting things relating to the institutions granting veterinary degrees in America may be found by reading Dr. Lyford's 'Report on Colleges and Education,' published in the AMERICAN VETERINARY REVIEW of October, 1903; report of the Committee on Intelligence and Education of the A. V. M. A., 1904, detailing the results of investigations of 20 institutions, to all of which a circular letter was addressed to secure information as to their courses. One significant feature of this was that many, probably for reasons satisfactory to themselves, had no information to give. Dr. Lianard, in a paper on 'Needed Reforms in Veterinary Education,' discusses very thoroughly the standing of different colleges. I have mentioned these things to show that there is a general awakening to the need of more uniformity in veterinary colleges, as well as rea-

son to scrutinize closely the advertised and actual courses of such institutions and to give an idea of trials of veterinary boards without having added to them that of prosecuting committee.

"It might not be out of place at this time to state that the able report of Dr. Jopling, as Chairman of the Committee of Intelligence and Education, a year ago, while calling forth criticism from some interested parties whom he scored, has been commended by the Committee on Intelligence and Education of the A. V. M. A. in their report to that body.

"Further changes in the present law for registration that I believe would prove to be for the good of the profession are:

"1. An applicant for registration must be a graduate of a school with a three-year course.

"2. Men, not graduates, who have been practising say 10 years, should be exempted from the penalty for practising, but I would not want this exemption to go so far as to give them the right to use the title V. S., which should belong only to college graduates or those passing an examination before the State Board.

"The first change suggested may sound strange—coming from a graduate of a two-year school and being addressed to many other such graduates, but all will agree with me that the last few years have broadened the scope of veterinary work, particularly since the proper position of the veterinarian as a sanitarian is recognized. The study of bacteriology and its proper application to sanitary work calls for more laboratory work than is possible to get in a two-year course. All graduates of two-year institutions holding front rank in the profession have done so by persistent and hard study since graduation. Michigan should not be the last to demand higher qualifications, since, with advanced legislation in other States, ours will become the mecca for those crowded out of others. I can assure you the Board has already seen signs of such a pilgrimage. When we go to the legislators let us not handicap ourselves by trying to legislate out of business many men who perhaps have for years been the only ones in their respective communities who could be reached when assistance was needed. If such a clause had been incorporated into a bill ten years ago it might have passed, and we would not now have so large a class to exempt, and the position of the registered veterinarian would have gained much from it. I believe our Legislative Committee will take some steps along these lines, and I appeal to the members to aid them in every way possible.

"Many of you have no doubt noticed how much time in all is occupied at our different sessions in calling the roll of membership. It would not only save time, but would aid our Secretary if we should adopt a system of registering by card or in a book provided for that purpose. Such a system is in use in the A. V. M. A.

"While the papers read at our meetings are of great value, we frequently obtain the most benefit from the practical discussions. Our Secretary has made a start in the right direction in arranging for short talks on practical topics, to be followed by discussions. Might we not do well to also set aside a portion of our time for members to bring before us matters of interest which would not properly come under the head of any set paper or practical talk?"

Minutes of the meetings of Feb. 2 and 3, 1904, were read and approved, after correction.

Applications accompanied by the required fees were received from the following gentlemen : Wm. Coxe, Mayville (O. V. C., 1888), vouchers, T. G. Duff, J. Black. Fred F. Consaul, Mt. Pleasant (O. V. C., 1904), vouchers, W. E. Adams, J. J. Walkington. A. B. Sexmith, South Lyons (O. V. C., 1904), vouchers, S. Brenton, W. L. Brenton. C. C. Dauber, Strugis, (O. V. C. 1904), vouchers, P. Radebaugh, M. D., S. Brenton. C. C. Mix, Coldwater, (O. V. C. 1904), vouchers, W. L. Brenton, S. Brenton. Wm. M. Morris, Cass City, (O. V. C. 1895), vouchers, D. G. Sutherland, J. Black.

The applications were referred to the Executive Committee, who immediately had a session. The Secretary reported for the Committee, who recommended the admission of all of the above named applicants. It was moved and supported that the rules be suspended and the Secretary cast the vote of the Association in favor of the applicants. The Secretary then cast the ballot as ordered, and the President announced that Drs. Coxe, Consaul, Sexmith, Dauber, Mix and Morris were now members of the M. S. V. M. A.

Correspondence was read from absent members, and from others upon business matters. Upon motion they were received and filed.

Dr. F. C. Wells, Chairman of Legislative Committee, being absent, the members of the Committee present requested more time in which to make a report. Request granted.

Moved and supported that the Chair appoint a Press Committee whose duties shall be to censor newspaper reports of this

meeting. Carried. The President appointed Drs. Giffin, Jopling and Whitney, as such committee.

Dr. Jopling, Chairman of Committee on Intelligence and Education, said that there was not much to add to his report of last year.

Dr. H. F. Palmer, Chairman, being absent in the Western States for P., D. & Co., the Committee on Diseases made no report.

Dr. S. Brenton, Chairman of the Finance Committee, reporting upon the Secretary-Treasurer's annual report said that the books of that officer were found to be correct and showed a balance on hand of \$36.83.

Moved and supported that the Finance Committee's report be accepted and that orders be drawn on the Treasurer for the amounts due. Carried.

Drs. Joy, Dunphy, Sutherland and Black reported for the Legislative Committee and recommended that the question of the insertion of a time clause be left to the Chairman of the Committee. Also that instead of our whole committee appearing before the Committee on State Affairs, that the Chairman be authorized to appear and spend what time he deemed necessary among the members of the Legislature, and that he be paid for his time and expenses. Also that the bill providing for the appointment of a State Veterinarian (House Bill No. 154) had been introduced by Rep. Morrice and urged the membership to put forth every effort with their Representatives to have this bill become a law.

Discussing the Committee's report Dr. J. B. Stevens gave an excellent talk upon the advisability of doing our utmost to have the latter bill passed. Others advised the same bill be pushed, and some others thought our practice bill should have the precedence, but the major portion of the membership thought the most important measure before the Legislature was the Bill affecting the Sanitary Commission (House Bill No. 154).

Evening Session.—Dr. G. W. Dunphy's subject "The Benefit of Changing the Constituents of the Blood in Certain Diseases by Intravenous Injections," created much interest. He said among other things that an animal in a state of complete collapse from haemorrhage received an intravenous injection of a saline solution and in the course of 20 minutes was lying upon its sternum, and in a little while afterwards was on its feet. In certain diseases, ptomaines that were found in the blood be-

fore treatment, were nearly absent after the taking of about six quarts of blood, and injection of a gallon of saline solution. In diseases such as purpura, influenza, and diseases where alterations of the blood are known to occur, bleed, and then inject saline solution. He predicted that this would become a very beneficial addition to our veterinary therapeutics. On account of shortage of material experiments are not yet fully developed.

Dr. Jopling: I would like to ask the Doctor how he injects the solution?

Dr. Dunphy: At P., D. & Co's. we have special appliances for injections, but a simple method that can be used and which is always at hand is an ordinary canula which can be inserted in the jugular and can be connected by a rubber tube 12 to 18 inches long with a glass funnel into which the solution can be carefully poured. We use a teaspoonful of salt to a gallon of sterilized water.

Dr. Whitney: What has been your success in treating purpura with this treatment?

Dr. Dunphy: I have only treated two cases in this way, one of which was considered hopeless, and proved to be so. The other made the quickest and perhaps most satisfactory recovery I ever saw.

Dr. Black: You would consider this the treatment in cases of collapse from accidental or other haemorrhage?

Dr. Dunphy: I consider it a sheet anchor in those cases.

Dr. Nobles reported excellent results in the treatment of parturient paresis with the saline injection.

Dr. Ward: I would like to ask Dr. Dunphy if he would advise the injections in tetanus?

Dr. Dunphy: I think it would be a good thing in addition to the antitetanic serum.

Dr. Waldron reported a rapid cure from tetanus by antitetanic serum.

Dr. Nobles reported a cure by hypodermatic injection of carbolic acid solution.

Dr. Armour a cure in a cow by the same method.

Dr. Gohn also reported a cure, one-drachm doses of a 50 per cent. solution (carbolic acid).

Dr. Dunphy said that some individuals can stand much stronger doses of the antitetanic serum than others, owing to a stronger resistance. He stated that it was much cheaper than formerly.

Dr. Bellinger reported two fatal cases of tetanus, one treated

with a 50 per cent. solution of carbolic acid and glycerine and water and the other with the serum.

Dr. Gohn: Gentlemen, you have wandered from the subject, but your discussion has been very instructive.

Dr. Giffin moved and Dr. Harrison supported that we as an Association condemn the antagonistic attitude of the Live Stock Sanitary Commission towards the farmers and owners of stock. Carried after a spirited discussion.

Moved and supported that a Committee on Resolutions be appointed. Carried.

Prof. Marshall, of the M. A. C., delivered his paper at this time upon the "Hygienic Side of Breeding," which was well received and much appreciated.

Moved and supported that Prof. Marshall be extended a vote of thanks for his able paper. Carried.

Dr. McDonald then read his paper on "Peculiar Diseases of Sheep." Drs. Dunphy, Gohn and Waldron discussed the feeding problem which was brought out in the paper. Dr. Mix reported cases similar to McDonald's which were attributed to feeding.

Dr. Giffin's paper on "Veterinary Dentistry" came next. The Doctor, who is now practicing human dentistry, was perfectly familiar with his subject.

Prof. D. King Smith extended greetings from the Ontario Veterinary Association and the O. V. C. In the course of his talk he said that the college was endeavoring to get Government protection for extending its term to three years, as they were unable to do under the present conditions, as it would practically put them out of business, and would give opportunities to start two-year schools that would not be reputable.

Moved and supported that the President appoint a committee to confer with Gov. Warner relative to the appointment of a State Veterinarian to succeed Dr. Wells, who has resigned his position. Carried. Drs. S. Brenton, Smith and Morris were named.

WEDNESDAY, FEB. 8TH, 1905—9:30 A. M.

Roll-call showed the following present, in addition to those present on the 7th inst.: Drs. C. C. Petty, H. M. Armour, W. L. Brenton, Wm. J. Rook, J. E. Ward, D. Cummings, H. Wynn Nobles, Geo. D. Gibson, John Russel, G. W. Dunphy, A. McKercher. Honorary member: Prof. Marshall.

Dr. Giffin spoke of the deficiency in the State law regarding

the docking of horses. The question was referred to the Committee on Resolutions, who reported as follows :

" WHEREAS, The present law in force in the State of Michigan in relation to the docking of horses is very stringent, therefore, be it

" *Resolved*, That this Association in regular session assembled do hereby request the Legislature to so amend said law so as to allow the docking of horses in cases deemed necessary by a qualified veterinarian on account of accidents, disease or vicious habits."

Moved and supported that the above resolution be adopted. Carried.

Dr. Hawkins spoke of the indiscriminate indorsing of patent nostrums by members of the veterinary profession. The condition was deplored, but no further action was taken.

J. C. Whitney's talk upon " Some of Those Cases of Alleged Malpractice that Come Occasionally to Every Medical Practitioner," brought out a very good discussion. He recommended that every veterinarian keep a record of cases as protection against malpractice suits. Mistakes were often made by hasty diagnosis and carelessness. The censure usually comes from outsiders, but it is not always the case.

Dr. D. King Smith said that veterinarians should when they see a mistake being made or that has been made, to try and protect their fellow practitioner instead of stabbing him, as is very often done.

Dr. Muir spoke of a fracture as the result of casting.

Dr. Harrison spoke of a case of laceration of the tongue resulting from the use of a gag in a case of choke, which was the cause of much annoyance and worry.

Drs. Hawkins, Armour, Stevens and others participated in this discussion.

Dr. D. King Smith spoke of a society organized among the medical men of Ontario, for the protection of each in cases of alleged malpractice.

Representative Morrice, who introduced and is pushing our sanitary bill, was a welcome guest. He spoke of the chances of our bill and of the character of the House, and said that he saw no reason, at this time, why it should not pass the House.

Mrs. Austin, widow of a member of our Association, was requested to send her deceased husband's instruments to our meeting for disposal. She did so, and Dr. Joy auctioned them off to a good advantage and procured for them a sum really

more than was anticipated, which was turned over to the Secretary to send to Mrs. Austin.

Drs. S. Brenton and H. S. Smith, two of the committee who were requested to call on the Governor, reported that Gov. Warner wished the Association to send him three names from which he would select a State Veterinarian. Moved and supported that the report of the committee be accepted. Carried.

Dr. Hawkins was selected for first choice, Dr. Duff for second, Dr. Waldron for third.

Moved and supported that Dr. Wells's fees as representative of this Association in behalf of our bills at the Legislature be paid from the general fund. Carried. Moved and supported that a special assessment of \$2.00 upon each member be levied to reimburse the general fund from which our legislative expenses are to be paid. Carried.

Moved and supported that the election of officers be proceeded with. Carried. Drs. Joy and Harrison were appointed tellers. Dr. H. S. Smith, of Albion, was nominated for the office of President.

As there were no further nominations it was moved and supported that the rules be suspended and that the Secretary cast the ballot of the Association for Dr. H. S. Smith for President. The Secretary cast the ballot as directed and the President declared Dr. Smith elected.

Drs. James Harrison and J. B. Stevens were nominated for First Vice-President. The tellers passed the ballot with the result that Dr. Harrison received 18 votes, Dr. Stevens 13. The President declared Dr. Harrison elected.

Dr. J. B. Stevens being the only nominee for the office of Second Vice-President, the Secretary was ordered to cast the ballot for him. This was done. The President then declared Dr. Stevens elected.

Dr. T. G. Duff being the only nominee for the office of Third Vice-President, the Secretary was ordered to cast the ballot for him. The President declared Dr. Duff elected.

The same procedure was followed and Dr. J. Black was elected Secretary-Treasurer.

Dr. W. S. Hamilton gave a very instructive talk on the subject of "How to Treat a Prolonged Case of Colic," which was followed by an interesting discussion, especially upon the relative merits of barium chloride and eserin, the former being very highly spoken of by Drs. Stevens and Carter. Dr. Stevens had P., D. & Co. put up the barium in tablet form, which he said

was much more soluble than the crystals and more pleasant to handle. The Doctor will send a number of these tablets to any one who may desire it, as he had forgotten the number when at the meeting.

On account of a lack of time, Dr. S. Brenton's and Dr. H. S. Smith's papers had to be dispensed with.

President H. S. Smith, after a neat little speech, thanking the Association for the honor they conferred upon him, announced the following committees:

Intelligence and Education—Drs. Wm. Jopling, S. M. Mizer,
Thos. Farmer.

Diseases—Drs. Geo. W. Dunphy, W. S. Hamilton, Prof. Chas. E. Marshall.

Finance—Drs. H. Wynn Nobles, Fred F. Consaul, C. C. Petty.

Legislation—Drs. F. C. Wells, H. M. Gohn, J. Black.

Adjournment. J. BLACK, *Secretary.*

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

(Abstracted from the Western Veterinarian.)

The annual meeting was held on Wednesday, December 14, 1904, in San Francisco, and was called to order by the President, Dr. Chas. H. Blemer. Roll-call showed the following members present: Drs. Spencer, Sr., Browning, Blemer, Spencer, Jr., Keane, Fox, Faulkner, Creely, Williams, Haring, Quinlan, McMurray, Ward, Somers, Hoffman, Brady, McLain, McCarthy, Defoe, Jackson, Eddy, Danielsen, Welsh, Archibald, Shaw, Hogarty, Kracker, Egan, Donnelly, Locke, Boomer, Steers, Sorenson, Sullivan, Galvin, Boyle, Carroll and Fisher. Honorary members: Mr. Fred J. Sinclair and I. B. Dalziel. Visitors: Drs. Glassen, Nielsen, Gordon, Halton and Gresswell.

The minutes of the previous meeting were read and approved.

Reports from the Secretary and Treasurer showed the Association to be in a very prosperous condition, not only as regards its membership, but also financially.

The Board of Examiners reported favorably on the applications of Drs. Robert B. Boyle, E. M. Haring, and J. C. Quinlan. After considerable discussion regarding the report of the Board, it was finally adopted as read, and the above-named gentlemen were elected to membership.

The Chairman of the Committee on Judiciary, after a few

preliminary remarks, read the following financial statement and suggestions :

"*Mr. President and Members of the California State Veterinary Medical Association:* Your Committee on Judiciary beg leave to report as follows : The financial statement attached shows that \$530 was subscribed, of which sum \$410 was collected ; \$324.05 was expended for various purposes, leaving a balance of \$85.95 in the hands of the committee.

" We presume it is unnecessary to go over, in detail, the work accomplished by the committee, as the minutes of your meetings for the past year and the pages of the *Western Veterinarian* will show what has been done.

" As this may be the final report of the present committee, we deem it timely to make a few suggestions.

" We would suggest that the members of the profession, more particularly of this Association, show less apathy in matters pertaining to the prosecution of illegal practitioners. We would also suggest that in taking an interest in such matters it is much better to ventilate their ideas in open meeting than it is to hold secret conclaves, where innuendoes, insinuations, and serious accusations are freely indulged in regarding the action or lack of action on the part of your committee.

" Your committee has at all times invited open criticism and suggestions on the part of the members of the Association, but we suggest that the interests of the Association and the veterinary profession at large are not subserved by secret caucusing and attendant vilification on the part of a few members (active and honorary), against the members of your judiciary committee, whose work has been arduous, disagreeable and at the same time of a very thankless nature.

" Your committee realizes with some satisfaction that adverse criticism is only indulged in by a few members of the Association and others not members, but claiming to have the interests of the profession at heart, who have never been identified with any movement for the benefit or the betterment of the profession and their fellow-members, but rather individuals who may at all times be depended upon to go around in a secret, sneaking, and underhand way, endeavoring to besmirch the character of those who have and are always laboring for the elevation and advancement of the veterinary profession.

" The committee do not wish it understood that it is depressed or discouraged by these adverse criticisms, but only desire to make passing mention of the same in order to give you some

idea of the obstacles it has had to contend with in the performance of its duties. Such handicaps must be and always have been a prominent feature of any work or movement in behalf of the profession, and usually arises in the jealous imaginations of some individuals who are neither a credit to themselves, the veterinary profession, nor the communities in which they are located.

"The committee has one apology to offer, and that is the lack of results obtained; but when you gentlemen take into consideration the fact that all the members of your committee are busy and successful practitioners, and the further fact that the law regulating any profession is difficult to enforce, it can be readily understood by those whose minds are not prejudiced by malice and emulation that the results obtained have been, under the circumstances, generous indeed.

"In conclusion, as chairman of your Committee on Judiciary, I wish to thank the members of the profession who have given us their financial and moral support, and to especially express my appreciation of the noble assistance afforded me by each and every member of the committee. I further wish to state that while I have served in the past on many committees for this Association, I have never yet had the honor of serving on a committee in which individual members have worked more harmoniously, in spite of some of the unpleasant features already referred to.

"Trusting that our efforts on your behalf have met with the approval and endorsement of the decent element of the profession in this State, I have the honor to be, Yours most respectfully,

R. A. ARCHIBALD,

"Chairman of Committee on Judiciary."

After some discussion, in which one or two members endeavored to deal in personalities, the report of the Committee on Judiciary was adopted.

The following applications for membership were read and referred to the Board of Examiners for investigation: Dr. G. F. Gordan, graduate of the San Francisco Veterinary College, and Dr. S. Glasson, graduate of the American Veterinary College.

Dr. H. A. Spencer took the floor, and stated that as the election of officers for the ensuing year was the next order of business, he thought that those who were in arrears for dues should not be permitted to vote; consequently he would move that a recess be taken to allow those who were in arrears to

place themselves in good standing with the Secretary. The motion was duly seconded and carried, and resulted in the addition of about fifty dollars to the treasury.

Following the recess, the President declared election of officers in order, and resulted as follows:

President—Dr. R. A. Archibald.

Vice-President—Dr. Faulkner.

Secretary—Dr. P. H. Browning.

Treasurer—Dr. W. F. Egan.

Board of Examiners—Drs. H. A. Spencer, Sr., D. F. Fox, and E. J. Creely.

Upon taking the chair, Dr. Archibald made a few remarks, in which he thanked the members for the honor done him. He stated that as the hour was getting late, he would put off making any address until the next meeting.

The President called upon Dr. Carroll, who responded by reading a very interesting and instructive essay upon "Mallein as a Curative Agent in the Treatment of Glanders." The hour being too late to permit the subject being discussed, the President appointed Drs. Keane, Welsh and Defoe to discuss the subject matter at the next meeting.

Drs. Keane, Boomer and Shaw being the only other members present who were down on the programme for papers, were called upon in turn, but excused themselves on the plea that press of business matters, etc., prevented them preparing anything for the meeting.

Dr. H. A. Spencer, as usual, had something good up his sleeve, which he sprung under the head of "What Queer Things We See When We Haven't Got a Gun," and which contained several suggestions which might be seriously considered by some of the members with considerable advantage to themselves and their fellow-members. The discussion of Dr. Spencer's paper was also postponed until the next meeting.

The President brought up the subject matter of a meeting place and the most favorable time for holding meetings. He stated that the matter should be decided by the Association as a body and should not be left to one or two officers who could hardly be expected to make arrangements that would be satisfactory to all who attended the meetings. After considerable discussion, in which Drs. Gresswell, Carroll, Danielsen, Fox, and others joined, it was finally moved that hereafter the meetings be called for 2 p. m. at such quarters as could be suitably obtained by the President and Secretary.

Charges of unprofessional conduct were preferred against Dr. Ward B. Rowland by Dr. Charles H. Blemer. They were referred by the President to the Board of Directors for investigation.

The President appointed the following as essayists for the next meeting : Drs. Shaw, Dawdy, Boomer and Danielsen.

There being no further business, the meeting adjourned to meet in San Francisco on Wednesday, March 8, 1905, at 2 P. M.

* * *

The regular quarterly meeting was held in San Francisco, March 8th, 1905, in Room 1000, Palace Hotel, with the following members present: Drs. Haring, Hoffman, Shaw, Boyle, Dawdy, Spencer, Sr., Hogarty, Creely, Blemer, Archibald, Fox, Keane, Somers, Sinclair, Faulkner, Quinlan, Jackson, Fisher, Williams, and Browning.

The meeting was called to order by President Archibald, and the minutes of the previous meeting were read and approved.

The Board of Examiners reported favorably on the applications of Drs. Glasson and Gordon.

Dr. Archibald, as Chairman of the Judiciary Committee, gave a report of the work, which was very creditably accepted, and a special vote of thanks was tendered Drs. Fox and Keane, of Sacramento, for their efforts in defeating the "Drew Bill" and successfully carrying the "County Bill."

Drs. Segsworth, Brady, Mathers and Outhier made application for membership in the Association.

At the last meeting Dr. T. A. Carroll read a paper on "Mallein as a Curative Agent," and for lack of time discussion was deferred to next meeting, and as Dr. Carroll was absent Dr. Keane was appointed to defend the essay, which he did in a very able manner, and after a very interesting discussion it was the opinion of every member present that there is "nothing to it."

Dr. C. A. Dawdy next read a thoroughly practical and very instructive paper on "Verminous Bronchitis," as he found it in practice, and an interesting discussion followed.

Dr. J. W. Shaw, after ten years' practice in Honolulu, but now of San Francisco, read a most interesting paper entitled "Comparative Conditions of Veterinary Practice in Hawaiian Islands," which was well received by the members present.

Dr. L. A. Danielson, who was next on the programme, was conspicuous by his absence, but sent a carefully prepared paper on "Tuberculin," which was read by the Secretary, and this

being a subject of most vital importance and one that every veterinarian is more or less (less) familiar with, brought forth a long and heated discussion, but no blows were struck except from the mouth.

The following essayists were appointed for the next meeting, which will be held June 14th, 1905: Drs. Haring, Hogarty, Welsh and Faulkner.

After transacting some routine business, the meeting adjourned.

P. H. BROWNING, *Secretary*.

IOWA-NEBRASKA VETERINARY MEDICAL ASSOCIATION.

The meeting was called to order by the Chairman, H. E. Talbot, on October 4, at 4 P. M., in the Board of Education Rooms, City Hall, Omaha, Nebr., with a large attendance of members.

After the reading of the minutes the President favored the Association with the annual address, which was listened to with great interest, and was as follows :

PRESIDENT'S ADDRESS.

"Gentlemen and Fellow-Practitioners:

"Upon this, the occasion of the sixth annual meeting of the Iowa-Nebraska Veterinary Association, I wish to welcome you as you gather again to our council halls and to commend in you that spirit of advancement which brings you together year after year for your own betterment and for the good of the dumb beast which suffereth, but complaineth not.

"Each year seems but to strengthen your determination to seek for those qualities which ennable and which lift the existence of the veterinarian above the level which his kind has so long occupied. In this tendency I see the light of the future salvation which awaits our noble profession, the guiding star which shall lead us out of darkness into light.

"In this section of the country, at least, the time has long since passed when a man could give a horse a dose of colic medicine and pose as a first-class practitioner. Advancement in the line of medical and scientific research has carried with it added requirements, and the man who to-day ministers to the welfare of the dumb brute is usually a man who has spent years in the study of his needs and whose earnest desire is to relieve the suffering and better the condition of the animals which are placed under his care.

"In ages past society was prone to regard the man who ad-

ministered to its beasts as nothing better than a menial, a man fit only for the association of servants, and the fact that it was a vocation so regarded doubtless kept many of the best minds from embarking in its study.

"To-day, however, the scene has changed and in the near future I can see the skilled veterinarian a man of consequence in his community, whose opinion is eagerly sought and heeded and whose abilities will be appreciated at their true worth.

"For this change we have first to thank the veterinarian who has realized the added requirements which better breeding and the increased value of stock have imposed upon him and who has risen to the occasion and fitted himself to meet these requirements.

"In the second place we must thank the great leaders of our profession, men whose lives have been one never-ending campaign of education for the masses, an education which is teaching them the need of better conditions and is impressing upon them the fact that the skilled veterinary practitioner of to-day no more resembles the common 'hoss-doctor' of yesterday than the Kentucky thoroughbred resembles a broken-down cart horse.

"I wish, however, to call your attention to a phase of the veterinarian's practice which is seldom referred to, but which, in my opinion, overshadows all others. First, a veterinarian should be a man, and, second, a good fellow. Too much emphasis cannot be given this latter admonition if you would be a success and a power in your community. The community wants its servant to be a man, and in addition to that he must thoroughly understand his business, but here let me say that in my opinion the man who the most thoroughly understands his business is the man who treats the owner as well as the patient. To use a slang phrase, often heard, 'Be a Mixer!' Make it your business to be agreeable, always remembering that if the stock-owner likes you the chances are ten to one that he will like your treatment. Remember that a mixture of manliness, good humor and common-sense is often more efficient than your most valued prescription.

"With reference to veterinary legislation, I would urge upon you the necessity of being, to a limited extent at least, a politician. Form the acquaintance, and, if possible, cultivate the friendship of men high in the public service, as it is only through them that we can hope for the legislation which all thoughtful, progressive veterinarians realize is necessary to the welfare of

our profession. Make yourself valuable to your senator or representative and thus have a claim upon his consideration, should the future make it necessary for you to try to enforce the claim.

"I wish, upon behalf of the Association, to thank all those who have given us their aid in making these meetings a success, but above all I would thank our eminent Secretary, Dr. A. T. Peters, whose splendid efforts have resulted in the material growth of our Association and in greatly strengthening and extending its field of usefulness.

"And, now, in conclusion, let me urge you to foster that spirit of friendship and mutual helpfulness which is of itself so great an essential to a solution of our difficulties. Bury the bickerings and prejudices which have characterized the work of our profession in years past and let the progress which has been made be but the dawn of a better day for the profession, a profession than which there is none more noble or more deserving of the success which the future surely holds in store for it."

Next came the unfinished business and the

SECRETARY'S REPORT.

The Secretary made a very brief report, emphasizing the fact that it was a very laborious task for the Secretary to keep an organization together, that so many practitioners did not answer the correspondence which was voluminous, and that very few attended the meetings. The Secretary therefore suggested that possibly a news bulletin, giving news items concerning practitioners in the West, may stir up interest among the members. He also mentioned that the use of the University Library should be thought of by the practitioners. It was discussed as to whether plans could not be devised whereby books could be loaned to the practitioners of the State. The Secretary offered to have a list printed of the books available at the University Library and consummate some plan whereby they could be loaned to the members. The discussion that followed was unanimously favorable to try to inaugurate a bulletin for the Iowa-Nebraska Veterinary Medical Association. Most every member present took part in the discussion. Finally a committee was appointed by the Chairman, consisting of Drs. V. Schaefer, S. H. Kingery, and A. T. Peters, to have full power to act in the matter of publishing a bulletin. The meeting then adjourned for lunch.

The first paper for the evening was that of Dr. Bostrom on the cornstalk disease. The Doctor read a very interesting paper on this mysterious disease. Most every one took part in

the discussion. Following this paper was an old time experience meeting conducted by Dr. H. L. Ramacciotti. Drs. Kingery, Stewart, Haxby, and Parslow took part.

The following morning Dr. J. H. Gain gave a demonstration in judging horses at the Union Stock Yards Pavilion. This was very much appreciated by all who were present. After the judging was over the Doctor requested those present to guess on the weight of the three animals present. It was a surprise to all those who participated in this guessing contest to know how very far they were off from this weight. The one who carried off the prize was Dr. Dan Miller. They were also very much surprised that they had not estimated the value of these animals anywhere near correct.

Following this demonstration the meeting was again called to order by the Chairman, and the first order of business was the election of officers. Dr. Geo. P. Tucker was placed in nomination for President and was elected by acclamation. Likewise were the rules suspended for C. E. Stewart for Vice-President. Dr. Peters, who protested against being re-elected for Secretary, but which was of no avail, was again elected.

Dr. Stewart brought up the question regarding mycotic stomatitis of cattle, which was discussed freely by all those present. It was suggested that those who have trouble of this kind should read Circular No. 51 of the Bureau of Animal Industry, which describes this disease very minutely and gives a number of causes that may produce this disease.

At 4 o'clock in the afternoon the meeting was again called to order and Dr. R. C. Moore, of the Kansas City Veterinary College, gave a very interesting paper on the indications for the different neurectomies, which was highly appreciated.

Following this Dr. A. T. Peters read a paper entitled "A Study of Clinical Lameness," which he translated from the German. He also reported an article by Dr. A. Zehl on "Adrenalin," in the *Berliner Thierärztliche Wochenschrift*. The Doctor stated that he had used adrenalin with good success in cows affected with bloody urine, and he thinks it is a specific for this trouble. He has also used it for lumbago in horses, and on this account it was suggested that it could be used for azoturia. The Doctor uses a 1-10,000 solution and gives subcutaneous injections, giving from 15 to 25 c.c. three times daily to horses, and from 20 to 30 c.c. to cows. From the very gratifying results reported this drug should be given more extensive trials.

After a liberal discussion on both of these papers the Asso-

ciation adjourned to meet again during the week of the horse show if rates can be secured.

A. T. PETERS, *Secretary.*

CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

The annual meeting was held at Drs. Colton and Lyman's Hospital, Hartford, Feb. 7. From 10 A. M. to 12 M. the veterinarians were shown through the various wards of the new hospital. Several cases of sickness and lameness were exhibited. Dr. Whitney performed an operation on fistula of the shoulder.

At 1 o'clock P. M. the members adjourned to Hotel Hartford for dinner.

At 2.15 the meeting was called to order, in the hospital, with Dr. H. E. Bates in the chair. The following responded to roll-call: Drs. E. C. Ross, Thos. Bland, J. H. Gardner, H. Whitney, H. E. Bates, R. D. Martin, J. E. Underhill, L. B. Judson, G. V. Towne, F. F. Bushnell, Chas. L. Colton, G. W. Loveland, J. H. Kelley, R. P. Lyman, H. L. Tower, G. T. Elliott, C. L. Adams, and B. K. Dow. Visitors: J. S. Schofield, Greenwich, Ct.; H. L. Switzer, Hartford, Ct.; B. D. Pierce, Springfield, Mass., and T. S. Childs, Saratoga, N. Y.

Minutes of the previous meeting were read and approved.

Reports of the Secretary and Treasurer were read and accepted. One of the Board of Censors being absent, it was voted to instruct the President to appoint a member to fill the vacancy. The President appointed Dr. Bland.

The Board of Censors reported favorably on the applications of Drs. J. S. Schofield and W. L. Fowler. A ballot was taken on the applications of Drs. Schofield and Fowler, which resulted in their being elected to membership in the Association.

The following applications for membership were presented: A. C. Knapp, D. V. S., Bridgeport, vouchers, Drs. H. E. Bates and R. D. Martin; W. J. Southey, D. V. S., A. V. C., Bridgeport, vouchers, Drs. R. P. Lyman and R. D. Martin; H. L. Switzer, V. S. (O. V. C.), Hartford, vouchers, Drs. R. P. Lyman and G. V. Towne. These applications were referred to the Board of Censors.

The following officers were elected for the ensuing year:

President—Dr. J. H. Gardner, Norwich.

First Vice-President—Dr. G. W. Loveland, Torrington.

Second Vice-President—Dr. J. H. Kelley, New Haven.

Secretary—Dr. B. K. Dow, Willimantic.

Treasurer—Dr. E. C. Ross, New Haven.

Board of Censors—Drs. Thos. Bland, Waterbury; C. L. Adams, Danielson; H. L. Tower, Norwich; H. E. Bates, So. Norwalk; and L. B. Judson, Winsted.

Dr. R. P. Lyman, Chairman of the Committee on Legislation, reported that the bill which the committee drafted had been modified and presented to the Legislature. Dr. Lyman also read a copy of the bill which the Connecticut Humane Society had introduced in the Legislature. This bill is to give the Humane Society better and more control of glanders and contagious diseases.

Several of the members reported peculiar and interesting cases which had occurred in their practices.

Dr. Martin invited the members to hold the semi-annual meeting in Bridgeport at his hospital. He promised a good clinic and entertainment. It was voted to accept Dr. Martin's invitation and hold the semi-annual meeting the first Tuesday in August at his hospital in Bridgeport.

At 5.30 it was voted to adjourn. B. K. Dow, *Secretary.*

AMERICAN VETERINARY MEDICAL ASSOCIATION.

RESIDENT STATE SECRETARIES, 1904-1905.

United States.

Alabama—A. Gibson, 412 N. Twentieth St., Birmingham.

Arizona and New Mexico—J. C. Norton, Phoenix, Arizona.

Arkansas—R. R. Dinwiddie, Fayetteville.

California—Archibald R. Ward, Berkeley.

Colorado and Utah—Geo. H. Glover, Fort Collins, Colorado.

Connecticut—F. F. Bushnell, Winsted.

North Dakota and Montana—W. F. Crewe, Devil's Lake, No. Dakota.

District of Columbia—A. D. Melvin, Dept. of Agr., Washington, D. C.

Florida—J. G. Hill, 324 Forsythe St., Jacksonville.

Hawaii Territory—W. T. Monsarrat, Honolulu.

Illinois—Jos. Hughes, 2537 State St., Chicago.

Indiana—J. O. Greeson, Kokomo.

Iowa—H. C. Simpson, Denison.

Kansas—E. Makins, Jr., Topeka.

Kentucky—D. A. Piatt, Lexington.

Louisiana—Jos. L. Drexler, Thibodaux.

- Maine*—A. Joly, Waterville.
Maryland—F. H. Mackie, Baltimore.
Massachusetts—Benj. D. Pierce, Springfield.
Michigan—S. Brenton, Detroit.
Minnesota—D. M. McDonald, Brainerd.
Missouri—W. F. Heyde, 1215 S. Jefferson Ave., St. Louis.
Mississippi—J. C. Robert, Agricultural College.
Nebraska—W. A. Thomas, Omaha.
New Jersey—Jas. T. Gleeson, 146 Sumner Ave., Newark.
New York—J. E. Ryder, 1634 Broadway, New York.
Nevada and Idaho—J. Otis Jacobs, Reno, Nevada.
North Carolina—A. S. Wheeler, Biltmore.
Ohio—Paul Fischer, Columbus.
Oregon—J. H. Creamer, Portland.
Pennsylvania—C. J. Marshall, 2004 Pine St., Philadelphia.
Rhode Island—Thos. E. Robinson, Westerly.
South Carolina and Georgia—A. S. Shealy, Clemson College, S. C.
South Dakota—E. L. Moore, Brookings.
Tennessee—Geo. R. White, Nashville.
Texas—W. A. Knight, Houston.
Vermont and New Hampshire—F. A. Rich, Burlington, Vermont.
Virginia—John Spencer, Blacksburg.
Washington—James Bullivant, Spokane.
West Virginia—F. P. Ruhl, Fairmont.
Wisconsin—Chas. Schmitt, Dodgeville.

Canada.

- British Columbia*—Johnson Gibbons, 1003 Granville St., Vancouver.
Manitoba—F. Torrance, Winnipeg.
Northwest Territory—J. F. Burnett, Macleod.
Nova Scotia—Wm. Jakeman, Halifax.
Ontario—Thos. Thacker, Renfrew.
Quebec—A. A. Etienne, St. Hyacinthe.

Colonies.

- Philippine Islands*—G. E. Nesom, Manila.
Cuba and Porto Rico—N. S. Mayo, Santiago de las Vegas, Cuba.

South America.

- Argentine République*—Pedro L. del Carril, La Plata.

Australia.

South Australia—J. Desmond, Adelaide.

COMMITTEES, 1904-1905.

Executive—C. E. Cotton, *Chairman*; D. E. Salmon, Roscoe R. Bell, W. H. Hoskins, W. H. Dalrymple, J. R. Mitchell.
Ex-Officio—M. E. Knowles, J. G. Rutherford, E. M. Ranck, G. R. Young, G. W. Dunphy, R. P. Lyman, J. J. Repp, Wm. Herbert Lowe.

Finance—Thos. E. Smith, *Chairman*; A. H. Baker, J. F. Roub.

Publication—Richard P. Lyman, *Chairman*; T. E. Robinson, E. M. Ranck, W. H. Dalrymple, J. J. Repp.

Intelligence and Education—C. J. Marshall, *Chairman*; E. B. Ackerman, M. H. Reynolds, N. S. Mayo, G. R. White.

Diseases—Chas. H. Higgins, *Chairman*; L. Pearson, V. A. Moore, J. R. Mohler, A. R. Ward, S. H. Ward.

Resolutions—James Law, *Chairman*; S. H. Gilliland, J. L. Robertson, Wm. Dougherty, J. C. Norton.

Necrology—F. Torrance, *Chairman*; J. F. Winchester, S. H. Ward, J. F. Burnett, J. G. Rutherford.

Programme—S. Stewart, *Chairman*; A. M. Farrington, J. G. Rutherford, A. Plummer, S. Brenton.

Army Legislation—Wm. H. Lowe, *Chairman*; Roscoe R. Bell, W. Horace Hoskins, W. H. Kelly, J. H. McNeall.

Local Arrangements—E. H. Shepard, *Chairman*; E. P. Schaffter, A. S. Cooley, A. E. Cunningham, S. Burrows.

SOUTHERN AUXILIARY OF THE CALIFORNIA
STATE VETERINARY MEDICAL ASSOCIATION.

(*From the Western Veterinarian.*)

We held our regular quarterly meeting on January 11th, at 8 P. M., at my infirmary. The meeting was called for 6.30 P. M. by the Secretary, Dr. Fenimore, but it was impossible to get the members together at such an untimely hour.

Dr. W. E. D. Morrison entertained Dr. Keane and the writer at dinner at the Broadway Van Noyse, and of course it was out of the question to leave there before 7.30 P. M.

After the meeting was called to order Dr. Ion W. Parks, of Pasadena, read a very interesting paper which had been ripening in cold storage for the past nine months. The paper consisted of an account of his experience in the treatment of

deep wounds by the use of air irrigation, the curette and the application of a normal salt solution followed by injections of a solution of formalin, one-half ounce to the gallon. He claimed that the action of the saline solution prevented the hardening of the tissues which occurs following the use of the formalin solution alone.

The paper stimulated a lengthy discussion on the action of formalin. Some of the members had had good results following its use, while others did not like it at all.

The writer stated that he had employed the agent for two years and had nothing but praise for it ; at the same time he realized that it must be used with the greatest care and judgment, as too strong a solution is the tendency in its use.

Some members had used it so strong that the hardened tissues could be pulled out like raw-hide strings, and of course they did not, for that reason, favor it.

Dr. R. T. Whittlesey, of Los Angeles, was then called upon and responded by reading a paper upon infected wounds, nail pricks, etc., of the foot ; and in connection presented a horse that he had operated on a few days before, performing resection of the perforans tendon, exposing the navicular bone and bursa for an inch and one-half above it.

The paper, while a disjointed affair, was far better than he could have produced out of whole cloth. It commenced with a resume of an article on the subject by Dr. W. L. Williams, published in the November issue of the VETERINARY REVIEW, and followed by reports of cases by the same author which were published in the December issue of said journal ; also reports of cases and extracts from Cadiot's Clinical Veterinary Medicine and Surgery, Liautard's Veterinary Surgery and Liautard's translation of Zundel on the Horse's Foot. At the conclusion of the reading of the paper the above-mentioned horse was placed upon the operating table and his foot exposed for observation. The history of the case was that the horse, while hauling a delivery wagon, picked up a large wire nail during the last week of December. On January 2 the writer was called in and found, upon examination, exfoliation of the entire frog, which was removed, and a punctured wound situated about the center of the foot, which was discharging purulent synovia. The horse, not being very gentle, it was impossible to thoroughly investigate the depth of the puncture without throwing him down. Peroxide of hydrogen was injected and the wound packed with cotton saturated with formalin solution. This

treatment was continued for several days without benefit. The owner was requested to allow the animal to be brought to the writer's infirmary, but declined on the ground that he believed it to be less expensive to have treatment carried on at his own stable.

On January 6th the horse was cast and a thorough examination made, revealing a diseased condition of the bone and an abscess above and posterior to the puncture. Upon completing the examination the horse was allowed to regain his feet and the owner was informed that the patient must be removed to some place where he could receive proper attention, otherwise he might just as well be destroyed. The owner finally consented and the animal was removed to the hospital and was placed on the operating table. The leg was cocainized and a tourniquet applied. With a probe-pointed bistouri the puncture was enlarged by an incision three-quarters of an inch toward the heel. There followed quite a flow of pus and upon exploring the cavity it was found that the abscess extended up the tendon nearly to the skin. All the frog on the side of the puncture and about one-half of the other side was removed as well as all the tissues down to the sheath of the tendon, a portion of which was also removed, exposing the navicular bone, making complete drainage.

The wound was thoroughly cleansed and packed with gauze, which, in turn, was covered with cotton saturated with a formalin solution. On account of curiosity and desiring to watch the progress made by the wound, the dressing was not allowed to remain on eight or ten days as recommended by Dr. Williams, but was removed every day.

The relief to the animal was immediate; he stood up, ate hay and appeared to suffer very little.

At the conclusion of Dr. Whittlesey's remarks and demonstration, in which all present were very much interested, a general discussion followed.

Many inquiries have been made since the meeting regarding the progress of this case, which has been all that possibly could be expected. No pus formed in the wound and only a slight serous discharge was noticed, this being barely sufficient to wet the gauze packing. The greatest difficulty in the after treatment of the wound was experienced in keeping the ragged fringes of the tendon trimmed from around the edges of the opening through the perforans, but this difficulty soon ceased.

The conclusions of the writer are that the operation is a prac-

tical one and not very difficult to perform if the operator has proper facilities for handling cases during and after operating. The after dressing of the wound must be carefully done by some one who thoroughly appreciates the necessity of asepsis.

Dr. Chas. Keane presented to the meeting a draft of a bill he intends to introduce at the present Legislature, relating to county veterinarians. The bill received the unanimous endorsement of the Association.

The meeting lasted until after midnight and was such a success that some of the members suggested monthly meetings. This suggestion, however, failed to find favor with the majority.

The meeting then adjourned to meet on Wednesday, April 12, 1905.

R. T. WHITTLESEY, D. V. S.

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular monthly meeting was held at the Boston Veterinary Hospital, Wednesday evening, February 22d, at 8 P. M. There were six members present. Minutes of previous meeting accepted as read. It was voted that Dr. Langdon Frothingham be authorized as representative of this Association, at the hearing of the antivivisectionists, as opposed to passage of this bill. On receipt of notice of time of the hearing on the "Compensation bill for glandered horses," the Secretary was instructed, by vote, to send notices to all members requesting their presence at the State House. It was voted that the Association have a "question box," as mentioned in the editorial section of the REVIEW. Adjourned 9.45 P. M.

F. J. BABBITT, *Secretary.*

LOUISIANA VETERINARY MEDICAL ASSOCIATION.

In response to a call issued by Dr. R. A. Phillips, of Plaquemine, La., a number of veterinarians met, on February 18, 1905, in the veterinary class room of the Louisiana State University and A. & M. College, at Baton Rouge, for the purpose of organizing the State Veterinary Medical Association.

After a few words of welcome from Dr. W. H. Dalrymple, and a few remarks on the great importance of organization, the meeting went into permanent organization. Dr. Dalrymple, in moving the nomination of Dr. R. A. Phillips for President of the Louisiana Veterinary Medical Association, which was duly seconded by Dr. E. Pegram Flower, of Baton Rouge, stated

that it was through the persistent effort of Dr. Phillips this organization had become, at this time, a reality, for which he was very much to be congratulated, and, therefore, it seemed to him only right that the Doctor should be made the first President of the Association. Dr. Phillips was unanimously elected President, and he thanked the Association for the honor conferred. Dr. Flower proposed the name of Dr. M. M. White, of Shreveport, for Vice-President. Dr. Dalrymple seconded the nomination.



LITTLE BUNCH OF ORGANIZERS OF THE LOUISIANA VETERINARY MEDICAL ASSOCIATION,
FEBRUARY 18, 1905.

tion, which was unanimously carried, and Dr. White thanked the members for his election. On motion of Dr. Phillips, seconded by Dr. Bailey E. Chaney, of Monroe, Dr. Flower, of Baton Rouge, was elected Secretary-Treasurer of the Association.

A Constitution and By-Laws were adopted, and it was decided that meetings of the Association be held semi-annually (September and February).

Honorary membership was conferred upon the following gentlemen: Prof. James Law, Cornell University, Ithaca, N. Y.; Dr. Roscoe R. Bell, Brooklyn, N. Y.; Dr. Leonard Pearson, University of Pennsylvania, Pa.

E. PEGRAM FLOWER, *Secretary.*

MISSISSIPPI VALLEY VETERINARY MEDICAL ASSOCIATION.

The above Association was organized at Monmouth, Ill., the first week of the new year. It will hold meetings at least every three months, perhaps oftener during the winter months. We are very enthusiastic over our little Society, and are having some very interesting meetings.

W. C. HANAWALT, *Galesburg, Ill.*

THE essay on "Forging" by Dr. F. C. Grenside, of New York, which won the Dougherty prize and was published in the REVIEW some time ago, was reproduced in the *Sporting Record* of February 23,—the official organ of the Maryland Jockey Club.

WITH all the mechanical devices before the public to take the place of horses, it is rather suggestive that, according to the report of the Illinois State Board of Agriculture, there are now more horses in Illinois than ever. The assessors reported 1,224,487 in the State in the year 1904. Evidently the horseless age has not arrived. Not only are there more horses than ever, but the average price is larger than at any time.

THE SOUNDNESS OF HACKNEYS.—The exceptional soundness of the breed may be judged by the following figures. At the London Hackney Shows, from 1890 to 1904, inclusive, 4,946 stallions, mares and geldings have been thoroughly examined by the veterinary inspectors, and of this number 4,704 have been passed as sound, only 242 being rejected, the larger proportion of these being horses entered in the half-bred and harness classes. The examination is a most stringent one. Since the 1896 show every animal present in the show has been submitted to the vets. Such a favorable result needs no comment. This general soundness is frequently quoted by Continental buyers as one of the most prominent characteristics of the breed.—(*Farmer's Advocate.*)

NEWS AND ITEMS.

WITH a milk trust on one end and a beef trust on the other, who can blame the poor old cow for being sour-tempered.

DR. F. H. P. EDWARDS, of Iowa City, Iowa, with his wife and two daughters, spent four months in Europe during the fall and early winter.

THOUGH but four years old, Evarts, S. D., claims to be the largest primary stock market in the world, vast herds of cattle on the range being taken there for shipment to the Chicago market.

DR. W. T. MONSARRAT, of Honolulu, Hawaiian Territory, has made application for a practice license in California. Is our genial friend and loyal *confidante* coming to the States to live, so that he can attend all the meetings of the A. V. M. A.?

I would not enter on my list of friends,
Though graced with polished manners and fine sense,
Yet wanting sensibility, the man
Who needlessly sets foot upon a worm.—*Cowper.*

DRS. E. B. ACKERMAN, Elisha Hanshew, and Roscoe R. Bell, of Brooklyn, N. Y., attended the annual meeting of the Pennsylvania Veterinary Medical Association, at Philadelphia, on March 8th.

DR. W. L. WILLIAMS of the New York State Veterinary College, stopped over in New York on the 18th ult., on his way home from Florida, where he spent several weeks in a successful effort to throw off a cold which had clung to him for the major portion of the winter. The doctor looked remarkably well, and made a pleasant call upon the REVIEW.

“CORNELL ALUMNI NEWS” of February 15, devotes the major part of its space to an article entitled “Cornell Veterinarians: Some Cornell Men Who Have Achieved National Distinction in Comparative Medicine,” by D. Arthur Hughes, ‘68. After giving a history of the University in its relation to veterinary science, sketches of the following well-known graduates are given: Daniel Elmer Salmon, ‘72; Arthur Manly Farrington, ‘79; Leonard Pearson, ‘88; Veranus Alva Moore, ‘87. Excellent half-tones of the biographical subjects are given.

DR. GEORGE R. WHITE, of Nashville Tenn., favored the REVIEW with an exquisitely engraved invitation to attend the commencement exercises of the Medical Department of the University of Nashville, which took place on the 31st ult., and on looking over the class-roll we find the name of George Ran-

som White, D. V. S. We congratulate the Doctor, and feel assured that his added laurels and opportunities will be utilized in the advancement of veterinary science, rather than employing his new degree to forsake his first love.

A WOMAN WORKER.—Miss Clara Medlin, of Pilot Oak, bears the distinction of being the only female blacksmith on record. Miss Medlin is a very handsome young lady, with a wealth of dark brown hair and a pair of bewitching brown eyes. She can shoe a horse or weld a tire as quickly as any smith in this section, and as for neatness no other smith will dare to compete with her. She is also an expert carriage painter. This is really her specialty, she having painted over seventy buggies the past season. Notwithstanding all of this, Miss Medlin has not neglected to educate herself in housekeeping and cooking. As an all round, useful girl she cannot be excelled anywhere in "Old Kaintuck."—(*Horseshoers' Journal*.)

DR. GAY GOES TO OHIO.—The animal husbandry department of the Ohio State University at Columbus has recently been strengthened by the election to its staff of Dr. Carl W. Gay, who is to be Prof. C. S. Plumb's assistant. Dr. Gay is a graduate in veterinary medicine, receiving his degree at Cornell University. For three years he held a professorship in the veterinary department of the Iowa Agricultural College at Ames. In 1903 he abandoned veterinary work to take a course in animal husbandry at that institution, where for the past six months he has been assisting in the instructional work of that department. Dr. Gay will assume his duties at Columbus April 1.—(*Breeder's Gazette*.)

GEORGE FLEMING AS A HORSESHOER.—July, 1869, the committee of the Scottish Society for the Prevention of Cruelty to Animals offered a series of prizes for "the best and most practical essay on horseshoeing in connection with the soundness and comfort of the horse." The limits to which the contest was confined embraced the British Isles, and by August, 1870, forty papers had been received from those in the contest. A committee consisting of the leading veterinarians of England and Scotland passed upon the merits of the papers, and the result was the tendering of first prize to a man who at the time was a practical horseshoer only, though he afterwards became a master in the different degrees of veterinary science. He was Mr. George Fleming. At the time mentioned Mr. Fleming was an instructor in farriery in the British army, and was, therefore, recognized as a man amply fitted in theory and practice to deal with his

subject. His lengthy paper on the subject embraced in the title covers the ground clearly. The essay of Fleming was turned to good use, being printed in book form and thousands of copies of it sold to horseshoers and others in all parts of the world. To the average man it might appear strange that a hard-working horseshoer could successfully compete with finely educated men in a contest of this kind, for of the forty who submitted papers for competition there were few, if any, who had not given their lives to the study of the horse in all his relations, the foot and its shoeing being points which must certainly have engaged their attention along with those of other parts of the anatomy. But it was the horseshoer who won first honors, and thus the name of Fleming became known world wide among his fellow-practitioners, for, though he had previously been a writer as well as practitioner in horseshoeing, and afterwards became recognized as a leading veterinary medical man, this essay of his did more to make him noted in his own particular sphere than anything he ever did. A suggestion: Suppose the American Veterinary Medical Association follow the lead of the Scottish Society in offering encouragement to men to engage in the same pursuit as that which brought fame to both Fleming and the society itself?—(*Horseshoers' Journal*.)

A VETERINARY HOSPITAL FOR UNION STOCK YARDS, CHICAGO.—Dr. W. Arthur Young, of Chicago, Ill., in a letter dated March 3, after telling of a delightful evening he spent at a well-attended meeting of the Chicago Veterinary Society, at which the subject of "Influenza, or Stock Yards Fever" was thoroughly discussed, says: "It was given out at this meeting that the Union Stock Yards and Transit Company are contemplating the erection of a very large veterinary hospital at the Yards for the accommodation of all animals that arrive at the Yards sick or crippled, and that it will be compulsory to place all such animals in the hospital until discharged by the attending veterinary surgeon. The main object is to try and lessen the amount of influenza at the U. S. Yards, as the prevalence of the disease is injuring the horse market."

THE HABIT OF TONGUE-LOLLING.—As a contribution to the discussion of tongue-lolling which has recently appeared in the REVIEW, we find the following letter in the *Breeder's Gazette* of recent issue from Dr. F. C. Grenside, of New York City: "In recent issues of the *Gazette* I have seen two or three references to the subject of tongue-lolling in horses and suggestions as to remedies. The habit can be cured in some cases and pal-

liated in others, but there are some subjects in which it has not only become a confirmed habit, but in which there is also special predisposition, owing to the length and flaccidity of the tongue. In such cases there is only one radical cure, and that is amputation of a small portion of the organ. The suggestion of this remedy to some owners causes them to hold up their hands in holy horror and stigmatise it as a barbarous idea. This, however, is only due to lack of experience, as this method is absolutely effective, the operation itself causes no pain if properly performed and sensation destroyed by the use of a local anesthetic and it does not impair the horse's ability to eat, drink, and thrive. Of course for a few days after the operation there is some slobbering and irritability of the mouth shown, but it soon passes off and we are rid of the unsightliness of a lolled tongue. In addition the subject is apparently more comfortable about his mouth, and is at least rid of the discomfort of having a parched tongue to draw into his mouth after the bit is taken out. Some horses have five or six inches of the tongue out of their mouth, but in the worst cases it is not necessary to take off more than three inches. Two inches is usually enough, as it appears to cause contraction and retraction of the organ and at any rate suffices to prevent lolling. In many cases horses that loll their tongues put them over the bit first, but in others this is not done, and particularly with those that project the tongue from between the front teeth. Although there is no doubt a special predisposition in some horses to develop this habit and show an aggravated form of it, an exciting cause is always brought into operation in order to develop it. The whole trouble starts with the biting. Owners as a rule do not seem to realize that the ability of the tongue to stand pressure from the bit has to be cultivated by degrees. The ignoring of this principle is the cause of many of the troubles in connection with the mouth and particularly tongue-lolling. What is called "hiding the tongue" or drawing it up in the mouth to avoid pressure on it by the bit is another bad habit resulting from the same cause. It must not be understood that it is advisable to resort to amputation in all cases of tongue-lolling. First, try to determine the cause, and if possible remove it. Try different kinds of bits and find the place in the mouth for the bit to rest that is most comfortable to the horse. In some articles I wrote in the *Gazette* last year about biting measures were suggested for training the tongue to stand a reasonable amount of pressure from the bit. This is the key to the whole process of

proper biting and the means of preventing some of the most disagreeable habits in connection with the mouth. In a horse that puts his tongue over the bit, before lolling it, measures that prevent this will of course stop lolling. Port bits, spoon bits, a rubber band or strap for keeping the tongue under the bit are used, with more or less success both as temporary devices and some claim curative agents. One kind of bit may be comfortable for one horse that is not suitable for another. Some horses will keep their tongues in position better with a thick snaffle, while others do better with a very fine one. In using an unbroken or stiff mouthpiece in horses that are at all fussy about their tongues, it should be made "half-moon" shaped, as this distributes the pressure more to the sides as well as the centre of the tongue, while the branches of the jaw bear their quota. In speaking of getting the tongue habituated to pressure it is not intended to convey the idea that unresponsiveness to it is to be encouraged, in fact a non-sensitive tongue is sure to be associated with an unresponsive mouth, which is one of the predisposing causes of injury to that organ, and the consequent tendency to lolling. What it is desirable to avoid is what we have designated as "fussing" with the tongue. While the non-sensitive tongue lies motionless in the groove Nature has provided for it, ready to be bruised, cut or abraded by its passiveness, or its circulation interfered with by its non-resistance to pressure, the organ that has not been trained to stand reasonable pressure from the bit is constantly on the move, leading to an unsteady mouth, and by getting out of the way of the bit, by retraction or by putting it over the bit, exposes the branches of the lower jaw to injury. What we should aim at then is to cultivate the ability of the tongue to stand reasonable pressure without showing irritability. Horses' tongues vary a great deal in size, form and sensitiveness. The narrow firm tongue, usually associated with a lower jaw with narrow sharp-ridged branches, is apt to constitute a very sensitive mouth but one that in patient and skilful hands can be made the perfection of responsiveness. What is designated the beefy tongue is bulky, usually lacking a high degree of sensitiveness and is apt to lie quiet under the bit. If possessed by a free, courageous horse there is great danger of his becoming a puller in thoughtless unskilful hands. If the bit is placed high in such a mouth we will usually find the tongue congested, after a drive. Then, there is the long, flaccid tongue, seemingly lacking in sensitiveness and power of retraction and very apt to be the subject of lolling."

WHAT REVIEW SUBSCRIBERS SAY.

"THE REVIEW improves every year in bright, crisp news. I am a thirteen-year-old subscriber."—(*W. B. Lewin, D. V. S., Russell, Ill.*)

"ACCEPT my congratulations upon your success in publishing such an interesting periodical."—(*Immanuel Pfeiffer, Jr., Bedford, Mass.*)

"I LOOK upon the REVIEW as my 'companion dear, sterling in worth, in friendship most sincere.'"—(*S. R. Howard, V. S., Hillsboro, Ohio.*)

"ALLOW me to congratulate you in your endeavor to keep before us a modern scientific veterinary journal."—(*George Hilton, Portage la Prairie, Manitoba.*)

"I CONSIDER THE REVIEW worthy of the library of any veterinarian. I look for it at the first of every month with enthusiasm."—(*J. S. Leslie, Sedalia, Mo.*)

"ANYONE who assumes the title of veterinarian and does not take the REVIEW, will soon become a 'has-been,' and is to be censured, not pitied."—(*F. H. P. Edwards, Iowa City, Iowa.*)

I FIND THE REVIEW an ever-increasing source of pleasure and profit. I trust its scope of usefulness shall become even greater to the practical veterinarian."—(*J. E. Assing, New York City.*)

"I CONGRATULATE YOU on the ever-progressive, up-to-date, extremely interesting, and valuable volume just completed, and wish your future endeavors even greater success."—(*W. C. Hawwalt, Galesburg, Ill.*)

I HAVE been practicing nearly seventeen years, and now I don't see how I got along without the AMERICAN VETERINARY REVIEW. I expect to always take it while it remains as good as it is, and think every practitioner should subscribe for it."—(*J. B. L. Terrell, Dresden, Tenn.*)

"THE REVIEW is very highly appreciated by me, and I would not want to do without it for anything. It is an ever-ready helper to a new practitioner, as I am, as the suggestions and treatment for different diseases given in it are very beneficial. A long life and prosperity to the REVIEW is the wish of a subscriber and friend."—(*W. W. Talbot, M. D. C., Oskaloosa, Iowa.*)

THE usual plan for preparing horse meat in Europe is in stews, but for that matter steaks are not rare in the old country. They believe in getting all the good there is in meat, and this comes through the slow stew.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table will be found the dates, places of meeting, and Secretaries' names and addresses of all the Veterinary Medical Associations of the United States and Canada. Secretaries are requested to see that their organizations are properly included in the list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	August 15-18.	Cleveland, O.	J. J. Repp, Phila., Pa.
Vet. Med. Ass'n of N. J.....	July 13-14, 1905	Wash'gton Pk	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	1st Tues. Aug.	Bridgeport.	B. K. Dow, Willimantic.
New York S. V. M. Soc'y.....	September, 1905	Ithaca.	W. H. Kelly, Albany, N.Y.
Schuylkill Valley V. M. A.....	June 21, 1905.	Reading, Pa.	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	April 3, 1905.	Paterson, N.J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....			A. E. Flowers, Dallas.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet. Med. Ass'n.....	April, 1905.	Waterville.	C. L. Blakely, Augusta.
Central Canada V. Ass'n.....		Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....			Judson Black, Richmond.
Alumni Ass'n N. Y.—A. V. C.	April, 1905.	141 W. 54th St	W. C. Miller, N. Y. City.
Illinois State V. M. Ass'n.....	Feb. 15, 1905.	Decatur.	W. H. Welch, Lexington, Ill.
Wisconsin Soc. Vet. Grad.....	Call of Pres't.	Racine.	S. Beattie, Madison.
Illinois V. M. and Surg. A.....	Call of Com.	Champaign.	J. M. Reed, Mattoon.
Vet. Ass'n of Manitoba.....	July, 1905.	Not determ'ed	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....			T. B. Carroll, Wilmington.
Ontario Vet. Ass'n.....	July, 1905.	London, Ont.	C. H. Sweetapple, Toronto.
V. M. Ass'n New York Co.....	1st Wed. ea. mo.	141 W. 54th St	D. J. Mangan, N. Y. City.
Ohio State V. M. Ass'n.....		Columbus.	W. H. Gribble, Wash'n C.H.
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh.	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	August, 1905	Kansas City.	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n.....	July, 1905.	Roch'ter, N.Y.	J. H. Taylor, Henrietta, N.Y.
Iowa State V. M. Ass'n.....	January, 1906.	Ames.	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n.....	July, 1905.	Minneapolis	J. G. Annand, Minneapolis.
Pennsylvania State V. M. A.....			C. J. Marshall, Phila.
Keystone V. M. Ass'n.....	2d Tuesday of each month.	Philadelphia.	C. J. Marshall, 2004 Pine St., Phila.
Colorado State V. M. Ass'n.....	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....		Kansas City.	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n.....			T. E. Robinson, Westerly, R.I.
North Dakota V. M. Ass'n.....	January, 1906.	Fargo.	E. J. Davidson, Grand Forks.
California State V. M. Ass'n.....	Mch. Je. Sep, Dc	San Francisco	P. H. Browning, San Jose.
Southern Auxiliary of California State V. M. Ass'n.....	Jan. Apl. Jy, Oct.	Los Angeles.	H. D. Fenimore, Los Angeles.
South Dakota V. M. A.....			E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....			A. T. Peters, Lincoln.
Kansas State V. M. Ass'n.....		Topeka.	Hugh S. Maxwell, Salina.
Ass'n Médécale Veterinaire Francaise "Laval,".....	1st & 3d Thur. of each month.	Lect. R'm La-val Un'y Mon.	J. P. A. Houde, Montreal.
Alumni Association A. V. Col.....	April each yr.	New York.	F. R. Ihanson, N. Y. City.
Province of Quebec V. M. A.....		Mon. & Que.	Gustave Boyer, Rigaud, P.Q.
Kentucky V. M. Ass'n.....			D. A. Piatt, Lexington.
Wolverine State V. M. Ass'n.....			W. W. Thorburn.
Washington State Col. V. M. A.....	1st & 2d Friday	Pullman, Wa.	Wm. D. Mason, Pullman.
Ohio Valley V. M. Ass'n.....	April, 1905.	Evansville, I'd	J. W. Moses, Mt. Vernon, Ind.
Iowa-Nebraska V. M. Ass'n.....			A. T. Peters, Lincoln, Neb.
Louisiana State V. M. Ass'n.....			E. P. Flower, Baton Rouge.

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About two years ago The Norwich Pharmacal Co. after several years of careful study and clinical tests placed before the veterinary profession a line of specialties, some of which are advertised in this paper. The success of these preparations was assured from their inception, and a large and lucrative trade, not only on these specialties, but also on standard U. S. P. fluid extracts, tinctures, tablets and other pharmaceutical preparations is now enjoyed by this company, who conduct their business on ethical principles and always extend prompt and courteous attention to all patrons. If you are not on their list of customers it would be to your advantage to write for their catalogue and price list of pharmaceutical preparations and specialties. They also make a specialty of packaging stock and special formulas with buyer's name on labels and no extra charge is made for special name printing.

The New York branch office is in charge of Mr. H. Noonan, who will be pleased to receive communications relative to your wants.

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GERMS are found to be responsible for a large number of the diseases to which animals are liable. These germs of which we hear so much nowadays are very small living organisms, much smaller than the smallest particles of dust. Certain kinds of germs when taken into the animal body with food, air, or through wounds are capable of producing disease. The great preventive of germs is cleanliness. Decaying organic material, dirt and refuse matter constantly poison the air and food. It is here that a disinfectant is valuable. There are many chemicals which will destroy germs, but many of them are poisonous, inflammable or explosive. Zenoleum is prepared with the express idea of avoiding these difficulties. It is so absolutely non-poisonous, that it is often given internally by veterinarians. It will not burn or explode. Its effectiveness as a germ destroyer is proved and certified to by some of the best physicians and veterinarians in the country. Send for "Veterinary Adviser" and "Piggies' Troubles." These booklets give detailed information. They are free. Write the ZENNER DISINFECTANT COMPANY, 24 Bates Street, Detroit, Michigan, for them.

THE busy "Spratt's Patent (America) Ltd." firm, have just penned the Westminster Kennel Club and Pittsburg "shows," and are this week (March 25) benching and feeding the Rochester Dog Show, and have contracted to do the same work at Chicago, Brooklyn, Boston Collie Club, Atlantic City, and others in rapid succession.

AMERICAN VETERINARY REVIEW.

MAY, 1905.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, March 15, 1905.

DIAGNOSIS AND TREATMENT OF COLICS.—Some time ago there appeared in the *Zeitschrift für Veterinärkunde* an article by Klingberg of which an extract appeared later in the *Revue Générale*, and which related to "the diagnosis and the treatment of colics in the horse." On the considerations of the various methods of exploration likely to give precise information on the nature of the affection were mentioned: the feeling of the pulse, the examination of the mucous membranes, the study of the respiration, of the temperature of the body, that of the skin, the size of the abdomen, the palpation, auscultation and percussion of the abdominal walls, and the rectal exploration. This last is most important and alone can give sound information on the nature of the faeces, the position of the intestinal circumvolutions, their condition of repletion, the condition of the bladder, and the presence of calculi, volvulus, tumors, etc. By methodic manipulations one can always arrive at a positive diagnosis and classify the trouble in one of the following categories: overloaded stomach, obstruction of the large intestine, intestinal tympanites, etc.

In relation to the treatment, the author recommends the following hygienic measures: walking exercise at the onset of the disease, as after injection of arecoline, eserine, chloride of barium; turned loose in a box with plenty of straw. . . . Mas-

sage of the abdominal walls and *massage of the rectum with closed fist so as to act upon the pelvic curvature of the large intestine and upon the bladder*; rectal injections with long tube and a good quantity of liquid—to which a strong dose of ether can be added. The medical treatment consists in aloes, sulphate of soda, or castor oil, and milk with calomel; eserine; puncture, etc.

* * *

The principal part of the paper relates evidently to the application of the internal massage for some special cases, such as those where it is necessary to act on the pelvic curvature of the colon or on the bladder. In the *Revue Générale* I find from Dr. P. Ferrett another indication in which this massage had given him excellent results, viz., in cases where there is an abnormal production of gases, and in which the internal massage was performed by the intromission of the arm, almost in whole, the object of which is to facilitate the propulsion of those gases through the intestines and thus expulsion through the rectum and anus.

To substantiate the value of his modification of the manipulations of the ordinary massage, Mr. Ferrett relates six cases where in a comparatively short time he gave immediate relief to animals suffering with severe colics. The massage has sometimes to be renewed two or three times. One instance is mentioned where the operation had to be renewed daily for six days for colics more or less severe alternating with periods of quietness. In this case the colon was filled with softened faeces, and while the massage did not give rise to great expulsion of gases, it nevertheless facilitated the propulsion of the faeces and their ultimate movement towards the rectum.

* * *

The *modus operandi* is resumed as follows: Asepsy of the hand, forearm and arm; nails cut short; the arm oiled to facilitate its intromission. First the hand is rested on the floor of the rectum, its condition made out, the organ is submitted to massage. The arm is then pushed in as far as the deltoid mus-

cle. Most ordinarily, the last portion of the floating colon contracts over the hand and may arrest its progress. But soon the muscular coat relaxes and the massage of the colon, of the cæcum and of intestinal circumvolutions can be proceeded with. Soon the peristaltic movements of the intestines are felt after some fifteen to twenty minutes of manipulations, and with them the gases begin to travel. The arm can then be gradually withdrawn to facilitate the escape. After five or ten minutes, the arm is pushed again and the massage continued.

The intromissions must be done without great force. Sometimes an expulsive effort from the animal may bring on slight prolapsus, which is readily controlled afterwards.

In conclusion, Dr. Ferrett says: The phenomena of pains in colics of horses are often the result of the abnormal production of gases. The evacuation of these gases can be obtained by massage of the intestines through the rectum ; massage which promotes or stimulates the peristaltic action, facilitates the displacement of excrementitious products and stimulates vesical contractions. It is easy in its application, without the danger of serious complications and is deserving the attention of practitioners.

* * *

INFECTIOUS ANÆMIA.—In a previous article I related the investigations in which Profs. Vallée and Carré were engaged in the study of “infectious anæmia.” I am able to-day to add some new facts which were the subject of a communication before the Academie des Sciences, relating to the inoculability of the virus of the disease, its nature and the etiological conditions which give rise to it.

Indeed, we are informed that it is easy to preserve the virus of anæmia by successive passages in the horse and that each passage is accompanied with an increased virulence. We also are told that the anæmia is only one form of the disease, which is an infectious one, often revealing itself under other aspects, which permit its recognition in three forms: (1) Acute, developing in three or four weeks, oftener quicker, and character-

ized by constant hyperthermia, more or less marked loss of flesh, oedematous infiltration, special coloration of the conjunctiva, albuminuria, cardiac and locomotory troubles. (2) Subacute, lasting about two months, characterized at the onset by the symptoms of the acute type, but slightly milder, and end with the characteristic anaemia. (3) Chronic form, in which, after an initial high elevation of temperature, is followed only by very slight anaemia, dullness and thermic manifestations more or less separated, which sometimes are the only signs of the infection. These three clinical types belong undoubtedly to only one affection ; they are experimentally reversible. Inoculation of one may produce either of the three. The name "anaemia" does not really apply to the nature of the disease.

The disease has been transmitted experimentally to donkeys. It is transmissible by the digestive tract, and an important observation is that animals which seem to have recovered from the chronic form of the disease retain still an infecting power.

Unfortunately, however, the microbe, cause of the whole trouble, remains among the large class of the *invisibles*.

* * *

THE CLINICAL DIAGNOSIS OF BOVINE TUBERCULOSIS.—Under the heading of "Studies on the Clinical Diagnosis of Tuberculosis in Bovines," Mr. J. Hamoir has presented in the *Annales de Bruxelles* the results of observations which are of good value and treated the subject under two principal points of view.

The first considered is vertebral tuberculosis. From all opinions, if osseous tuberculosis is rare, that of the vertebrae is rather exceptional, at least the recorded observations are very few. Alone Mr. Hamoir has been more fortunate than any other practitioner, as in a few years he has witnessed four cases, has observed the same symptoms and found similar lesions.

It is in the dorsal region that the disease seems more specially localized, the lesion affecting exclusively or principally the body of the bone, although the annular portion has been found diseased by Morot. A fact, important to the point of view of inspection of meat, is that the alteration on the bone is

not visible on the compact tissue—it is only the spongy structure, and the longitudinal section of the bone is necessary to expose it.

The symptoms by which one might suspect tuberculosis during life can be briefly resumed as follows: "Disturbance in locomotory actions, not characteristic at first; the animal is stiff, the hind-quarters seem to be badly attached to the fore parts of the animal, during the execution of the movements propelling the body forward. In some cases there is only a difficulty in turning. Later on, in walking, the dorso-lumbar column has lateral and supero-inferior flexions, which are abnormal. The animal waddles in walking." There is a difference between this *pitching* of the body and the *rolling* of the meningo-spinal tuberculosis. The dorso-lumbar column is very sensitive to pressure, and as the disease progresses the animal has difficulty to get up, the walk becomes staggering and decubitus is frequent and long. While urinating, the animal literally drops down on his hocks and assumes the position of young dogs micturating. After a month or six weeks the animal remains constantly lying down, bed sores take place, and the general condition breaks down. Anyhow, during that time, other symptoms have developed which assists the conclusion of a diagnosis. But at the beginning that is impossible, the manifestations being attributed to a violent blow on the back, a fall or any other traumatic cause.

Such was the case in the first that Mr. Hamoir observed. In the second case he hesitated in his diagnosis. In the third he was positive. In the fourth he was doubtful. Tuberculosis, however, was found in all.

* * *

The second part of the work of Mr. Hamoir has for object chronic meteorism, which according to many is a syndrome of great signification in the diagnosis of tuberculosis and which is attributed to the tubercular hypertrophy of the lymphatic glands situated between the two pleural sheaths of the posterior mediastinum. The symptomatic tympanites of mediastinal ade-

tuberculosis is typical and the characters specific. "It occurs suddenly, without known alimentary cause. The swelling at the flank is remittent, or more rarely intermittent. There is absence of all other digestive troubles, rapid dropping of the rumen after puncture or œsophageal catheterism. Complete inefficacy of medical treatment." Those symptoms are seldom deceitful. The opinion of Guittard differs from that of Hamoir. Guittard says: "Tympanites which is not accompanied with arrest of rumination or with characteristic symptoms of diseases of the digestive tract, belong to tuberculosis. When tympanites is great and rumination takes place but sometime after a meal, tuberculosis is principally thoracic. When tympanites is well marked and rumination is neither disturbed nor arrested tuberculosis is principally abdominal. In all cases where the diagnosis is doubtful, the symptom tympanites, not belonging to any gastro-intestinal affection, is characteristic."

In conclusion of his remarks, Hamoir relates seven cases confirming the data of his clinical studies, and among which there is one where the glandular tuberculosis had produced such hypertrophy of the glands that the animal died by suffocation. He also relates one where the chronic tympanites gave rise to an error of diagnosis, that of tuberculosis, which was complicated by diaphragmatic hernia of the reticulum.

* * *

TRANSMISSION OF SYPHILIS TO HORSES.—In December last, before the Medical Society of Berlin, Mr. Piorkowski made a communication on the results he has obtained on the transmission of syphilis to animals and principally to horses. He has operated by injections into the veins and in the subcutaneous cellular tissue. The doses he employed varied between 5 and 10 c.c. for each injection. In one horse, four weeks after inoculation, and without having had any primary accident, he observed the appearance of some hundred papulae over different parts of the body. These little nodosities which looked like "summer sores" were covered with thin scabs, which were scraped off, followed by crusts. Several weeks later, the sub-

glossal lymphatic glands showed a marked swelling, not painful. Outside of this, there was nothing, the animal was in perfect health and its blood inoculated to other animals to control its virulence, gave rise to no results.

Does this prove that syphilis can be transmitted to the horse? Notwithstanding their clinical and histological resemblance to the pimples of the summer season, the cutaneous papulae in this observation existed, at least not in a warm season, and their bloodvessels showed in their adventitious wall a marked infiltration of small cells, without alteration of the endothelium. On the other side, the absence of an initial chancreous lesion at the point of inoculation seems to upset the possibility of a syphilitic infection.

In operating in the same manner with the rabbit, Mr. Piorkowski has obtained on the inoculated spot, at the ear, an eruption and an adenopathy of the maxillary glands, while a witness inoculated with normal human blood had only given negative results.

The question is still being studied.

* * *

VETERINARY LITERATURE.—A little bibliography to finish. The "Veterinary Encyclopædia" of Prof. Cadéac, of which I have in these pages so often spoken, has had recently a new addition. "The Surgical Pathology of the Skin and of the Bloodvessels," by Prof. Cadéac, has just been issued. Published by the house of Baillière et fils, the work is presented in the same neat aspect as the previous volumes and forms another good addition to the collection. Under the heading of "Skin and Subcutaneous Tissue," we find, first, solipeds, with the various traumatisms; then the erythemas, microbian dermatitis, the foreign bodies, epithelial growths, tumors and parasitic dermatosis. In a second chapter the similar affections in cattle are alluded to, and in a third chapter those in dogs and birds. The consideration of the pathology of the bloodvessels treats of veins first, with their traumatic lesions and varicous conditions; afterwards arteries and finally lymphatics. Under a chapter of

lymphatic glands, adenitis is considered. Written without pretension and exceedingly practical, this excellent little volume of a little over 400 pages will no doubt be welcome in the library of veterinarians. All of it for the modest sum of 5 fs. (one dollar).

Speaking of communications I received from the States, I mentioned lately that I had found in one of my mails the annual catalogue of the publishing house of Mr. A. Eger. To-day while I am speaking of "Cadéac's Encyclopedia," I cannot refrain from asking how the house of A. Eger can advertise as "in preparation," "to be ready very soon," a work translated by D. F. Hannigan, B. A. L. L. B., and A. H. Baker, V. S., Dean of the Chicago Veterinary College, when translators and publishers have not received the authorization from the original authors nor from the French editor. The work is advertised at four dollars. Is that the excuse?

* * *

I have also received from P. A. Fish, D. Sc., D. V. M., Professor of Veterinary Physiology and Pharmacology at the New York State Veterinary College, Cornell University, two little souvenirs. One is entitled "Veterinary Doses and Prescription Writing," the other "Abstracts of the Work Done in My Laboratory."

First of all, I must congratulate the Doctor. If I am not mistaken, he is the first one who claims this title, "professor of veterinary physiology." A veterinarian himself, I am sure he is the fitted person for such a chair. He is the only one in all my catalogues, and I have plenty who are entered as such. Of course, many of the gentlemen who fill that chair in our veterinary schools teach physiology, but do they teach veterinary physiology, is another question.

To return to the souvenirs of Prof. Fish, I will say that his little "Veterinary Doses" is a neat attempt, a bashful entrance for a much more important and valuable work. Yet, small as it is, many interesting points will be found in it, and as a means to get ready and quick information upon the doses of drugs to

be given to a horse or a cow, a sheep or a swine, a dog and of course a cat, the busy practitioner will find it necessary to always carry it in his pocket.

The abstracts contain the programme of the department of Physiology and Pharmacology of which Dr. Fish is the professor, with articles of work carried out in his laboratory. One on echinacea in veterinary practice, another on the digestive action of bile in some domestic animals, a third on the use of calcium sulphide in the treatment of poll-evil and fistulous withers, and finally one on the effect of certain drugs upon blood pressure and cardiac inhibition in the horse. We are promised by the Doctor the publication of other abstracts. We all will welcome them, I am sure. At last veterinary physiology has a representative in America.

A. L.

THE EDUCATIONAL PROBLEM.

The burning question before the veterinary profession today is the harmonizing of the institutions granting diplomas in this country. Looked at from whatever viewpoint, the conviction is forced upon the observer that substantial progress is difficult and delusive under the system which prevails at present upon the North American continent. The profession has successfully met every problem in the past; it will find a way to circumvent the present crisis in our march toward the higher plane which we are entitled to occupy by virtue of the importance of the science and its relation to other learned professions. To accomplish this readily and with as few errors and hinderances as possible it must receive from the representatives of the organized profession constant thought and agitation. The logical forum for the consideration of this matter is the convention hall of the American Veterinary Medical Association. All other channels are either contributary or the result of the action taken there. For instance, the discussion in the professional journals, or by contributed theses before State or local veterinary associations but mould sentiment and stimulate activity in the members of the National Association. The suggested reor-

ganization of the Association of Faculties to deal directly with the schools is secondary and a result of the action taken by the central body, which includes upon its roll the great majority of the men who do things in this country. It must, therefore, be regarded as the source from which all real national reforms in the educational, legal and moral status of the veterinary medical profession must be derived.

An impetus of considerable magnitude was given this problem at the St. Louis meeting last August. The report of the Committee on Intelligence and Education reviewed each school and analyzed its announcement in the light of the fulfilment of its claims. Dr. Liautard in his contributed paper, "Needed Reforms in Veterinary Education," made a somewhat extended journey among the catalogues of the various colleges, and his inquiries as he travelled from school to school convincingly demonstrated that there was little in common between many which claimed a place in the galaxy of American veterinary colleges. In the discussion which followed the reading of these two important documents, it was shown that all of the members were not of one mind as to what could and should be done to bring the divergent conditions into a more harmonious state—to the end that a man seeking his professional education shall receive a definite technical training whether the school be located on the Atlantic Seaboard or the Pacific Slope, in the Canadian Dominion or in the Southern States, or elsewhere, and thus insure that the title of "veterinarian" will stand for a known quantity without reference to the school which conferred the degree. No real reform can maintain which fails to grasp this consummation. The means of arriving at that end constitutes in our judgment the greatest problem which has yet confronted us.

To meet it will require the best thoughts of the best minds in the profession. It will require magnanimity, self-abnegation, conservatism, liberal mindedness, and diplomacy. It cannot be accomplished all at once. A little this year, more the next. The first turn in the wheel was given at St. Louis; an-

other cog must click at Cleveland. It behooves every member of the A. V. M. A. to give the subject earnest thought, so that when the subject is approached he may have well-matured ideas to contribute to the discussion.

TENNESSEE IN LINE.

Just before the REVIEW forms closed for this number word reached us that the veterinarians of Tennessee have succeeded in placing upon the statute books a law "regulating the practice of veterinary medicine and veterinary surgery in the State of Tennessee, and to define and punish offenses committed in violation of this Act."

To those acquainted with conditions in the South, the work of the very small and scattered profession in Andrew Jackson's home appears most stupendous, reflecting the greatest credit upon our Southern *confères*, and speaking volumes for their energy and influence. Dr. George R. White, of Nashville, who framed the bill, and was its recognized champion, worked incessantly for it night and day for more than a month, never relaxing until the Governor's signature was affixed to the document. Taken in connection with his M. D. degree from the University of Nashville, and his extensive practice, he has evidently had a strenuous winter's work.

Missouri ! Maine !! Tennessee !!!

Next !

Will it be Nebraska ?

A YEAR OR MORE AGO we predicted that the persistency of the Maine Veterinary Medical Association in its struggle to secure a law regulating the practice of veterinary medicine in that State could not fail to be rewarded by success. Just a little bunch of devoted men, but with the courage born of abiding faith in the justice of their cause, they forced respect and secured recognition, by gradually enlisting the aid of influential legislators, until finally this winter they bent every energy and rested not until they placed on the statute books a registration bill

which is quite satisfactory to them. What has been done in Maine, can be duplicated in every State not already in possession of a veterinary law, if only the Maine spirit prevails. Full details will be found elsewhere in this number.

"RUPTURE OF THE PRE-PUBIAN TENDON IN THE PREGNANT MARE" is the title of an illustrated article in course of preparation by Dr. W. L. Williams for REVIEW readers, and will be ready for the June number.

MARYLAND BEGINS VON BEHRING'S VACCINATION AGAINST TUBERCULOSIS.—The following special dispatch to the Baltimore *Sun* explains itself: "College Park, Md., April 12.—The Veterinary Department of the Maryland Agricultural Experiment Station began the practical application on Monday of the method of immunization of cattle against tuberculosis known as the von Behring method. Prof. E. von Behring, the originator of this method, is director of the Marbourg Institute for Research Against Infectious Diseases, of Marbourg, Germany, and originator of the method of treatment of diphtheria by anti-toxin in human beings. At this time no claim is made for it as a curative means, but exclusively as a preventive, through the production of an increased resistance to tubercular infection. Calves under 12 weeks old receive a small amount of the immunizing substance directly into the circulating blood and 12 weeks later receive a second dose five times larger than the first. These two inoculations increase the resistance and cattle are said to be immune for the rest of their lives to tubercular infection. The immunizing substance is living bacilli of human origin and nonvirulent for cattle. In Europe over 15,000 head have been treated by this method and the results have been highly satisfactory. Dr. S. S. Buckley, veterinarian of the Experiment Station, and Dr. Wilfried Lellman, professor of pathology at the New York-American Veterinary College, began the work on five calves of the Maryland Experiment Station herd on Monday, and others will receive the first inoculation this week. It is intended to extend this method as far as possible and closely observe its influence upon the eradication of the disease. Although the method has been in use for some years, it is only recently that its application has become widespread, and years, of course, must elapse before its bearing on human tuberculosis will be apparent."

ORIGINAL ARTICLES.

GOVERNMENT INSPECTOR OR NOT?

THE GOVERNMENT INSPECTORSHIP IN THE UNITED STATES
DEPARTMENT OF AGRICULTURE AS A CAREER.

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There has never yet been, as far as I am aware, a complete exposition of the theme: the government inspectorship in the United States Department of Agriculture as a career. At the outset I wish to disclaim any intention to be an advocate of this or any other sphere of activity. In my reflection on this subject I have attempted in every turn of my thought to apply the rules of scientific investigation in a rigorous analysis of every phase of the subject which has occurred to me in my contemplation, in the hope that a dispassionate and disinterested treatment of the theme may appeal to those who love the truth for its own sake and who wish to look into the subject sagely and calmly. Advocates are apt to distort the truth for personal ends. The office of the scientific mind is to search for the truth regardless of consequences. The scientific man investigating even this kind of a subject must, in the process of his inquiry, examine every nook and cranny that no points which may illumine the theme as a whole may be lost.

Let us make an examination then, first, of the complete meaning of the phrase "Government Inspector"; second, let us see what there is of importance or dignity in the work of inspection; third, let us inquire what the advantages of an inspectorship are; fourth, what its disadvantages are.

I. INTERPRETATION OF THE PHRASE, GOVERNMENT INSPECTOR : WHAT THE PHRASE EMBRACES.

A. *Why the term "meat inspector" does not suffice.*

There is nothing more disquieting to the temper nor more deluding to the intelligence than the loose use of a term or

phrase. From year to year the veterinary colleges and the students thereof go on speaking of "meat inspection" and "meat inspector" without any clear understanding of the phrases they are using and with confused notions of what inspection, as it is understood by the Department of Agriculture, really means. The truth is, the phrase "meat inspector" had best be abandoned altogether and the longer, but clear and more inclusive term, Federal veterinary inspector, be substituted for it. Meat inspection, the examination of carcasses or parts of carcasses intended for food for diseases which make them condemnable, is, as we shall soon see, only a small part of the work that may be required of a Federal veterinary inspector. Many forms of the work of a Federal veterinary inspector are in no sense meat inspection. The common people in the packing centres and elsewhere speak of the Federal veterinary inspector simply as "government inspector," which contradistinguishes him from mercantile inspectors employed by the packing firms in various branches of their work. In this paper for convenience we have adopted the same term; for in the places and at the times when it is used it is sufficiently suggestive and does not mislead those who use it. On analysis we will find that the phrase "Federal veterinary inspector," or "government inspector" may mean:

1. An inspector, ante-mortem, of animals in stock yards at a packing centre;
2. An inspector of carcasses or their parts, that is post-mortem inspection in a packing house;
3. the assistant chiefship or chiefship of the government work in a packing centre;
4. A higher official in the Inspection Division of the Department of Agriculture;
5. A U. S. animal quarantine officer in the interior of the country, on the coast or abroad;
6. Under a slight change of name, a worker in the pathologic, biochemical, zoölogic laboratories at Washington;
7. A dairy inspector.

B. The government inspector in a packing centre. What the term government inspector may mean in a packing town.

First of all the term government inspector may mean a veterinarian who inspects animals before death in the stock yards of a packing town. The Federal law reads: "an ante-mortem

examination shall be made of all animals arriving at the public stock yards and intended for slaughter at abattoirs at which this Department has established inspection when said animals are weighed; or, if not weighed, this inspection shall be made in the pens." Of course under the necessities of trade not all animals which come into a public stock yard at which inspection has been established are sold and slaughtered in the adjoining abattoirs. The stock yards are always considered by the Department infected so that the interpretation of the law has come to mean that all animals whatsoever, that come into the public stock yards and are placed in the pens, whether they are sold or not, are to be inspected. The ante-mortem inspection of animals by government inspectors for diseases other than those which are infectious for animals or man is a valuable part of the Federal veterinary work, inasmuch as it eliminates the effects upon man's physical organism of diseased condition arising from the consumption of meats from sick animals or animals in extremely low condition. But the ante-mortem inspector of animals is more than a guardian from such diseases; he is a quarantine officer as well. He has in mind two things: infections coming into the yards; the prevention of infections spreading from the yards. The rule that all animals which alight in the yards should and must be inspected is necessary for several reasons: it being granted that the yards are infected, the precautions which the ante-mortem inspector must take are that no animal found infected with a contagion shall be allowed to pass from the yards upon further travel to other points or markets; that it shall be sold and killed subject to inspection after death. Thus in the case of a herd of swine coming into the yards infected with hog cholera it is the duty of the ante-mortem inspector: to detect the disease when the animals land, to report the lot, to forbid the passage of the lot from the yards, to require slaughter under post-mortem inspection at the adjoining abattoirs, to order the disinfection of the cars in which the lot came. In the same way when Texas fever is found in cattle coming into the yards the same process obtains.

In the second place the term government inspector may have the simple meaning of meat inspector. The government inspector here has one function, to wit: the inspection of carcasses or their parts that he may separate meats, which, under the Federal regulations, are unfit for food from those fit for food and to see to the disposal of the unfit according to law. Roughly speaking the diseases sought for may be placed in two groups: meats containing diseases transmissible to man; meats in such a state of disease, which, though the disease is not of microbian origin, make them unfit for food. The chief difficulty a post-mortem inspector has is to decide just what is fit for food and what is unfit. Much good sense and calm judgment is needed. A careless and wilful condemnation of a carcass that is only in an incipient state of a disease which is on the condemnation list is considered an unwarranted destruction of property and subject to protest from the owners. Consequently in recent years there has been added to reprints and revisements of the original inspection law a large body of interpretative details to which the inspector must refer to settle his judgment as to whether a particular carcass he has tagged is condemnable or non-condemnable. The chief business details of the day's work for a post-mortem inspector are: the singling out carcasses to be condemned; tagging the condemnable and sealing tags on such carcasses; locking offal carcasses in the government cage; tanking carcasses which are condemned either for offal or lard; keeping notes on the amounts killed, the number condemned, what for, with account of lesions found and nightly reporting these details to Washington.

The chief and assistant chief of the government inspection in a packing town are also government inspectors.

The function of the assistant chief should be clear. He is an administrative officer or assistant to the government chief of a station, the latter called officially the inspector in charge. The assistant chief of a station is commissioned direct from Washington, and may be appointed from any station—set of stock yards and abattoirs in a packing town—which has Federal

inspection at any point in the country. The basis of choice is: length of service, the man's record during his service as assistant inspector or full inspector under assistant chiefs of stations and chiefs of stations elsewhere. His work is extensive and his path often a thorny one. With the counsel and agreement of the chief, or inspector in charge, he has : 1. directive power, that is he gives orders where inspectors, stock examiners or taggers are to work, or, in other words, states what work in a station each is to undertake. 2. He has the right of supervision of the work, that is he goes around to all parts of the stock yards and all parts of the abattoirs at times unknown to government employés and studies the efficiency of the government inspectors, stock examiners and taggers; he looks to the promptitude of the men; he guards against carelessness on their part; he gives notice of the new orders from Washington; he passes upon carcasses condemned. 3. He has the right of transfer. Transference of the inspectors at a station by a system of rotation back and forth from inspection before death to after death, or vice versa, or from one kind of post-mortem work to another is part of the regular system of the management of the employés. Thus a man may be a month or two inspecting cattle post-mortem, a month or two on sheep or hogs, or in the yards on ante-mortem work. Constant rotation of the inspectors is the rule. The reasons for the system are: it trains the men in all forms of inspection and gives them experience in each kind of work; it prevents monotony, for a change sharpens and energizes the mind; it gives an opportunity for the inspector to study a variety of diseases and the details of the law as it is applied to them, in other words the inspector becomes familiar with the diseases to be looked for as required by law; rotation of the men also keeps them independent of the packers or whomsoever may desire to get an inspector under his wing by concessions or favors, for by rotation the inspector cannot become too friendly or too well acquainted; rotation also teaches policy and finesse in dealing with men, for he sees the methods and schemes of men and their ways and

dealings, learns how often silence is golden and the wisdom of prudence ; lastly the system of rotation serves the people's interests by tending to clear up false impressions and enabling the inspector to be sane on points where, in his work, the large interests of the public are at stake. The transfer of the men from place to place in a station is at the will of the assistant chief after counsel and agreement of the chief.

In the station there is only one officer who is above him, the chief or inspector in charge of a station. The function of the chief must be obvious from the name : he is the officer in complete charge of all the government work at a station. What kind of men are chiefs, may be asked. They are the older and wiser heads among the men in the Inspection Division of the Department of Agriculture. A chief usually has had from five to fifteen years of actual experience in the civil service work of the line in which he is working ; he has seen every side and phase of the work ; knows the prudence with which the law is interpreted ; has learned the necessity of policy in dealing with the various sorts and conditions of men in the business ; in years he is older than his fellow-inspectors ; he is a veterinarian with considerable knowledge of what may be called applied pathology, or knowledge of pathology in its application to industrial needs. He is commissioned from Washington and is appointed from among the civil service men strictly on length of service, actual adjudged merit, and on a study of his known characteristics which assure success.

The official capacity and duties of a chief must be explained. The chief is the government's autocrat or charge d'affaires at an official station. He is charged with the application and enforcement of the law. The only place to which he looks for orders is Washington, with which he is in constant communication. His word is unquestionably final ; in all matters pertaining to the placement and transfer of all government officers under him in the official station ; in all questions of dispute whether given carcasses should be condemned or whether certain animals are condemnable ; in all questions raised by commission men, pack-

ing house authorities or inspectors as to the interpretation of the law. Some of his duties, therefore, are: direction of all government employés in a station; to act as intermediary and spokesman for Washington from which all mandates come; to interpret and administer the regulations. He gives direction on the proper meaning and understanding of the regulations. He studies inspection methods, notes down improvements possible, recommends changes in methods of inspection when they seem to be for the good of the service. Moreover he is an executor of the law. He sees to the enforcement of the ante-mortem regulations. He enforces the post-mortem regulations. He is responsible for the labelling of all carcasses and their parts which have passed post-mortem and for the stamping of all parcels containing inspected meats. He is executor of the law with regard to shipments of meat interstate or export, for he is responsible for the sealing of cars containing inspected meats which are making for other points in the States or for the coast. Furthermore he sees to the enforcement of the animal quarantine laws. He gives notices of the movements of animals from his station by letter or telegram to inspectors in charge of stations for which animals have embarked. He has charge of the disinfection of cars coming into the yards which have contained animals possessed of contagion. He settles questions of required sale, for example in cases of scabies and Texas fever. When animals are dipped in his station he sends out notices of the movements of such animals, if they are to be transmitted elsewhere, to inspectors in charge.

A summary of the points thus far covered reveals the large meaning of the phrase government inspector as opposed to the phrase meat inspector. We have found that a government inspector in the employ of the Department of Agriculture may be an examiner of animals ante-mortem or post-mortem, an officer supervising this work in all its phases or an officer in charge of all government men in the Department of Agriculture at the station.

C. The government inspector as a higher official in the Inspection Division of the Bureau of Animal Industry.

The rule of transfer whereby men are kept in rotation in a station that the value of the men may be studied and that they may see all sides of the work applies in other ways besides those I have already mentioned. Besides being rotated from one killing floor to another or from one abattoir to another or from an abattoir to the yards, the men may ask for and receive transfer to another official station, East or West, as the case may be. It is seen by the authorities who grant such transfers that allowing the transfer of individuals to other parts of the country : tends to make them more satisfied ; sometimes improves their health, gives them a chance to study, breeds contentment and in the aggregate tends to the good of the service. Again, the rule of transfer applies in yet another way. Men may be asked to go to such and such a place or they may be given orders to go to such and such a place because they have been found fit and the change would be for the good of the service.

In this way the rule of transfer applies to higher officialdom. Men who show efficiency and aptitude by reason : of faculty ; of knowledge of the work as a result of college training and its application in experience ; of policy in dealing with men and ability to get along with men ; of fidelity, trustworthiness and obedience ; of business capacity ; of years which ripen the judgment ; of a desire to excel, of a desire to lead, of a desire to give play to ambition—such men are marked for higher office. It is this kind of a man who has seen all sides of the work, who has gained the confidence of the chiefs by reason of real worth, who has had a long stretch of experience, the reports of the efficiency of whom by the chiefs have always been high—it is this kind of a man who, when an opening comes, will be asked to take charge of a station somewhere.

Where are such men found and where are they placed ? Such ambitious spirits live in hope and expectancy of being made inspector in charge of a station. Because of the opportunities for ample experience this caste is usually found in the

stations at the great packing centres. Obviously men of the right kind at such stations stand the best chance of promotion. In this way a man of five to seven years' experience may be given charge of one of the smaller stations like some of the stations in Iowa. Later with increasing efficiency and proven ability as a chief he may be sent to a larger station. The Department reserves the right of transfer of efficient men, of whatever grade, from one station to another. Thus, in the movement upward, a man may be transferred to the chiefship of a small station, of a larger one—and so on, whenever and wherever the good of the service seems to call for a certain kind of man.

Higher officialdom embraces many kinds of positions, all in their way important and deemed desirable by the ambitious. There is, first, the chiefship of an important packing centre. Many of the big cities like New York, Chicago, Philadelphia, Boston, St. Louis, and others which are cardinal points in the export or interstate live-stock or meat trade, are official stations with corps of officers of the Bureau of Animal Industry, Department of Agriculture, in them. Each corps must be headed by a chief. These are the berths desired by the ambitious. There is, second, the officials in charge of export animals at the sea ports. The government, at ports of embarkation like New York and Baltimore, has stationed officers whose duty is the supervision of the export trade in live animals. The provisions of the law are definite on points with regard to air space, head stalls, spacing or distance between animals. The provision is for the safety, healthfulness and comfort of the animals; it is the enemy of cruelty and the safeguard against loss of animals on the high seas. Capable veterinary officers are therefore necessary at the sea ports to attend to obedience to the law on the part of captains and owners of sea-going vessels carrying live stock. There are, third, some foreign employés of the Bureau of Animal Industry. Some government veterinary inspectors are needed at foreign ports like Liverpool and London and Glasgow to inspect high-bred animals intended for Ameri-

can import. Such animals must be strictly examined for infectious disease as a preventive measure. A desirable position this, thinks the ambitious man. Fourth, government inspectors are needed near our Canadian and Mexican borders. There is a constant influx of animals from these countries. The great American packing companies are opening immense plants in Mexico and absorbing the Mexican live-stock trade. Animals are crossing the Canadian boundaries so that there and on the Mexican frontier the administration of the animal quarantine laws must be attended to: but by whom? By trusty men whom the Federal government has learned by experience can be depended upon to take charge. Fifth, all animals entering seaports to enter the American live-stock trade must be quarantined at the port for a period that they may be watched and that importation of foreign infection may be prevented. Men of excellence in character, experience and mentality are needed and are used as government inspectors in charge of these quarantine stations, notably that of Athenia, N. J., which is the quarantine station for the port of New York. There is, sixth, an opportunity for the ambitious and the capable to rise to the position of travelling inspector with duty to study the methods of application of the inspection regulations, search for improvements, supervise, under Washington, the corps of government inspectors of the Inspection Division throughout the country.

D. The government inspector as a United States quarantine officer; inspector, Quarantine Division, Department of Agriculture.

First of all what is the Quarantine Division, what is its function and from whence does it obtain its men? The Quarantine Division is a separate division of the Bureau of Animal Industry, though of course part of its organic unity, supported by the bounty of Congress by especial appropriations. The conduct of the division is vested in a separate officer or chief whose function, under the Chief of the Bureau and the Secretary of Agriculture, is to execute the United States animal quarantine laws pertaining to the prevention and suppression of contagious diseases

among animals. The chief of this division, as is true of all his subordinates, is a veterinarian. The men to do the work of this division are obtained chiefly from among the government inspectors of the Inspection Division, and they are chosen on the basis of experience in packing houses ; the choice favors unmarried men ; older men, who because of years, experience and presentation of a dignified bearing can command respect ; men with a taste for the work.

Secondly, what is the work of this division ? Its work aims at the control and diminution of contagious diseases already existing in animals, with the purpose of final eradication. A moment's reflection will discover how extensive its work must be. There is the Texas fever quarantine, sometimes called the South-eastern and South-western quarantine, the purpose of which is the prevention of the spread of Texas fever above, that is north of, the Texas fever line ; to push the Texas fever line further south ; to work for the ultimate suppression of the disease in America. The government inspection which works for these ends is carried on through the aid of travelling quarantine government inspectors who work near, either above or below, the Texas fever line, investigating the extent of the disease near the line. The inspectors make complete canvass for the disease in counties, districts or townships under orders from Washington, report in full the minutiae of these canvasses. From knowledge thus obtained quarantine orders are sent out to the agricultural regions. The line is thus pushed continually southward. For the purpose of further aid towards this end, U. S. quarantine stations are established on or near the Texas fever line where government inspectors are permanently stationed. These stations are, as it were, centres of circles, the circle being the region round about a station ; from the station the inspector keeps in touch with pathologic conditions in the region and reports his findings to Washington. There is, again, the quarantine against scabies in sheep, the object of which is to collect information on the extent of the disease among sheep in the infested regions, to keep watch for its appearance in new places ;

to scatter information among the owners in the region; to prevent the movement of scabby sheep except under U. S. regulations; to attend to the dipping of sheep for the destruction of the mites. The work is carried on chiefly in the Central and Western States by government inspectors sent to reside in the infested regions and by the aid of government travelling quarantine inspectors. There is, further, the quarantine against scabies in horses carried on along the same lines among solipeds in the Northwest and West. There is, furthermore, the great work of the quarantine against cattle mange, the interest in which has recently been heightened by the Federal government's determination to take hold of the work of fighting against it. The might of the arm of the Federal government is now being exercised for the control of the disease because it was found that the lack of unanimity among the States where the pest existed dissipated whatever energies they did put forth against the disease. A study of the place and extent of this disease, the comparative futility of the confederated efforts of the State quarantine associations where the disease prevailed to attend to it, reveals the necessity of powerful exercise of Federal authority in these cases. There seemed to be an incapacity of individual States to control the disease; no united effort of a similar kind without a possibility of overlapping somewhere, and interfering with rights and authority of other States. Under a single leadership and a command looking towards definite control there could be exercised by the Federal arm a might which is impossible under State quarantine. The Federal authority has therefore assumed charge of the work for its authority granted by Congress in the national animal quarantine laws gives it the qualities and the strength which no confederated efforts of the States can possibly have. The method of the Quarantine Division of the Bureau of Animal Industry in this case has been to send United States quarantine inspectors to aid and abet the work of the States, to study the conditions, to watch for new outbreaks of the disease, to report all details, to dip cattle for destruction of the parasites, to exercise every effort for control

of the disease. The new Federal quarantine law of February, 1905, tends further to overcome the difficulties experienced under State quarantine in the Northwest.

But the Quarantine Division has another sphere: for the United States animal quarantine inspector may become either an emergency quarantine officer of the Department of Agriculture in the case new infections get a foothold in this country or he may be a quarantine officer empowered to prevent the introduction of new diseases among animals from Europe. That was a grave experience the nation had when pleuro-pneumonia was running riot among the cattle of the country in the seventies. More than anything else it was the astonishing value of veterinary inspectors employed by the Commissioner of Agriculture in that emergency, shown in the intelligent action against that disease which led to the foundation of the Bureau of Animal Industry in the early eighties. The experience was not forgotten so that when foot-and-mouth disease broke out in New England in 1902-1903 there were in the employ of the Federal government seasoned quarantine inspectors ready to take up the work at once of stamping out the disease. The rapidity and the ease with which the work was done was due to the employed intelligence of the Bureau. Besides being an emergency officer the quarantine inspector may be stationed on the coast to watch animals landing at the haven for importation of infection. The dread, for example, of rinderpest from the Philippines on one side and from Europe on the other impresses us with the usefulness of such a quarantine.

E. The government inspector's opportunities for entrance into other Divisions of the Bureau of Animal Industry, Department of Agriculture, aside from the purely Inspection and Quarantine Divisions.

The Bureau of Animal Industry, Department of Agriculture, in common with other departments of the government, is constantly, no doubt, on the lookout for men of marked ability to occupy positions of trust. Men with high scientific training; with the widened training in the application of the veterinary

sciences to the animal industries by reason of aptitude for this side of scientific work and long experience, or at least marked efficiency in the application of the veterinary sciences to agricultural conditions and interests, with knowledge of the work and how to deal with men shown in sagacity—a control of impulse—the calmness and discreetness of the sagacious man ; with dignity of deportment which adds weight to the effectiveness of a public character ; with elder years, for every one knows the impotency of the scientific opinion of youth upon the general public—for such men there is the opportunity of calls : to be heads of government work in the great packing centres : to take charge of important posts in the animal quarantine work in the Southwest, Southeast, West or Northwest. Yea, more, they are in line of progress and may be marked for choice ; as chiefs of the Quarantine Division at Washington, of the Inspection Division at Washington, or, as time goes on and men leave the work, as we must all leave it sooner or later, may be chief of the Bureau of Animal Industry itself.

It is the policy of the Department, a wise policy too, to choose men with some of these characteristics and experiences for office in other Divisions as well as the Inspection and Quarantine Divisions. The investigations of the Pathological Division at Washington, for instance, can better be carried on by men with actual experience in the field in quarantine work or at least capable of conducting independent research and inquiry into conditions on the spot when an infection may appear or a supposed infection terrorizes a region. Dr. Norgaard for example at one time chief of the Pathological Division had had inspection experience in Chicago ; the present chief, Dr. Mohler, has had experience in other Divisions of the Bureau where applied science is desirable. Experience in inspection work, knowledge of field work, invokes inquisitiveness in questions of practical scientific value. Experience with field problems makes a man more useful when the same man attempts to apply laboratory methods to the application of problems in infectious disease. Similarly men in the Bio-Chemic Division have

been called and are apt to be called in the future from among men in other Divisions. In the Zoölogical Division at Washington in the same way men with knowledge of parasitisms gained by experience amongst domesticated animals, particularly men of long observation in American parasitisms, can find place. The Dairy Division likewise has expert dairy inspectors in different portions of the country where knowledge of dairy bacteriology, bovine pathology, a mercantile knowledge of varieties of dairy products, domestic and foreign, and dairy standards are of weight.

Some things in the world which are perfectly obvious are not thought of at all. It is perfectly obvious that in a system of civil service, where the basis of promotion is solely that of merit, that any position in a Bureau like that of animal industry must be open to the meritorious character and mind—a mere truism. Somehow or other, though, this truism has not sufficiently impressed men interested in veterinary sciences. Letters have come to me constantly inquiring about the opportunities in the Bureau of Animal Industry for a career. After this calm consideration of the term "government inspector" or "Federal veterinary inspector," it must be clear that the term in the Department of Agriculture has a wide application. Indeed it covers most of the "berths" (as one of my old history masters, with a sense of humor, used to call all positions) in the Bureau of Animal Industry. When a man enters the Department as a civil servant he is required by law to wear a silver badge upon which is his number and title: "U. S. Inspector, Bureau of Animal Industry, number—" This is his title, and the title covers most phases of the work.

II. THE IMPORTANCE OF THE OFFICE AND ITS DIGNITY.

The importance of the office of government inspector has a bearing of which the thoughtless are not aware. What, for instance, is the relation of the government inspector to the general public? He is a civil servant, yet he is a civilian himself and an integral part of the general public. To the general public as a civil servant he has a specific duty, namely to serve the

interests of the people as a guardian of the public health. He must do this: by exercising every energy in dutiful watchfulness for those diseases in animals which are dangerous to man by reason of transmissibility or hurtfulness; by scrupulous conscientiousness in the disposal of such animals under regulation of the Department set down as the law of the land.

Again the government inspector has a relation to the trade and to the animal industries. The packers, for instance, have rights which are to be considered in questions of condemnation, as do commission men, shippers, the agricultural folk. The packers have their side of each question. They too are part of the people. Their business is to sell such carcasses or their parts as the people desire for food. Animals and all meat products are property. The duty of the inspector to these commercial people is: to use his discrimination and good judgment in the exercise of the prerogative of condemnation; to remember that the interest of the trade at home and abroad is served by the inspection, for the certification of the wholesomeness of the meats increases money value of meats as property. The inspector in this sense, or in this economic light, is an abettor of money values of property. Moreover to the animal industries of the country the government inspector is of inestimable value for his work tends to increase the national wealth: by preventing the introduction of exotic plagues from Europe through the government agency of seaboard quarantine; by preventing the spread of disease along the quarantine lines; by diminishing the parasitisms and infections in the regions under Federal quarantine; by stamping out infections like lung plague and foot-and-mouth disease. These effects of the dutifulness of the government inspectors in the prevention, diminution and suppression of disease enlivens the industry and tends to the rapid multiplication of property values.

Furthermore the government inspector has a relationship to the government which appointed him. Besides the twofold relationship to the people and the industries the inspector has obligations to the government he represents. Behind him is

the might of the Federal arm : he represents the majesty of the law. When he takes his oath of office he swears obedience to the law and willingness to enforce its enactments. As a representative of the sovereign power of the state he is to expect and to receive a ready compliance with his behests and his judgments in so far as they relate to the regulations the enforcement of which is his duty.

There is a certain dignity expected of a representative of the government. Since 1891 when the regular inspection service was started the work has grown in popularity. The reasons seem to be that there is a popular realization that animal inspection is a good thing in itself ; that the people believe that their reliance in the inspection is based upon the wise conducting of the work. The policy of the Bureau is clear. By the wisdom of caution, by conservatism of statement and action, by steady persistence in the education of the people in the value of its work the Bureau of Animal Industry, Department of Agriculture, has contrived, successfully, to impress the great American public of its high value to national wealth and public health. This is illustrated in its policy in the choice of inspectors. The earliest inspectors of the Department of Agriculture were political appointees and astonishing tales are told at this late date in the trade of their ignorance and unfitness : their position was graft ; they were well-nigh useless. Early in the nineties came in the civil service appointees. Nothing was known of meat inspection or animal inspection of the kind desired by the government in those days by the veterinary profession. Many of the poorest political appointees were still in office. To them were added men with no experience in the work at a time when an inspection service had to receive its upbuilding. Since 1891 there has been a gradual increase in the qualifications desired and further increase is expected. The policy of the Department in regard to inspectors has been to choose the best possible men for office through vouchers and civil service examination. The men, when appointed are : raised to higher position after proven usefulness ascertained

from chiefs under whom they worked ; are supplied with all the newest literature of the Bureau as soon as it is published that they may become acquainted with the newest thought and the latest scientific work in their line accomplished by the government. In other words the government looks upon the office of government inspector as a dignified calling. It therefore expects its inspectors to increase their knowledge and make themselves of more value to the people through their experience in abattoir or field work, through their experience of the ways of the world and the wisdom it gives, through actual study of books furnished. The inspector is not a lord over the people, but a servant of the people. An educated gentleman, the representative of the people, should be dignified. The army phrase applies to him : the government inspector's acts should be those becoming an officer and a gentleman.

III. THE ADVANTAGES OF THE POSITION OF GOVERNMENT INSPECTOR.

The advantages of the position of government inspector may be discussed under six headings : 1. The pay ; 2. The security of office ; 3. Time allowances ; 4. The advantages of transfer ; 5. The work ; 6. The treatment.

The pay for every inspector alike, in whatever division he works, at the start, is twelve hundred dollars per annum paid in monthly installments of one hundred dollars regardless of the number of days in a month. From this start there is a slow grading up system. After three years of service, providing efficiency reports of a man to Washington have all been satisfactory, on recommendation of the local chief of station, with the approval of Washington, the pay is likely to be raised to fourteen hundred per annum and the title of the man changed from assistant inspector to inspector. After that there may be an increase in pay to fifteen, sixteen, eighteen or even two thousand two hundred dollars a year depending on the usefulness of the man and the position he holds as assistant chief of station, chief of smaller or larger station or higher office. No money is paid for a man's travelling expense when he first takes office. After that,

however, when he is transferred, his full expenses, railroad, hotel and incidentals are paid in full. The latter is an important item, for example, when a man is transferred, as has happened, from St. Louis to New York, or St. Louis to Portland, Oregon. In the Quarantine Division all railroad and incidental expenses are always paid. In addition after six months' service the pay is likely to be raised to fourteen hundred a year whether a man has served three years in the service or not. The regulations under the quarantine law also speak in detail of the allowance expense for railroad : conveyance by vehicle or other conveyance, hotel fees and the like. Whenever a man is travelling on quarantine service, be the distance ever so short, his expenses are paid in full. The pay of the men entering upon scientific work of the Bureau at Washington is the same as for those outside of Washington, the difference being that these men get, as we shall see, greater time allowance.

The matter of the sureness of pay and promptness of payment is an advantage. Another advantage is the security of office. In a world so full of sudden and violent changes in fortune and circumstances it is an advantage to be reasonably sure that your tenure of office is secure. A man, of course, can never tell what Congress may do. So radical a motion as that to do away with the whole of the civil service by one "dread swoop" (as Thomas Carlyle's phrase has it) has been before Congress within memory. But the Department of Agriculture and its work is so knit into the warp and woof of the people's favor that the wise say there is little chance that such sweeping measures will prevail. With the ever increasing growth of the trade hardly any position can be more secure than that of government inspector in the Department of Agriculture. A man, however, is removable : on proof by chief of constant induteousness ; unfitness for office by reason of loss of faculties ; chronic complaint causing entire incapacity for duty ; complete inadaptability for the work.

The time allowances to an inspector are a great advantage : they consist in leisure allowances, holidays, furlough. During

the course of the year much leisure time—when there is comparatively little killing in the packing towns or where climatic conditions or season reduce disease conditions in the quarantine—is left at the discretion of the inspector. Of course at times his hours are very long, sometimes from very early morning to very late at night; at other times less. The off hours are at the disposal of the chief for direction to other inspection duty and he often enough may so direct. There is much time, though, left to the inspector which he may use as he pleases. Packing houses are usually in or near great cities where by virtue of the abundance of the pathological material constantly before his eyes, by reason of the libraries and laboratories a man's knowledge of science may be greatly increased. The government rightly frowns on practice because through it, while in the service, men may lose that complete independence of all men which is indispensable for a government official in the civil service. In addition to leisure two weeks a year, or more exactly a day and a quarter a month, is allowed by law under full pay to each inspector at such time as the head inspector may spare a man. But holidays are not cumulative as in the army. Again, without losing his position, a man may ask for a furlough without pay. In this way he can have a chance to study and travel abroad with impunity.

The rule of transfer is also advantageous. When a man becomes tired of a region he may ask to be transferred to another region. The government is willing, as far as possible, to be accommodating and give contentment. In case of illness, also, a man may, at his own request, be transferred to some region where government work is carried on and where climatic conditions may favor physical improvement. Thus certain tuberculous civil servants have been transferred to Colorado or New Mexico. Certain southerners after a period of experience in a packing town have been transferred by request to the southern quarantine. There is, for one reason and another, a constant migration of the men.

The work may or may not be difficult. Granted physical

capacity, willingness to bear with little difficulties that may arise, a desire and a determination to do the work consigned with obedience to directions of superior officers of the station, there is no insurmountable difficulty in the work. A good training coupled with affability to all under all circumstances, an unruffled temper and desire to serve all without sacrificing the sense of duty, shuts out great difficulties. The work is done rapidly; the diseases to be sought for are readily detected by the well trained. Experience increases the usefulness of the inspector and makes his work simple and easy.

The treatment a man receives depends upon himself. The man with self respect; the man who is conscientious yet who measures his words; who is extremely careful that his judgment on animals can be surely shown to have basis in sufficient facts, which may condemn or pass animals, has no trouble with anybody. Commission men, packers, stockmen, are very generally disposed to respect the government inspector. There is a disposition everywhere to obey the law providing facts can be shown in the case of each animal upon which judgment is pronounced. Courteous treatment is always given, as of course it should be expected.

IV. THE DISADVANTAGES OF THE POSITION OF GOVERNMENT INSPECTOR.

The disadvantages of the position of government inspector may also be written of under six heads: 1. Smallness of pay; 2. Tendency to sloth and loss of ambition; 3. Disadvantages of transfer; 4. Disadvantages of environment; 5. Lack of freedom; 6. Deadening influence of routine.

The smallness of the pay of a government inspector must at once be apparent. The rising scale, or the grading up, of a man on the pay roll is slow. While the pay for an unmarried man of character—thrift, frugality, temperance—is satisfactory, leaving a margin for saving or investment, the pay for a married man is only a pittance or a competency. Certainly little is left for luxury, still less for the commendable ambition of every man

to acquire personal property for wife or children. For several years beginning with the probationary period the pay permits only of closest economy for the married man. Compared with the large financial opportunities for those in what is called general practice, with the financial accounts of those who can combine teaching with practice the pay of a government inspector is a small reward for his efforts. Human nature is very curiously fashioned in some respects ; for instance, the financial standing of a practitioner is never exactly known. If he seems to be progressing and is spoken of favorably in a community the imaginations of people run wild as to his possible credit. But the pay of a government inspector is exactly tallied and known. To the question : " How much does he get ? " the answer can be, " Is that all ? "

The tendency to sloth and loss of ambition is unquestionably possible in the government service. The very security of office and sureness of pay together with time aplenty on one's hands leads to great temptations. Among unmarried men the tendency would be in a great city to spend every cent they have, to be heedless of new things in the science, new books, discoveries. The tendency would be to make a man a mere time server, to care only for momentary or temporary pleasures, to forget all knowledge except that necessary for daily tasks. This, it is true, is a sad comment on the weakness of human nature. The spark of ambition may go out. Thoughtlessness and heedlessness of everything except the bare necessities of the daily task may be the only concern.

There are certain disadvantages also in the rule of transfer. A man can never be sure of remaining in the place where he is first sent. He is subject to transfer to any point in the country where the stress of the work requires the authorities to direct him. It does not therefore do for him to become too closely knit to a locality for there is always a chance that his presence may be desired by the government at some distant point. Entire freedom of choice is not his.

Moreover there are disadvantages in the environment in

which the lot of an inspector is cast. Strong men may, do always, rise above the disadvantages of their environment. Yet the fact remains that in many cases the environment in which an inspector finds himself is not in itself stimulating to mental life, to ambition nor to character. Does constant association with butchers kindle intellectual ardor? Can the intellectual life, can the moral realities, find place among evil associations? Yes, they can. But the tendency is the other way. Does the isolation of the quarantine service stimulate the intellectual life? Yes, it should. But the tendency seems to be the other way.

There is also lack of freedom in the inspector's life. His will is largely under the control of the bureaucracy. A man when he is working for a bureau cannot come and go as he pleases. His time is bought by the government. His duty is to do strictly and unquestioningly as he is directed by his superiors. Work and hours change constantly; he cannot grumble. A return word to an order is insubordination and may count against him. He comes and goes as he is directed. "Go, and he goeth; come, and he cometh; do this, and he doeth it."

Lastly there is the deadening influence of routine. To be at the same place at pretty nearly the same time; to do the very same unvarying kind of work, tends to deaden the faculties. There is here, as in every case where sameness marks the work, the deadening influence of routine. Those who cannot rise above it may go into mental torpor.

With candor, with scientific calmness and conscientious regard for truth, I have now gone over the whole ground of the topic: the government inspectorship in the Department of Agriculture as a career. No one more than I recognizes the high value of this scientific branch of the public service. There is no necessity for a passionate appeal in its behalf. The work stands, and will always stand, on its merits. Robust character; mind lit up with intelligence; ambition which does and which dares to do, are in place here as in the formation of any career. Let men choose for themselves, government inspector or not?

ENZOOTIC CEREBRITIS OF HORSES.

BY DR. M. FRANCIS, TEXAS AGRICULTURAL COLLEGE, COLLEGE STATION, TEXAS.

During the late fall of 1903 and the early spring of 1904, there occurred a very fatal disease among horses and mules called "blind staggers." In the valleys of the Brazos and Colorado Rivers the losses have been very great. No accurate data can be obtained, but we estimate the deaths at 4000 to 5000 head. It is a nervous disorder, characterized by structural changes in the brain, which cause incoördination, delirium, coma, and usually death.

The disease attacks horses and mules that are highly fed. No cases have been observed among the old, emaciated horses belonging to negroes, nor among cattle, hogs or other animals. The greatest losses have occurred on the cotton plantations. It is the custom of the planters to have long, open feed troughs which they keep filled with corn, and permit the animals to eat as much or as little as they choose. Large racks are kept filled with alfalfa and sorghum hays. The water is usually from artesian wells. Hogs are kept in the pens with the mules.

There is a popular notion that the disease results from feeding mouldy corn. Another is that it is caused from inhaling the dust which occurs on mouldy, worm-eaten or weevil-eaten corn. If we examine the corn, we find several moulds, viz., a black one, which is probably *Aspergillus niger*; a green one, probably *Aspergillus glaucus*, and an undetermined pink one. We cultivated these three moulds on potatoes, and having secured pure cultures, we grew a large quantity of each in moist chambers on a sterile cornmeal-mush medium, at room temperature. After a dense growth had formed which required eight weeks, we gave them to horses.

Horse "A" received 200 grammes daily of the black mould. It was simply crushed in a mortar into a thin gruel and given as a drench for five consecutive days. No effects whatever resulted from it.

Horse "B" received in a similar manner the same quantity of the green mould, from which no sickness resulted.

Horse "C" received in a similar manner 200 grammes daily of the pink mould for three days, without result.

Mule "D" received 23 c. c. of the amber-colored water of condensation, which occurred in the moist chambers containing the black mould. No sickness resulted from this.

A guinea-pig received 1 c. c. of the same liquid subcutaneously without sickness resulting.

These results harmonize with those obtained by the experiment stations of Arkansas and Delaware some years ago.

The conclusion arrived at from our work is that the disease is not caused by the moulds described, but is very likely the result of the animals having free access to a labor diet when kept in idleness. When spring opened and all of the animals were put to work, the disease died out, though no change occurred in the food or the method of feeding.

Another theory is that the trouble is due to a germ. This view is somewhat strengthened by the report of Wilson and Brimhall, of the Minnesota Board of Health, who found in the cerebro-spinal fluid of horses, cattle, sheep and hogs, which had died of meningitis, an organism which they regarded as the specific cause of the disease. This is known as *Diplococcus pneumoniae*. Our search for such an organism was fruitless. We were unable to find bacteria in the blood, before or after death; or in the cerebro-spinal fluid; or in smears from the lungs, liver, kidneys, or brain substance. Every examination was negative.

The symptoms vary with the severity of the attack and cause us to recognize three types. In the acute type the attack is sudden and an animal that appeared in health a few hours before may be found dead. As a rule there have been no violent symptoms, no wounds on the body and no evidence of a death struggle. The animal is simply found dead. This suddenness of the attack and result in death has caused some suspicion to arise that the disease may be anthrax, but the bacteriological

examination of the blood and the inoculation experiments, reported below, show this to be impossible.

If we examine these dead ones we find nothing abnormal in the blood or viscera. In the brain, however, we find broken down areas in the white matter of BOTH hemispheres. The surface of the brain appears normal, but the lesions are some distance from the cortex and frequently communicate with the lateral ventricles. Smears from these broken-down areas show no bacteria or fungi, and the broken-down substance itself may be injected subcutaneously into horses, rabbits and guinea-pigs without result. No macroscopic lesions were observed in other parts of the brain.

In the semi-acute type the animals live from two to six days. They are usually found in a partially blind condition stumbling about in the yard. Hence the name "blind staggers." Some of them become violent and run at full speed in any direction, dashing blindly against fences or buildings. Others are not so violent, but walk in a circle, or wander aimlessly about, striking the blind side of the head against posts or buildings. These may stumble over wood piles, agricultural implements, or push blindly through wire fences regardless of the injuries received. At times they stop walking for a few minutes and stand with the head held sidewise, the eye half closed, the ear drooping, the lower lip pendulous, and with perhaps unmasticated food protruding from the mouth. No slobbering was observed. After some time, say five minutes, they walk as before, and finally come to rest in some awkward position, viz., the fore legs may be crossed; one may be extended forward and the other backward. There may be trembling of the muscles of the elbow or flank. They usually refuse to be led by the halter, and will pull back if some force is applied to the halter rope.

In the hindquarters we observe less trouble. The legs are controlled quite well, the tail may brush flies away, the anus is closed and sensitive, and the dung and urine are voided in a normal manner. In a word, we have not observed that early posterior paralysis which occurs in cerebro-spinal meningitis of

horses in the cities of the North and East. The temperature may be sub-normal, normal or somewhat elevated. The highest we have observed was 103° . As a rule no attention was paid to food or water. The violent stage is succeeded by one of stupor. The animal remains standing with the legs immovable and serving as props, the head hanging low, the eyes closed, the ears drooping, the tail motionless, until he falls from exhaustion. He may make some attempts to rise, but seldom succeeds. He lies on the ground some hours and dies.

If we examine the brain of these cases we usually find a broken-down area in ONE of the hemispheres. If the animal walked in a circle turning to the left, the lesion will be found in the right hemisphere ; and if he turned to the right it will be found in the left hemisphere. Probably 95 per cent. of these die.

In the mild type, the animal is noticed to be partially blind in one eye, but from some distance does not appear sick. It may eat fairly well from the manger, but is not disposed to walk about much in search of food. They remain quiet, somewhat stupid for about a week, then slowly regain their senses. Some will be stupid and dull a month or so and may have what appears to be a relapse, but they eventually recover without treatment.

No remedy is known for this disease. As we have remarked, some of the mild cases recover spontaneously and others manage to survive "treatment" of various sorts. We have given violent cathartics with some success. We have given a half gallon of raw linseed oil with an ounce of aloes, mixed. This was followed by subcutaneous injections of eserine-pilocarpine every two or three hours. Those in which we secured a prompt vigorous cathartic action recovered, while in those in which the action was indifferent, died.

We have tried bleeding from the jugular vein, say 4 to 6 quarts, but none of them recovered.

Various impossible remedies have been proposed and tried. We may mention large doses of quinine and whisky, strong

blisters applied between the ears, filling the ears with turpentine, applying irritants to the nostrils, such as ammonia, croton oil, snuff, hot smoke, etc., splitting the skin between the eyes and introducing saltpetre into the wound. We have even seen the frontal sinus bored with a gimlet to "let the water off the brain." It is unnecessary to say that these have all been worthless.

SOME TYPICAL CASES IN DETAIL.

Acute Type, Case I.—Dec. 15, 1903. Went to Mr. Carr's plantation near Beckham. His mules had been dying one and two at a time until fifteen have been lost. The food consisted of corn, alfalfa, and sugar cane tops, all of which were sound and good. They found a large fat mule dead in the pen this morning. He was apparently well last night. There were no bruises on the head or body and no evidences of struggling. The body was opened and all the viscera examined with care, but nothing abnormal was found. The brain was removed and large broken-down areas were found in both hemispheres. These contained a yellowish fluid with broken-down white nerve tissue mixed with it. One cavity had a capacity of 5 c.c., the other about 8 or 10 c.c.

Smears of this broken-down tissue were made and examined for bacteria, with negative results.

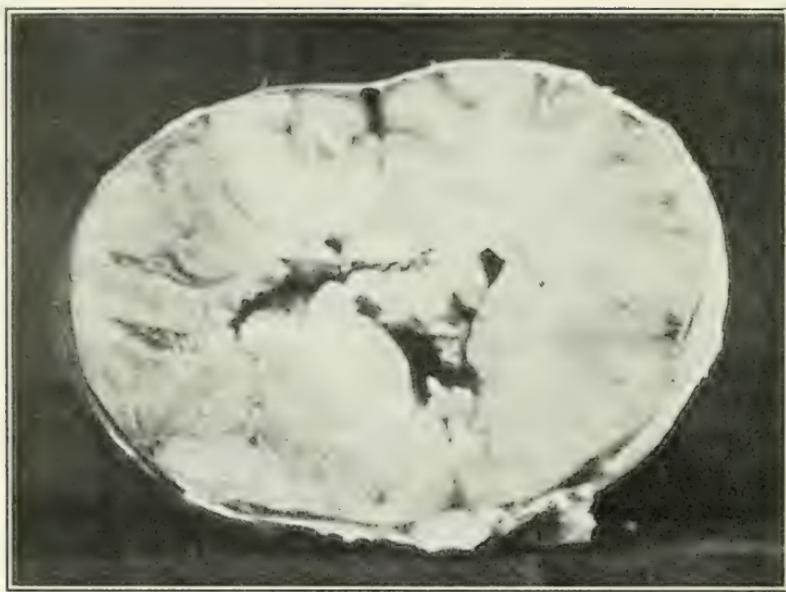
Semi-acute Type, Case II.—A large horse mule named "Bill" on the Smith and Carson plantation was found sick on the morning of January 12, 1904. He has been fed on corn, alfalfa and sorghum. He was driven about 10 miles during the forenoon, but about noon he became worse and could not be led. He walked in a circle, turning to the left, and bruised the left side of the head against posts and buildings. He was "smoked" with burning cotton, but became worse, got down about 2 P. M., and died about dark. The next morning the brain was removed and fixed in formalin. March 2, the brain was cut open. A transverse section at the optic chiasma showed the left hemisphere normal. The right one is larger than the left and shows a ragged cavity of about 10 c.c. capacity, which was above and

to the outside of the lateral ventricle. It extended to the ventricle and seemed to have discharged its contents into it. The diseased area extended to the surface of the hemisphere, but the brain substance was not actually broken down. See photograph.

Case III.—A brown mare owned by Mr. H., of Bryan, was noticed sick on Feb. 13. She desired to turn to the left, so that it required considerable effort to keep her in the road. The next day she was blind in the left eye, would stumble over obstacles and became dull and stupid. Several remedies were tried without benefit and the animal gradually became worse and died Feb. 15. Soon after death the head was cut off. There was some haemorrhage in the spinal canal outside of the dura mater. Inside the dura we found a yellowish fluid containing white flocculent masses. This was collected in a syringe and $1\frac{1}{2}$ c.c. injected subcutaneously into a horse, $\frac{1}{2}$ c.c. into a rabbit, and $\frac{1}{2}$ c.c. into a guinea-pig. No sickness followed in either case. The brain was removed and fixed in formalin. Some weeks later it was examined and revealed the following lesions:

Left hemisphere was normal; the right one was larger than the left. Section of it at the optic chiasma presented no extensive lesions, but from here forward there was a diseased area one inch in diameter in the middle of the hemisphere, which showed a tendency to extend to the lateral ventricle. The tissue is not fluid, but seems to be held together by coagulated blood into a jelly-like mass. The surface of the hemisphere is firm and shows nothing abnormal. The cerebellum, pons, and medulla were normal.

Case IV.—A black mare, owned by the A. & M. College, was found on the morning of Dec. 21, 1903, stumbling about the yard in a partially blind condition in the right eye. She had been fed on corn and sorghum hay exactly like the work mules. The water is artesian. She turns to the right, is not violent, and from some distance nothing abnormal would be noticed. About 9 A. M. we gave her $\frac{1}{2}$ gallon of linseed oil and 1 oz. of aloes, which she swallowed without difficulty. 8 P. M. mare is quiet, stupid, won't eat or drink, and nothing has passed from the



BRAIN OF A MULE WHICH DIED OF ENZOÖTIC CEREBRITIS. TRANSVERSE SECTION THROUGH THE HEMISPHERES AT THE OPTIC CHIASMA, SEEN FROM IN FRONT. NOTICE ABSCESS IN THE RIGHT HEMISPHERE AND DISEASED AREA EXTENDING TO THE SURFACE.

See description of Case II.



CASE IV. SEMI-ACUTE TYPE.



CASE IV. SEMI-ACUTE TYPE.



CASE IV. SEMI-ACUTE TYPE.



CASE V. HORSE STANDING MOTIONLESS FOR HOURS. NOTICE MARKS OF VIOLENCE ABOUT THE EYES. PHOTOGRAPH TAKEN A FEW HOURS BEFORE DEATH.



CASE VI. NOTICE THAT THE HORSE STANDS WITH THE FORE LEGS CROSSED. DIED ON THE SIXTH DAY.

bowels. 2 A. M. gave her eserine, mare is becoming violent, has been pawing and putting forefeet into the manger. 8 A. M. Dec. 22, mare quiet, has passed urine twice during the night, nothing from bowels, and has not eaten. Gave 3 grains eserine-pilocarpine. In 30 minutes bowels have acted. Loud peristaltic sounds audible 6 feet away. Temperature 101°. Will walk against the fence, bruising the head and body.

10 A. M. Standing quietly in the corner. Head held high over the top of the fence. Loud sounds from the abdomen, but no passage.

11 A. M. More violent. Broke out of the pen. Staggering. Gave three grains eserine-pilocarpine again. Some bowel discharges, but scanty.

12 Noon. Mare fell.

12.30. Mare got up, stumbled about and fell again.

1 P. M. Mare lies quietly from 10 to 15 minutes. Will then struggle and perhaps fall or roll over, then become quiet again.

4 P. M. Drew 10 c.c. of blood from the mare's jugular vein and immediately injected it into the vein of an old horse, drew 10 c.c. more blood from the jugular vein and injected it subcutaneously into an old mare.

Both of these animals remained well.

7 P. M. Mare alive, but will die in a few hours.

Dec. 23, 8 A. M. Found mare dead—cold—probably died about midnight.

9 A. M. Removed brain, and fixed it in formalin.

Examination of the brain: Right hemisphere normal. Left one is much larger than the right. A section at the optic chiasma shows a diseased area near the outer surface of the brain. From here forwards there is little or no change, but backwards the lesions become more conspicuous. There is no actual cavity, but in this case the brain substance is so soft as to be readily detected by pressure on the surface. The diseased area extends inwards about one inch and has a vertical diameter of 1 $\frac{1}{2}$ inches. In the extreme posterior part of the left hemisphere

there is a small cavity about $\frac{3}{8}$ of an inch in diameter. The remainder of the brain was examined, but nothing abnormal was found.

Case 11.—Mr. D. lives in Bryan and has a farm a short distance from town. His two-year-old colt follows the team to the farm and browses around and returns at night. On arriving at home Feb. 15th, the colt was noticed to be stumbling. In about half an hour the colt became violent and escaped from the lot, dashed down an alley at full speed and ran against a telephone pole, breaking it off at the top of the ground, then ran in another direction and through the side of a shed. It was secured with ropes to a tree until morning. It attempted to turn to the left, and walked around the tree at full length of the rope, producing a circular path.

Feb. 16, 11 A. M. The colt has been bled one gallon from the jugular vein and a strong blister has been applied to the forehead and poll.

4 P. M. Colt still walking around the tree. Temperature 103. Respiration labored, trembling of the muscles of the elbow. Colt stumbled, fell, attempted to rise, which was finally accomplished by getting on the hind feet first, then remained on the knees some $\frac{1}{2}$ minute with the left side of the head flat on the ground, and after several awkward attempts, regained his feet.

5 P. M. Colt stands with fore legs crossed. The action of the hind legs is quite natural. The tail is active, anus closed and sensitive, passed one gallon of urine in a normal manner, followed by erections of the clitoris.

6 P. M. Bored a gimlet hole in the frontal sinus "to let the water off the brain." Colt is down and motionless.

7 P. M. Colt is up, seems better.

Feb. 17. The colt has been restless all night. 10 A. M. drank freely. Won't eat. Respiration normal. Temperature 102. Bowels have acted recently. Flank muscles tremble. Uses hind legs and tail naturally, but "steps high" with fore legs

2.30 P. M. Temperature 102.6. Pulse 60. Respiration 20. Colt quiet. Head very low, eyes closed and blind, left ear lops down, stands as if simply propped up by the legs.

3 P. M. Colt staggered and fell on right side. At intervals of 10 seconds or so makes some meaningless motions with the legs.

5 P. M. Colt dead.

5.30 P. M. Cut off head. There is blood inside the dura mater, probably from injuries received while violent. Injected 25 c.c. of this blood from base of brain under the skin of a mare. No sickness resulted from it.

Removed the brain and fixed it in formalin. The left hemisphere appears normal. The right one is much larger. Section at the optic chiasma passes through a diseased area $\frac{3}{4}$ of an inch in diameter. This is quite soft but not actually broken down. The cerebellum, pons, and medulla were normal.

Case VI.—March 12, 1904. Mr. B.'s gray horse has staggers this morning. He has been working the animal at the plow for a week and feeding him with corn and sorghum. The corn is somewhat weevil-eaten, but is average corn for this time of the year. The horse is quiet, but stands with fore legs crossed. He refuses to be led and will pull back and break the halter. He is blind in the right eye this morning and turns to the right. The muscles of the right side of the face seem paralyzed, as the nostrils and lips are drawn to the left side. His respiration is heavy.

9 A. M. In passing through a stable door he bumped the right side of the head and body. We tried to give him oil and aloes, but he would pull back and became unmanageable. He seemed unable to swallow and some of the medicine probably went down the trachea and the remainder was wasted.

10.30 A. M. Gave 3 grains of eserine-pilocarpine subcutaneously. The horse paid no attention to the introduction of the needle. Temperature 97.4. Pulse 48. Respiration 32.

2 P. M. We repeated the eserine-pilocarpine. Bowels have acted four times since 10.30 and he has passed urine twice. He is entirely blind in the right eye.

5.30 P. M. Temperature 100.6. Pulse 56. Respiration 52. Bowels have acted twice since 2 P. M. We repeated the eserine.

March 13, 9 A. M. Horse is quiet but shows some muscular trembling. Bowels have acted twice during the night. We repeated the eserine and the horse flinches at the insertion of the needle.

12 M. The horse is standing quiet, but the trembling is increasing. The anus is relaxed and the bowels have acted twice recently.

3 P. M. Animal tried to drink water, nibbled alfalfa when offered him and later ate some from the manger.

6 P. M. Animal quiet. Walked around the stall. Temperature 98. Penis hanging out. Has normal use of the tail.

March 14, 9 A. M. Horse drank half a gallon of water with difficulty and ate some alfalfa. Temperature 99.

11.30 A. M. The right eye is becoming sensitive and he probably sees some with it. Drank some water and ate bran mash.

2.30 P. M. Horse standing quietly with the right fore leg held backwards under the body. Penis hanging out. Will not eat, but will chew a little on hay in a mechanical way.

5 P. M. Standing quiet with head low and fore legs far apart. Temperature 103.

March 15, 8.30 A. M. Horse seems brighter this morning. He notices visitors and attendants. Temperature 101. Ate some hay and drank some water voluntarily.

12 M. Standing quiet, but some muscular twitchings. Kidneys have acted recently.

2.30 P. M. Brushes away flies with the tail. Drank one gallon of water and ate hay. Temperature 103.4.

5 P. M. Standing quiet with a bunch of unchewed hay between the lips; drank two gallons of water. Temperature 103.8. Anus closed and sensitive.

March 16, 8.30 A. M. Animal quiet with head hanging low in the manger. Temperature 102. Responded when spoken to.

12 M. Standing quiet with head very low. Penis hanging out. Temperature 102.2.

5 P. M. Standing quiet, head low. Raised the head when spoken to and noticed attendant. There is a bunch of hay protruding from the mouth.

March 17, 9 A. M. Horse seems much better this morning. He walked out of the stable voluntarily and notices grass and other horses. Temperature 101.2. He allows the unchewed grass to protrude from the right side of the mouth.

4.30. Walks about the stall. The respiration is accelerated, a muco-purulent discharge comes from the nostrils. Drank well and ate one gallon of bran mash. Temperature 104.4.

March 18, 8.30 A. M. Temperature 102. Nasal discharge continues.

4.30. Nasal discharge has a very offensive odor. Respiration disturbed and indicates pneumonia, probably from the medicines having gone down the trachea.

March 19, 8 A. M. Animal standing with the forehead against side of the barn and pushing like a horse drawing a heavy load. Pulse very rapid, 120 per minute.

9 A. M. Pushing more violently, and after some minutes fell and expired.

10 A. M. Removed the brain, and found an abscess in the left hemisphere the size of a hen's egg.

We made bouillon cultures from this abscess which were kept at 37° several days. All remained sterile but one which contained a streptococcus.

We also made twenty-five smears from the abscess, but found no bacteria.

We made an emulsion of the abscess with sterile water and injected 2 c.c. of it into two horses, two rabbits and two guinea-pigs. No sickness followed this.

Further examination of the body was made and the lungs were found inflamed. Probably due to the medicines.

MILD NON-FATAL TYPE.

Case VII.—Mr. Smith has a bay mare, seven years old.

He feeds corn. The mare is in good flesh and is somewhat spirited. Nov. 8, 1903, the man in charge noticed that her vision was imperfect, but nothing was done until 5 p. m. The mare was dull, partially blind, and showed some confusion in the use of her fore legs. We gave half a gallon of raw linseed oil and one ounce of aloes mixed. The next morning the mare began walking in a circle. About noon, we gave eserine-pilocarpine subcutaneously, and secured prompt cathartic action. We observed some slobbering and muscular trembling, which was evidently due to the eserine. A marked improvement followed. The next day the mare was brighter, ate some bran and drank some water from a bucket set in a manger. She would occasionally leave the food and walk in a circle awhile, then return to it. She improved daily, but was somewhat stupid for several weeks. Finally, she made a perfect recovery.

APPLICATION FOR LICENSE TO PRACTICE IN SOUTH DAKOTA.—Dr. J. P. Foster, State Veterinarian, Huron, S. D., sends the following *verbatim* letter, which forms a running mate for the Florida appeal for the legal right to open a "veterinary stable," published in the March number (name of writer omitted): "MarCh 14 1903 Mr. Foster sir as I have found out What your adress is I Will drop you a few Lines Can you give me a horse Dr permitt as I have had Lots of praCtis in this line and maBy Iam CapiBle of having a diploma for as far as I know But I Want to get a permitt any Way send me your Blanks to fill out and I Will fill it out and send it BaCk to you to see how I Stand I have Dr horses and had good suCCess in most all Cases I undertake and I have had some as Bad Cases When yours state depty give them up and Cured them I Cut a No of Colts Last Year and some With Clamps and some With out and I had good Luck With I took up one Case that 3 Cutters Would not touCh and Castarated him and Was all Right So Good By So I dont see Why I Cant stand high enough for one or the other and I undertake nothing What I dont understand But I dont have to Pass many Cases up and I tell the peple Just What I know and I think in Regard to ther horses and What people I Dr for Likes my Dr. Very Well So ansWer this as soon as you ReCeive this letter So I remain Yours Truly,"

THE STOMACH TUBE IN VETERINARY PRACTICE.

By F. J. BLISS, V. S., EARLVILLE, ILL.

Read before the Illinois Veterinary Medical and Surgical Association.

It will be remembered that at the August meeting of this Association in 1903, by some of the members present, that I exhibited a Phillips Stomach Tube. The society was asked to express their opinion *pro* and *con*, as to what they considered its possible claims to recognition in our practice. I recollect it did not appeal very strongly to those present, and was commented on, if at all, adversely. As I myself had only had an opportunity to use it on two occasions I was not prepared to say very much in its defence, but I was determined to give it a fair and impartial trial, being satisfied in my own mind that the principle was right, for it brought to mind the axiom that if you succeed you must get at the seat of the trouble. Now there you are at the seat of the trouble with your stomach tube, or near enough to it to do business. And I want to be understood as claiming that more can be done in five minutes to relieve a case of colic than you can do with the whole gamut of remedies that we have been using for the past fifty years. The mere introduction of the tube and the results you get are only the starting point. What can be accomplished only a long list of experiments will verify.

With these prefatory remarks I will give such of my experiences as I think will interest you. The introduction of the tube is not at all difficult. The *modus operandi* is as follows: Coil your tube in a pail of warm water, have a quantity of powdered ulma cortes ready for use, let your assistant stand on the left side of the patient, grasp the mane with the right hand and with the left lay hold of the nose well up toward the eyes, then enter the right nostril with the tube, using your right hand with the index finger extended to keep the tube well pressed down on the floor of the fossa, using your left to pass the tube upwards. When the entrance to the œsophagus is reached wait a moment and the animal will swallow and your tube will pass

easily. As your tube is marked the arrival at this point is easily approximated. Keep the tube well lubricated, using nothing but that advised above. If, as is sometimes the case, the oesophagus contracts and further progress is interfered with, syringe into the tube a little water, and all goes well again. Your entrance into the stomach will be announced by some sort of an exhibition, usually by a rush of gas, followed by a flow of ingesta of different character. It is just as easy to reach the stomach through either nostril. Choose the one which comes the handiest for you to operate through.

I have selected four cases that differ so much in character and symptoms to illustrate from, I think the details will better show the effectiveness of the tube and its wide field of usefulness:

Case 1.—Bay pacing gelding, aged, of considerable local notoriety; informed on my return from a call by my assistant that the case was undoubtedly a fatal one. He had been tapped three times, with no results, extremities deathly cold, head hanging pendulous, body covered with a cold sweat, pulse hard and thready and almost imperceptible, breathing labored, staggered if moved, no peristalsis. History of case: Had been driven hard for two days, animal had not eaten much, breath noticed to smell badly, but had been attributed to other causes. There was a discharge of a bluish color from both nostrils. The tube was introduced and the stomach relieved of several gallons of a thick clay-colored fluid that gave out such a stench as to drive the spectators to a distance. As the flow ceased about ten quarts of salt water was slowly passed into the stomach and then syphoned out, until twelve gallons had been used. At times the stomach contracted violently and quantities of the same fluid noticed at first would be expelled. After the water was returned clear, eight quarts of water and one ounce of Creogen-Martin, at a temperature of 125° F., was passed into the stomach and allowed to remain, and the tube was removed. The patient was much improved. The time occupied was about 65 minutes, and the patient had not moved a foot. He was put away

for the night and watched. No bad symptoms were noted. In the morning at 8 A. M., the tube was again passed and eight quarts of oatmeal gruel and six ounces of rye whiskey, with one ounce of aromatic spirits of ammonia and half an ounce of tr. ginger were introduced. Great improvement was apparent. A short walk was given and the patient picked some grass, then made away with all the hay given. Recovery was complete.

Case II.—Black mare of draft breed, four years old. Driven 30 miles to buggy by a lady; diet, straw and new corn. All that could be learned of interest was that the mare never had been driven more than 10 miles at one time before, and had been very sluggish all day and frequently laid down the last 10 miles of the journey. The animal showed results of severe punishment. Condition: Body bathed in a cold clammy sweat, ears lopped, head down, braced against wall of stable, breathing short and difficult, pulse could not be felt, showed extreme exhaustion, bloated badly, no results from tapping, anus and vulva enormously swollen, stumbled to knees several times and recovered with difficulty. Expected death at any moment from the general appearance of the animal. The tube was passed easily. As it reached the stomach a rush of gas took place such as I have never witnessed in all my experience with the instrument. Death was imminent from suffocation, the distended stomach pressing the diaphragm and encroaching on the lung space. Relief was apparent at once; some particles of corn were noticed that looked and felt dry. Ten quarts of Creogen-Martin solution pumped into the stomach brought away about a peck of partially masticated corn. The stomach was then again washed out and ten quarts of hot Creogen solution allowed to pass into the intestines and remain. The patient was afterwards turned out into a small pasture and allowed to remain until the next morning, when she was found to be all right. Nothing else was given. I got to thinking during my ride home that here was a case that nothing that I had ever been fortunate enough to find out would have saved. I also concluded that Creogen-Martin

was the greatest bowel antiseptic and anti-ferment when used in this way that has ever been discovered. I attribute the great success of this method of treatment to the fact that we are at the seat of the disease in a moment, and the patient can be, as it were, snatched from the jaws of death, for I firmly believe that in a few moments more suffocation would have taken place, or if the animal had ever fallen down the stomach would have been ruptured.

Case III.—Gray draft mare, had been sick all night and in the care of another veterinarian. The history was that she had ploughed the day previous, had scoured badly, eaten nothing at noon, but little of morning feed, as was discovered later; diet was corn fodder with corn on. When seen was in great pain, lying down and getting up and dropping quickly again. I gave as an experiment about 20 quarts of hot Creogen solution and oatmeal gruel mixed; this was given through the tube. In the space of two hours the last quart contained one ounce each of tr. opii and sulphuric ether, after 30 minutes a hypodermic of morphia was given and the patient warmly blanketed. She rested easily, lying on a bed of straw, until 3 P. M., when she got on her feet and made a slow recovery. Nothing else was given. This mare resisted every attempt to administer medicine per os, and while she had the best of attention the previous night nothing was accomplished until the tube was passed.

Case II.—Five-year-old stag, castrated only a short time. Diagnosis, impaction and inflammation of the bowels of five days standing. Patient very restless, pawing, anxious expression of countenance, muscles of abdomen hard and tense, with a tucked-up appearance of the flanks, slight amount of faeces passed in the form of dry hard pellets. The diet had been straw and corn, was watered whenever the owner happened to think of it. Had but little exercise for a long time past. Treatment: Rectum emptied by an enema of hot soap and water, a large sponge with a rubber tube stitched fast through the centre was carried as far into the intestine as possible, and was then thoroughly irrigated with a warm solution of Creogen. The

tail was held down and the fluid allowed to absorb. This was repeated several times and hot water foments were applied to abdomen. The stomach tube was passed and in 10 hours 52 quarts of hot water with a little Creogen were given. In 24 hours a soft passage was noticed, followed in short order by others. A diet of mashes with sweet apples and grass completed a cure.

I have selected these cases out of many others because they represented the extremes of their types, and were widely different in character, and I do not think that without the tube any one of them could have been saved. I am not claiming infallibility, but in extreme cases the tube has proven invaluable to me. One thing more in conclusion, I will say that I have had only three cases of haemorrhage of the nostril. A little caution in removing the tube from the stomach and this can be avoided. Do not allow the patient to shake his head, raise the tube up, and do not allow it to drag on the floor of the nasal fossa. The tube can remain *in situ* for several hours and do no harm. I have never had a patient resist it in any way.

THE GOVERNMENT BREEDING FARM.—While sitting in Secretary Wilson's office the other day, I overheard some interesting conversation with an old friend. The latter was an Iowa farmer who has bred many fine horses. The talk naturally turned on horses. The Secretary said: "We are importing considerable blooded stock for breeding purposes. In my judgment we have some of the finest breeding animals right here in the United States. Our horse people here in the Department are going to try to develop a twelve or thirteen-hundred-pound roadster for the American stock, which should take the place and better our importations. We are going to start in Colorado and breed up some colts with this purpose in view. And I am going to have my own way about feeding these colts and making them the finest animals possible. I am going to have their feeding commence while they are still suckling. The hackneys will oppose this, but we have natural advantages here for horse-raising which are ahead of those of any other country in the world."—(*Indiana Farmer.*)

VETERINARY DENTISTRY.

BY W. A. GIFFEN, V. S., D. D. S., DETROIT, MICH.

Read before the Meeting of the Michigan State Veterinary Medical Association at Lansing, Feb. 7, 1905.

In this paper I have confined myself to the practical side of veterinary dentistry, as it would take up too much time—in fact, it would be impossible in a paper of this kind to take up in detail the phenomena of tooth formation and eruption, their growth, histology, anatomy and nourishment.

These phenomena are very interesting and very important to the veterinarian, especially the histology and anatomy. A number of very good text-books have been written on horses' teeth, although I don't know of any that has been written in the last ten or twelve years, and I think some of them might be revised with advantage to the profession, especially in regard to the prophylactic treatment of the teeth and mouth; by that I mean the keeping the oral cavity in as nearly an aseptic condition as possible during and until the recovery of an attack of any constitutional disease; also the cleaning of the teeth in all horses from time to time and the correcting of irregularities before they are bad enough to interfere with the health or use of the animal.

DENTITION.

The absorption of bone, and of the roots of the temporary teeth by pressure of the developing teeth is frequently attended by constitutional disturbances, such as loss of appetite, sluggishness, etc. It is a fact that the period of the eruption of the permanent teeth predisposes the animal to the contraction of infectious fevers.

The physiological and pathological changes which take place in the tissues surrounding the teeth during this period is always attended with more or less disturbance of the circulatory and nervous systems, hinderance to the normal mastication of food, and the absorption of the putrid materials and accompanying septic microorganisms with which the mouth abounds.

At this time all contribute to lower the vitality of the animal, thereby making it more susceptible to contract disease and less able to withstand the debilitating effects of disease.

TREATMENT.

First remove all temporary teeth which are loose, broken, or interfering with the eruption of permanent teeth, also any foreign materials or food which may be lodged around the teeth, and thoroughly wash out any lacerations of the soft tissues with a mild antiseptic solution, and until they are healed or at least for a few days give small doses of potassium chlorate dissolved in drinking water, also feed on food which does not require much mastication and which is easily digested. If there is elevation of temperature give quinine on account of its antiseptic qualities. In extreme cases where there is much irritation of the nervous system a sedative would be indicated.

EFFECTS OF WEAR OF THE TEETH.

Owing to the nature of the food of the horse the teeth must wear to a certain extent upon their grinding surfaces ; however, it would take a great deal of wear to cause serious inconvenience if it was distributed over the entire table of the tooth, as it would wear down evenly ; but as you know the lower jaw is not so wide as the upper jaw, the inner edge of the lower molars and the outer edge of the upper molars do not get so much wear as the remainder of the grinding surface, consequently they become elongated, in time forming projections which may damage the surrounding soft tissues. Another reason why the teeth do not wear evenly is because there is not so much lateral motion of the jaws in the domesticated and artificially fed horse. I think some horses have more of a choppy action of the jaws than others ; this fact probably accounts for the difference of wear in different horses. Some horses may become quite old and the grinding surfaces remain normal in shape.

TREATMENT.

The only treatment is to remove these projections and re-

duce the grinding surfaces to as near a normal condition as possible. I think the best method of doing this is either by grinding or filing first by a coarse file if the projections are long, but always finish with a fine file. Don't round off the edges; always leave them sharp as the horse must have them so in order to cut its fodder. I don't favor the use of chisel or bone forceps for the reason that as the enamel is not evenly distributed you are very liable to split it or break it off unevenly, exposing the dentine, which would make the tooth sensitive for a long time and almost sure to decay.

The same thing may be said in regard to cutting off teeth which have become elongated in their sockets as a result of loss of opposing teeth. I think it is wrong to attempt to cut them short enough to correspond with the adjoining teeth as you are so apt to split the tooth or encroach upon the dentine too much and possibly open up the pulp canals; while if you only file or grind off enough to prevent the tooth from injuring the opposing tissues, you overcome the trouble just the same. You do not endanger the life of the pulp in this way, and while you may expose some sensitive dentine, nature will overcome this by the pulp receding from the grinding surface of the tooth and the formation of secondary dentine.

CARIES OR DECAY OF THE TEETH.

Owing to the fact that it has been demonstrated that caries of the teeth is caused by certain microörganisms and the action of their ptomaines upon the enamel or exposed dentine, the value of prophylactic treatment has been recognized.

A comparatively small percentage of horses suffer from caries of the teeth, the principal reasons being, I believe, the short life of the horse, the thickness of the enamel, and the food of the horse does not decompose so readily as the food of the human being.

Caries generally attacks the horse's molars in the approximate spaces at the free margin of the gums where the enamel is very thin or at any point where the enamel may be split or cracked off, as the dentine is so porous that it affords a good lodg-

ing place for bacteria and they make rapid progress towards the pulp, the death of which finally takes place. Death of the pulp is also caused by blows or kicks, and when this happens serious trouble usually follows as the pulp tissue decomposes and the gases formed by this process force some of the putrid material through the apical foramen of the roots, causing what is known as alveolar abscess. In those cases the pus usually escapes into the nasal or maxillary sinuses, or if in a lower jaw it may burrow through the tissues and form a fistulous opening externally.

Extraction of the offending tooth is the treatment, as it is impossible to thoroughly sterilize and fill the root canals of the horse's molars with a reasonable hope of success. It is also practically impossible to fill cavities in crowns of molars, as the flow of saliva interferes with the proper insertion of plastic fillings, and, again, the difficulty of cavity preparation.

Broken incisors could be treated satisfactorily and crowned with gold or platinum crowns.

The teeth of the dog can be treated, filled and crowned satisfactorily provided the roots of the teeth and surrounding tissues are healthy.

In extracting molars in lower jaw use forceps if possible, while in the upper jaw if the floor of the sinuses has been perforated I think trephining the best method, as the sinuses or a part of them over the roots of offending tooth will require cutting. The insertion of a gutta-percha plug in the tooth socket has been attended with considerable success, I believe.

HORSES imported into the Argentine Republic are detained in quarantine for eight days and are tested with mallein. Should there be any signs of reaction to the test the animal is condemned and slaughtered.

THE OHIO STATE BOARD OF AGRICULTURE, of which W. W. Miller, Columbus, Ohio, is Secretary, has begun the issuance of press bulletins. The first one is written by Dr. Paul Fischer, the State Veterinarian of Ohio, and the title is "Rabies (Hydrophobia) Among Live Stock." It is stated that during the past year rabies has become quite prevalent among live stock in Ohio.

COLICS IN HORSES.

BY DR. E. L. KALB, ROCHESTER, MINN.

Presented to the Eighth Annual Meeting of the Minnesota State Veterinary Medical Association at St. Paul, Jan. 12-13, 1905.

When our worthy Secretary invited me to present a paper for your consideration, I was at a loss for a subject. I decided on "Colics," because perhaps in no cases is there such a wide range of treatments used, and because they cause more worry and loss of sleep, and are on the whole the most unsatisfactory for the "country vet." to handle. They are often unsatisfactory and cause us worry, because we do not have a fair chance at them, for, to the average farmer's mind, any one ought to treat "belly-ache" successfully; and they all look alike to them, and any evidence of abdominal pain is "belly-ache" or "stoppage of the water," and each one of them has a pet remedy; this, and the neighbor's, are tried before sending for the "vet."

Then, along about midnight your 'phone will ring and you pull yourself out of bed, probably have to have your wife kick you out, 'phone ringing merrily in the meantime, and all this disturbance wakes up the baby, who sets up a howl just to let you know he's alive, and you fall over a chair or two getting to the 'phone, and this is the usual dialogue: "Hello." "Hello, is this Doc. So-and-So?" "Yes." "Well, I want you to come right out." "Yes, who is this?" "So-and-So." "What's the trouble?" "Got a sick horse; can you come right out?" "Yes. What seems to be wrong with him?" "Oh, its his water; bring your instruments along." "Yes, how long has he been sick?" "All day; hurry right out, Doc.; he's awful bad." "Yes; good-bye," and you hang up the receiver and cuss a little while you dress; you hitch up and drive out any old distance, and find the patient oftentimes worse off for the dope he has received than from any disease, and it will take an hour of explanation to convince your client that the trouble is in the bowels and not in the urinary apparatus; and if the patient dies, why "A man convinced against his will is of the

same opinion still," and if you had drawn his water he'd have got well, and you have lost prestige in that neighborhood.

Colics cause us worry also, because it is a serious thing to have anything of an acute nature go amiss with a horse's digestion.

The construction of the digestive organs, and the amount of work they perform every twenty-four hours, make them extremely liable to inactions and fermentations of the bowel's contents, which are followed quickly by paralysis more or less complete, congestion, inflammation, gangrene or rupture, and the quickness in which any of these conditions can kill a horse is astonishing.

I have taken the term "colic" as a general one, and as the causes and symptoms of the different colics are too well known to you all to require mention here, I shall only mention those treatments which in my hands have been the most successful, and invite a thorough discussion of each one.

Gastric Tympany.—This is one of the most rapidly fatal of colics. The small size of the organ, and the horse's inability to vomit make it so, and unless the fermentation is stopped and the gases absorbed, the patient soon dies of suffocation and impaired heart's action or of a ruptured stomach or diaphragm. What is to be done? First stop the fermentation, and absorb the gases. Aqua ammonia fort. has always been the best agent in my hands for this ($\frac{1}{2}$ ij-iv in a quart of warm water), repeated in half an hour if need be, and as soon as the organ begins to regain its normal size give a good big stimulant and stomachic (strychnine gr. ij-iv, and alcohol and sulphuric or nitrous ether, each $\frac{1}{2}$ ss- $\frac{1}{2}$ j, and tr. zingiber $\frac{1}{2}$ ij).

Spasmodic Colic.—True spasmodic colic is confined to the small intestines and is of short duration usually, though the patient suffers terrible pains, and as a rule before the country "vet." is called he has recovered, or is quite beyond hope, or is already dead of pain and exhaustion. This condition is one of the easiest colics to treat, to my mind. A good big diffusible stimulant, with full dose of chloral hydrate, and if peristal-

sis is dull a small dose of physic. My favorite physic in this case is castor oil with a little turpentine added. If the pains persist crowd the chloral and stimulants.

Impaction of the Double Colon.—In all cases of impaction, the first thought is to rid the bowel of its load of ingesta, but often we can not wait for the slow-moving oils or aloes, and more prompt remedies must be employed. Here is where eserin or barium chloride reign supreme. Stimulants, both nerve and diffusible, should be given and plenty of them. Strychnine (gr.ss-gr.j) subcutaneously or gr.ijj-gr.v. combined with alcohol and ether, or ammonia carbonate, in a drench, followed by a subcutaneous injection of eserin (gr.j-gr.ij) with or without pilocarpine added. Barium chloride (gr.v-xv) intravenously. Now, leave the patient alone for five or six hours, unless the pains are very severe, when a full dose of chloral hydrate ($\frac{1}{2}$ ss- $\frac{1}{2}$ j) may be given. Repeat the stimulants in somewhat smaller doses after five or six hours, and if something must be given to satisfy your client give more diffusible stimulants; if a physic must be given, let it be a small one.

Impaction of the Single Colon and Rectum.—These bowels may become impacted, either one or the other, or both together; the same treatment suffices for both. Here physics should be used with caution, for they often increase the trouble by crowding into the already dormant and overloaded bowel more material from the double colon, and here we have, to my mind, the only form of colic where the benefits derived from enemas justify the trouble taken in giving them, but to be effectual the water should be carried as far into the bowel as possible and large quantities should be used and often. I have about 12 feet of $\frac{1}{2}$ -inch garden hose on my injection pump, and by gently pushing it in while the water is being pumped through I have been able to insert three or four and sometimes five or six feet of hose into the bowel, and this repeated at intervals of half an hour will relieve the condition alone oftentimes. But it would not do to treat a case with only injections, for the next time your client had a case of colic in any form—they all look alike to

them—he would rush around the neighborhood until he found a syringe of some kind, and would spend the best part of the next 24 hours in giving the patient injections, that would be worse than useless, and about the time the poor animal was ready to die would send post-haste for you to come, regardless of time, weather, or roads, and would expect you to straighten him out regardless of his condition.

For remedies I can only repeat what I have said in regard to impaction of the double colon, only go slow with the physics.

Flatulent Colic.—Here we have a fermenting mass to contend with, with all the dangers of suffocation and rupture found in a distended stomach and also great danger of absorption into the blood stream of the poisonous gases. If the distention is great use the trocar and canula at once, thus relieving the bowels of the distention. Administer the stimulants and a dose of eserin or barium, or a physic, either of aloes or oils and turpentine. Should the fermentation continue in spite of this, puncture the bowel and inject through the canula into the bowel a warm, weak solution of carbolic acid, about one ounce to the quart, a pint of this may be introduced directly into the bowel.

In conclusion, I will say that about the only remedies I use in treatment of colic are: First, stimulants and lots of them, strychnine in doses from 2 to 5 grs., not to be repeated in less than five or six hours. Alcohol, sulphuric and nitrous ether or ammon. carbonate, given in 1 or 2 ounce doses every hour; tr. zingiber and tr. capsicum, given with the stimulants in 1 to 2 drachm doses; aqua ammonia fort. given in plenty of water in 2 to 4 drachm doses; aloes in doses of 6 to 8 drachms; castor oil in doses of 1 to 1½ pints, with 1 oz. of turpentine added; eserin subcutaneously in 1 to 2 gr. doses, and barium chlor. 5 to 15 gr. in warm solution, intravenously.

A SUIT brought in St. Louis for the value of a colt estimated to be worth \$18, cost \$1,500, including the attorneys' fees on both sides. While the suit was pending the colt died.

ABUSE OF REPULSION OF TEETH.

BY DR. J. T. LAMBRECHT, MINNESOTA.

Read before 8th Annual Meeting of the Minnesota State Veterinary Medical Association,
at St. Paul, Jan. 12 13, 1905.

Repulsion of teeth scientifically performed accomplishes some grand results which no one can deny, but this paper is more particularly intended to elucidate some practical points, not as to how the operation should be performed, but more especially as to how to differentiate between necrosed teeth producing disease (not masticatory), but disease of the sinuses from those (necrosed teeth) having no effect upon the sinuses.

In this last respect we can divide the clinical cases into two classes, namely:

First Class.—Those cases having a nasal discharge, existing for some time, from one or both nostrils and with or without enlargement of the superior maxillary or frontal sinuses, on one or both sides, and having a necrosed tooth or teeth (especially the fourth superior molar). Mention is made of the superior fourth molar or molars because it is the one most frequently affected and having direct effect upon the sinus (inferior maxillary), but having no enlargement directly over the fang of the respective tooth or teeth, is not the clinical case for repulsion of the diseased tooth, for in these cases the necrosed tooth is but an existing condition and not a primary factor in producing disease of the sinuses.

Second Class.—Those cases having a nasal discharge existing for some time from one or both nostrils, with or without enlargement of the superior maxillary or frontal sinuses on one or both sides, but having an enlargement directly over the necrosed tooth; or in other words enlargement of the inferior maxillary sinus is the clinical subject for repulsion of the necrosed tooth.

As to surgical interference, in the First Class:

I would operate on the sinuses, but would not interfere with the necrosed tooth unless it caused masticatory trouble and very often necrosed teeth do not interfere with mastication.

In the Second Class repulsion of the tooth becomes of primary importance, and sometimes this has to be followed with operation on the sinuses.

I specially want to emphasize that I believe that there can be necrosis of the fourth upper molar co-existing with disease of the sinuses and the tooth having had no effect in producing the disease.

In order to substantiate this, one invariably finds when operating on cases belonging to clinical class No. 1, that there is no pus to be found in connection with the root of the diseased tooth, but pus is found in the sinuses (superior maxillary or frontal), therefore, remote from the root of the diseased tooth; but in operating on cases belonging to clinical class No. 2, one always finds pus in connection with the root of the diseased tooth, but with one exception, *i. e.*, in young horses where the 3d molar is retained and, therefore, enlargement at its fang, but in these cases the tooth is not necrosed.

Therefore, it is my opinion, that if the tooth is so diseased as to be the cause of pus production in the frontal or superior maxillary sinuses, remote as they are, there must first be pus in connection with its root or inferior maxillary sinus.

"THERE is nothing I feel like paying more freely than my yearly subscription to the REVIEW. I consider it indispensable to a veterinarian and appreciate your efforts to make it the successful journal that it is."—(G. L. Buffington, Brooklyn, Iowa.)

MEDAL FOR DR. J. C. MCKENZIE, OF ROCHESTER, N. Y.—President J. B. Y. Warner, in behalf of the Society for the Prevention of Cruelty to Animals, presented to J. C. McKenzie, veterinary surgeon of the society, this afternoon, a finely engraved gold medal with the seal of the society on one side and the following inscription on the other: "Presented to James C. McKenzie by the Humane Society in grateful recognition of his professional services, freely rendered to that society and the cause of humanity for a quarter of a century. On the bar which supports the chain, to which the medal is attached, are the dates of Dr. McKenzie's connection with the society, 1880 and 1905. During this period he has served the society without compensation.—(Rochester Post, April 13.)

AN EPIZOOTIC OF QUITTOR AMONG HORSES AND MULES.

BY DR. D. F. LUCKEY, KANSAS CITY, MO.

Read before the Missouri Valley Veterinary Association, Jan. 11-12, 1905.

The occurrence of 200 cases of quittor in different forms in one neighborhood seems so unusual that I thought it might be well to bring up the subject for discussion at this meeting. The disease was so prevalent in a locality in the southern part of Madison county that it amounted almost to a contagion. In fact, there was much evidence pointing to the contagious nature of the outbreak. The disease affected horses and mules alike, and showed no partiality as to size or weight. It attacked work horses and mules that were used for hauling lumber upon the public highways, as well as the horses kept in lots about the town of Marquand, some of which were at rest most of the time. The quittor was noticed in a two year-old mule running on pasture.

The country in which this outbreak occurred is hilly and rocky. Nearly all of the public roads are naturally covered with more or less gravel, but no extremely rough and rocky places. Horses and mules have been used over these same roads for years without anything of the kind ever being observed before. The examination of horses, however, showed that there were quite a number of chronic cases of scratches, and it has not been uncommon heretofore for a horse to crush a piece of gravel through the sole of the foot and have it work out at the top of the hoof. On the first appearance of these cases of quittor the affected horses were supposed to be what is commonly known as "graveled."

There were cases scattered over quite a territory surrounding Marquand, Missouri, but the greatest number of cases occurred in Marquand and Gravelton, 12 miles away, and among the horses along the road between these two places. Some of the horses were used in farming, but a majority of them were used in logging camps, and in hauling lumber to the railroad

at Marquand. During the past summer there was considerable rain, and the above mentioned road in particular, being traveled a great deal, got very muddy. After the rains ceased the road dried up fairly well except in places. Along the course of this road some eight or ten large mud holes were left and these became very filthy. It was said by the drivers that the odor from these mud holes after the water became stagnant was very offensive, and I believe that some of these cases of quittor at least may be attributed to infection from the filth of these mud holes. The cases were noticed about the time the roads began drying out, and have been very prevalent since.

SYMPTOMS.

The symptoms were by no means uniform in all of these cases. However, there was generally noticed the formation of an abscess in the beginning, which in a majority of the cases was located in the hoof. When the abscess was located in the hoof the pain was intense until the pus was evacuated, and the animal was oftentimes unable to put its foot to the ground. In cases where the abscess formed above the hoof there seemed to be little or no pain in the beginning. When the abscess broke or was opened and the pus discharged there was left a fistulous tract showing no tendency to heal. In fact, the tendency was for the disease to spread, and in some cases the ulceration extended around the coronary band, entirely separating it from the hoof, and in a few cases resulted in the hoof slipping off. In many cases the pus burrowed in different directions in the hoof separating the entire horny portion from the sensitive sole, and part or all of the sensitive from the insensitive laminae. In as many as ten cases the infection spread to the fetlock joint, and within ten days from the beginning caused the joint to slough off, making it necessary to destroy the animal. In these cases the pain was intense. In the beginning the fetlock was badly swollen. In a few days the swollen fetlock broke, discharging an oily substance from many different openings to such an extent that it, with the blood that escaped, was sufficient to work up a considerable lot of mud on the ground beneath the

affected limb. In two cases that came under my notice a bunch of skin and connective tissue about like half of a hen's egg sloughed out of the foot just above the coronary band, and the lesion left showed no tendency whatever to heal. These cases were healed with the greatest difficulty after applying different remedies for over two months. In a few cases the lesions were located in the hollow of the heel. The whole area usually affected by scratches being in an extremely unhealthy state poured out an oily exudate which on drying accumulated in the hair in considerable quantities. In a few other cases a very unhealthy crack appeared transversely across the leg just above the fetlock. These cracks were almost as obstinate about healing as an ordinary case of "grease heel." In some cases there was simply gangrenous patches upon the skin of the leg in different places up as high as the knee and hock. Although the hair was carefully clipped off of these patches, and all filth removed, they were as unyielding to the application of the ordinary anti-septic dressings as an ordinary case of "grease heel." These patches varied in size from a copper cent or less to the size of a silver dollar, and presented an angry looking gangrenous surface. From this there exuded the same sort of material as came from other superficial lesions, and was discharged from the fistulous openings in the hoof. The pus discharged from the abscesses when they were first opened was thick and almost white in color.

TREATMENT.

As has been indicated before, treatment in most of these cases was very unsatisfactory indeed, requiring considerable time and patience to heal the simplest lesion on the skin. There were almost as many remedies used by the laymen as there were individual cases, and one treatment seemed to be about as efficient as another.

In a few cases I removed all of the hoof from over the diseased areas, thoroughly cleansing the parts, then applied different dressings as I thought advisable. To my great surprise in some of the cases that were fixed up, as I thought in perfect

order, the most adverse results were obtained. The poison exuding from the wound seemed to reinfect the healthy tissue surrounding, and again burrowed under the hoof, causing a further separation of the horny and sensitive structures. It seems that nothing but the actual cautery would be successful in rendering the diseased tissues, wherever they were located in a healthy condition. In one case where the abscess developed in the hollow of the frog, and was noticed more on account of the protuberance than of any pain it was causing the horse, good results were obtained by making a small opening, squeezing out the pus and injecting the cavity with full strength carbolic acid, which I confined in the cavity by plugging up the opening. This treatment checked the disease in this place and in a few days the foot was in a good shape. In the latter part of the siege one party made a practice of opening the abscess as soon as its presence could be detected and injecting boiling tar in this cavity. This treatment, although apparently somewhat heroic, appeared to have the desired effect, and mules treated in this way were not hindered from work for more than a few days' time.

As a preventive I advised that the legs of the horses and mules worked in the mud should be thoroughly washed off every night before stabling and bathed with a bichloride solution, 1-1000.

ANTITETANIC DUSTING POWDER is a mixture of equal parts of chloretoe and dried antitetanic serum, which is used as a local application as a prophylactic against tetanus.

A "COLLEGE" in Detroit, Mich., advertises a correspondence course in veterinary dentistry. An elaborate circular describes the course in detail. "Lecture No. 10" is said to describe the muscles of the head, the following sentence giving a good example of the dense intelligence of the "dean": "For example, the large muscle on the side of the jaw, known as the *Master Muscle*, when it contracts closes the mouth." Is the Michigan Practice Act sufficiently strenuous to contract the "dean's" Master Muscle, thus closing both his mouth and his "college?"

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

PARTURIENT PARESIS—A SOMEWHAT SPEEDY RECOVERY.

By W. H. DALRYMPLE, M. R. C. V. S., Louisiana State University, Baton Rouge, La.

On Wednesday morning, the 5th of April, while on the way to my class-room, I was asked by one of the professors of our State University, living on the campus, to look at his Jersey cow, as he was afraid there was something very radically wrong with her.

He afterwards told me that, although he had asked me to see the cow, he thought it was useless, as the animal appeared to him to be about dead then. To satisfy the professor, I examined the cow, which, at her previous parturition, had given something like 40 lbs. of milk per day. So that she was really a valuable animal, and the family cow, at that.

When I saw her, she was comatose, and as I saw I had a typical case to deal with, I had the veterinary class (seniors) of the Agricultural Course, come and try their hand at diagnosis.

The owner had given the history of the case, and with the patient before them, they all managed to "spot" parturient paresis without very much trouble. So much for the boys. Of course I was pleased to see that veterinary instruction given, even in an agricultural course, was not all in vain.

Not having a regulation air-pump—more from procrastination than anything else—I "rigged up" my thermo-cautery-bulb with a three-inch plated canula belonging to a hypodermic case, and immediately started one of the students to inflate the udder. I should have stated that the cow had a calf (the 4th) the day previous, and that the gland was emptied of milk and disinfected before commencing operations. After each quarter was inflated and tense, I passed a small piece of cotton tape round each teat, to prevent the possible escape of any atmospheric air. Kneading or massage was then vigorously begun, and was continued for some little time. The "veterinary medical staff" then left the patient, at 9.30 A. M., in the care of the owner, who seemed to think that if a little of that treatment was good, a little more might be better. Seeing how the operation was performed, which seemed very easy, and having

left the pump with him, he, on his own responsibility, made another inflation, and again went through the kneading process. This was about 10.30 A. M. At about 11 A. M., the professor noticed signs of brain-activity, with returning consciousness; and at 12 noon, the cow was on her feet eating hay. I had told him, that, if she got over the attack, recovery would be quick. But, I presume he thought I was saying this merely to console him; for, according to his own statement, he could not see how any power on earth could bring his cow back to a normal state.

An interval of two-and-a-half hours from a state of profound coma to being up and eating, with the calf nursing, seems to me a very short one. This is, really, my chief object in recording the case, which may be of interest to readers of the REVIEW engaged in cattle practice. The atmospheric air treatment is undoubtedly accomplishing very satisfactory results.

A PECULIAR CASE OF LUXATION OF THE PATELLA.*

By S. H. BAUMAN, Birmingham, Iowa.

Dec. 30, 1904, received a phone call and upon arrival found mare with right hind leg extended in a forward position and unable to touch foot to ground. Owner made the statement that mare had been in this condition for about seven days. That he had called in other advice and that it had been pronounced ankylosis of the hock; that no treatment would benefit and advised destruction of mare. Owner stated he had recently paid \$150 for the animal and wanted more light on the subject before he extinguished the little spark. Upon examination found leg perfectly rigid and held against side of abdomen. Part of time it would remain to outside and other times between front legs, change occurring as animal moved and changed position of front legs. Also found that mare had a barbed wire cut in front hock, which was almost healed. Owing to this think parties made diagnosis of ankylosis of joint. Upon examination found patella displaced and in outer groove. The patella was replaced after considerable effort, when leg assumed normal position and action. In movement of animal or by drawing leg forward patella would easily be displaced and limb would assume its former position, that is, point forward and become rigid. I examined and studied case closely, but found nothing different from any other case of luxation except posi-

* Presented to the Meeting of the Iowa State V. M. A., Jan. 25-26, 1905.

tion leg would assume while patella was displaced. There was considerable atrophy of the gluteal muscles caused from disuse of limb owing to wire cut. By placing hopples on hind feet limb would remain normal. Why should this case upset all my cherished traditions by assuming a contrary position? It is one on me.

THE DIFFERENCE BETWEEN ANTE AND POST-MORTEM DIAG- NOSES.

By FRANCIS ABELE, JR., Quincy, Mass.

Our old professor used to say: "When you have located your lameness, look for a nail in his foot." I appreciate more and more his idea.

Two horses were in a trolley accident. Both thrown down. On one, off shoulder and side were very sore; would pull in a circle or not at all; would flinch on pressure to side; would not be curried. In a few days was all right.

The other was also sore and stiff, with more stiffness and less soreness. Near hock swelled hard and hot and flexed. Was quite lame in that leg, which I attributed to hock. Horse was boarded away from home. Two veterinarians diagnosed stifle lameness. Two horse dealers claimed dropped hip. Horse died of colic. Capsule of hock had purplish red membrane, and synovia, while articular surfaces had same dark color. Stifle joint was healthy. Arch of pelvis was complete, no drop, but ischial tuberosity was shattered. A double cripple is deceiving.

CÆSAREAN SECTION IN A SOW.

By G. W. BUTLER, V. S., Inspector, B. A. I., Eau Claire, Wis.

A young sow that I had condemned at the abattoir about three weeks before on account of pregnancy gave birth to one pig, which was found dead on the morning of March 6. Upon examination another dead pig was found wedged in the pelvis. This I delivered by the aid of a strong twine slipped over its head. In a short time another was forced back and delivered in a similar way. Then a live one was born without assistance, followed soon by a fifth, which I brought to light by getting hold of its hind feet. These both died, however, in a short time. Upon further examination I could feel the tail of another, and after waiting some time for a change in position without results I decided to operate.

Cut hair from right flank, washed skin with soap and water and thoroughly soaked with sublimate sol. 1-1000. Anæsthetized sow completely with chloroform; placed her on a box; made incision about five inches long through skin, muscles and peritoneum; placed a cloth previously soaked in a solution of carbolic acid over the wound, having made an opening through it a little larger and corresponding to the incision. Introduced left hand, grasped head of pig contained in uterus and drew it well outside of incision; incised uterus, withdrew pig and enveloping membranes and closed incision in uterus with interrupted silk-worm gut sutures. A second pig was removed in a similar manner by making a second incision in the opposite horn. Closed the outside wound by one set of deep interrupted sutures, using heavy linen twine and including skin, muscles and peritoneum. Afterward smeared the outside over with pine tar. During operation instruments and suture material were in a solution of carbolic acid, and sublimate solution was freely used on hands and wounds.

The sow took some fresh milk that night and continued to eat each day. About the third day she expelled a foetal membrane which must have belonged to one of the pigs born by natural passage. The incision through the abdominal wall with the exception of a little at the lower part healed by first intention. At the lower part, however, there was pus formation and a little burrowing between the skin and muscles, which gave a little trouble. There was also a discharge of pus from the vagina for some time, probably due to mechanical injury in delivering the pigs from that passage. Notwithstanding this the sow has done well and is now in excellent condition.

I used the pine tar dressing not from preference, but because I had nothing else at hand.

There is nothing remarkable about this case or operation, but it shows what may be done, with reasonable care, even in an old barn where both dust and cobwebs are abundant.

Out of six operations of this kind in the sow I have lost three and had three recover.

I think one should always operate under a general anæsthetic, not only from a humane standpoint, but one can do much better and safer work when the animal is quiet.

PÉCULIAR SYMPTOMS IN A MULE.

By A. JASME, Savannah, Ga.

On October 17th last, I was requested to visit a mule, being

told that it couldn't stand up, except by leaning against the wall of the stable, with *the right side* of the body : would have fallen if made to rest against left side. I was then told that although the *left eye* was perfectly normal in appearance, the patient, who had been sick two days, could not see with the left eye ; this information, of course, enabled me to make a diagnosis before reaching the patient. At my arrival the foregoing was found correct and no injury could be found on the head, no history of a fall, mule eating, no fever, unable to stand without being against the stall, when it could walk around (right side touching). Of course I had to say indigestion caused it, as we are supposed to give a cause for everything under the sun. In about three or four days, the first improvement was noticed, patient being able to work in two weeks, and can see all right.

Now, I am sure there was no injury. What was the cause?

I read with interest the cases reported through the REVIEW, but it seems to me that we should profit by reading about unsuccessful treatments as well as about successful ones : the first being very conspicuous by their absence.

TWO EYELESS PUPS.

By A. JASME, Savannah, Ga.

Two six-months-old pointers, one male and one female, were brought to my office with the statement that they had never opened their eyes. Upon examination, I found the opening between the lids to be free from all adhesions, and about one third of the usual size in such dogs, they being large and fat. Further examination revealed the fact that they have no eyeballs. In one of the dogs there appears protruding through the eyelid, a small bunch of hair ; this, being pulled on, has the appearance of a skin with hair disposed in such manner as to appear to be another eyelid in the place of the eyeball. More thorough examination of the deeper parts could not be had on account of the size of the opening between the lids. On further inquiry, I found that the litter consisted of four, two dying a few days after birth, and two, now living, and as well grown and happy as any pup of six months of age. It is probable that the owner will consent to keep and breed them, and if that can be arranged you may hear from me again in the near future.

THIRTY-SEVEN VETERINARIANS took the civil service examination for meat inspector at Kansas City last month.

EXTRACTS FROM EXCHANGES.

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

OSSIFYING SARCOMA OF THE TURBINATED BONES IN A MARE—OPERATION—RECOVERY [*Prof. Coquot*].—Tumors of the nasal cavities are not as rare as might be supposed by the number of recorded observations. A half-bred filly, of three years, for several weeks has been roaring. She has a yellowish grey discharge on the right side. The face on that side is the seat of a swelling that extends upwards on a level with the eye, it is hard and not painful on percussion. Examination of the inside of the nostril reveals an elongated mass, rosy in color, hard to the touch and filling the whole extent of the nasal cavity. The animal cast, it is seen that this mass is immovable and united to the turbinated bones. The animal after preparation was thrown and secured, and as the growth could not be removed, on account of its size, through the nostril, the operation of Ruini was performed, by incision of the false nostril. But after entrance into the anterior part of the nasal cavity, it was found that the operation of Sind, the trephining through the nasal bone, was necessary. This was done by making four holes through that bone, leveling the spaces between them with shears and gauge and the tumor was then exposed in its whole extent. Its form was conical and its base resting on the ethmoid. It was made up of the two turbinated bones found in a compact mass, as hard as bone. It was removed. The abundant haemorrhage was stopped by plugging. The cicatrization went on without complication, and was completed in a week. The roaring had all gone. The histological study of the mass showed it to be an ossifying sarcoma of the turbinated bones.—(*Rec. de Med. Vet.*, Oct. 15, 1904.)

RELATING TO THE DIAGNOSIS OF GLANDERS [*Mr. Nitollas*].—May 3, 1904, a horse was brought to the Lyons School Clinic as a suspect of glanders. He had the gland, the unilateral discharge, both characteristic, but nothing abnormal in the nasal cavities. The animal was malleined. The thermic reaction was 0.3° ; therefore there was no reaction. With an emulsion of the discharge in distilled water, three guinea-pigs received an intraperitoneal injection. Two of those, a few days later, had double orchitis, which soon diminished in severity.

One of the little sick animals was destroyed. It had all the lesions characteristic of vaginitis of glanders. The bacteriological examination by Löffler's method gave negative results, while the Gram process revealed numerous microbes. With the testicular lesions another injection was made on three other guinea-pigs. There was no orchitis following, but at post-mortem there were found caseified tubercles in the liver, spleen and lungs, with some little lesions on the testicular cords. Other inoculations made with the virulent products obtained from the lesions or from cultures were followed in some cases by orchitis, in others only by lesions of internal organs. Intravenous injections killed rabbits; scarifications on dogs gave slight cedema but no ulceration. Conclusions, besides the microbes which can give rise to orchitis analogous to that of glanders, the author has found in the discharge of a horse which has no glanders, another microbe likely to produce testicular changes.—(*Journ. de Zoöt-Bulletin Veter.*, Aug., 1904.)

FORTY-EIGHT HOURS' STABULATION FOLLOWED BY DOUBLE RADIAL PARALYSIS [Mr. Chéret].—Under this heading the author relates the case of a stallion which after two days of rest was put to work, and after a short distance, 1,500 metres, was taken sick. He laid down twice and then his fore legs were taken with convulsive tremblings, frequent and sudden contraction, which threaten to make him fall. He was taken home with difficulty. He laid down and had much difficulty in rising, the hind legs only acting. The animal cannot walk, and is always on the verge of dropping on his knees. The urine taken from the bladder is perfectly clear, light yellow and without settlement. Treatment, counter-irritation on both shoulders and forearms; diuretics. The next day no change. The day after improvement is manifest. The fourth day, still better. The sixth, everything is normal.—(*Bullet. de la Soc. Cent.*, Nov. 30, 1904.) [Is it not likely for this case to be one of azoturia with manifestations on the anterior instead of the posterior legs? Of course, the urine seems to answer no—but !!! A. I.]

UPON FRACTURES FOLLOWING DIAGNOSTIC INJECTIONS OF COCAINE [Mr. Drouin].—German writers have warned practitioners of the danger that those injections present by being followed with fractures of the phalanges. Similar cases have also been observed in France. But there is, in the interpretation given by the German, an error, and such accidents must not prevent the use of the injections in cases of lameness with doubt-

ful location. The author presents a case which illustrates the pathogeny of those accidents. A horse was taken suddenly very lame, the foot merely touches the ground by the toe. A diagnosis of interphalangeal fracture is made and the animal destroyed as he is of little value and not worth treatment. At post-mortem the examination of the first phalanx shows that there is a longitudinal fracture. This injury is incomplete and the fragments are kept together by a bony piece measuring two centimetres. Let us suppose that on such wounded animals, the injection of cocaine is used ; the lameness is removed. But if to show the positive result, the animal is made to trot again and again, the fracture will become completed and then the cocaine is accused of it, while the case was perfectly amenable to treatment. Moral : Be prudent in the test ; do not repeat the examination in action ; be specially careful when the lameness is sudden, acute and very great, and always remember that there may be a severe lesion that an untimely exercise may render irremediable, when the indication (pain) is no longer there to make the animal take the necessary precautions.—(*Bullet. de la Soc. Cent., Nov. 30, 1904.*)

WOUND OF THE RECTUM—PROLAPSUS AND LIMITED DRY GANGRENE—RECOVERY [*E. Mouilleron*].—The prognosis of wounds of the rectum is generally rather serious, on account of the facility of infection by the many pathogenous microorganisms which surround them. Some cases, however, are on record showing the comparatively great resistance of the tissues involved. The following illustrates it. While having his temperature taken, a horse is frightened, makes a sudden move, the thermometer escaped the fingers of the assistant, drops in the rectum and when it is looked for, it is found broken with one end tearing the mucous and muscular coats. The wound, although superficial, is accompanied the next day with a prolapsus recti as big as a child's head, which cannot be reduced, as the membranes are very soft and there is danger of tearing them. In raising the herniated mass, a superficial gangrenous spot of the mucosa is found, measuring the size of a silver dollar. Notwithstanding this complication, the general condition is good. The next day the growth is larger, dark in color, and the slough of the gangrenous surface well outlined. It is eliminated the next day, the muscular coat is exposed, cicatrizing ; the tumor has diminished. In a few days recovery is completed.—(*Rec. de Med. Vet., Nov. 15, 1904.*)

DIAGNOSIS OF VOLVULUS AND INVAGINATION IN CATTLE

[*Destroye*.]—Rather frequent, the occlusion of the intestine following these conditions is always serious. The treatment that the author has followed has given him some success. Colza oil 2 litres, castor oil 500 grammes, sulphate of eserin gramme 0.10, given in two doses, and with that forced exercise on a very inclined plane. After considering the various symptoms which have been observed and appreciating them to the diagnostic point of view, the author gives a minute description of those which are present in the two first days, and which permit a diagnosis. After that time the case is doomed to die. *First day*.—Refuses food and drink; no rumination; has had or has yet colics; dejections rare; intestinal sounds, so characteristic of enteritis, are absolutely absent in volvulus and invagination. After colics, the animal lays on the left side, hind legs extended, often with head turned towards the flank. When he is up or is taken out he assumes the position to defecate, keeps it for awhile and expels very little faeces. By external palpation of the right flank, a sore spot may be detected. By internal exploration the obstruction may be felt. By auscultation of the abdomen no noise is detected, pathognomonic sign of the occlusion; should this be imperfect, slight glou-glou noise is heard. *Second day*.—Still refuses food and drink; no rumination; almost no defecation; no more colics; animal always lays down with legs extended. Urination more or less. Efforts at defecation are followed only with the escape of a small ball of excrements, coated or mixed with grayish and at times bloody mucus. Sudden pressure of the right flank is almost always followed by more or less sharp pain. Jerked palpation below the right flank gives sensation of liquid or semi-liquid matters in the intestines. Internal palpation reveals a lump, more or less voluminous, hard, painful when pressed upon and at times crepitating. The pain makes the animal move or promotes the sudden raising of one hind leg. If the lump, seat of the twisting or of the invagination, is not detected, the abnormal repletion of a portion of the intestine is readily felt. By auscultation, one observes the entire absence of noise, and by pushing with the head at the inferior part of the right flank, the intestinal chopping noise is heard. To resume:—On the second day there can be no doubt in the diagnosis on account of the real value of the history of the case, the precision of the signs obtained by observation and the easy detection of several symptoms on exploration which are absolutely pathognomonic.—(*Rev. Gen. de Med. Vet.*, Dec. 1, 1904.)

PRESENCE OF GLUCOSE IN THE URINE OF A STALLION WITH DOURINE [*J. Roger*].—Although this is only a single case, which needs others to confirm it, it is valuable in the differential diagnosis of dourine. A stallion was affected with the disease; diagnosis positive by clinical manifestations, bacteriology and experiments. His urine obtained in normal quantity is amber-colored, cloudy, sticky, reducing Fehling's solution and giving positive results when treated by Gmelin reaction. The presence of sugar and of the biliary pigments have always been constant. The quantity of glucose varied between 2.04 gram. and 10.75 gram. to each litre of urine. The intensity of the glycosuria was in direct proportion with the weight of the animal.—(*Revue Veter.*, Dec. 1, 1904.)

GENERALIZED MELANOSIS IN A HEIFER [*E. Bru*].—A heifer, 20 months old, was slaughtered. When examined, the carcass was cut in quarters. The aspect of the medullary canal is peculiar. A black cord extends from the first cervical vertebra to the coccygeal region. It is the largest in the dorsal and lumbar regions and extends with the nervous and vascular ramifications. On a level with the intercostal spaces, on the parietal pleura, black spots are observed; they are of various sizes. The liver is infiltrated with melanine; the heart and lungs are also filled with them. The cerebral meninges are covered with black mush, the brain is impregnated with similar substance. The melanotic infiltration exists also in the masseter and the pterygoid muscles, the inferior maxillary, the gluteal aponeurosis. The tongue, the parotids, and submaxillary glands are not so badly affected. The spleen, pancreas, thyroids, kidneys, and lymphatic glands are free from any lesion. While alive the animal was in apparently perfect health and showed nothing to make it supposed that she had such an affection. For an animal of that age, the lesions were unusually interesting.—(*Revue Veter.*, Dec. 1, 1904.)

PHENOLINE [*Eng. Bass*].—A preparation of creosote which has been tried by the author at the veterinary school of Toulouse. After giving the results of his experiments in the treatment of wounds of all kinds, in obstetrical cases and diseases of the genital organs of females, in skin diseases and parasitic affections, Mr. Bass concludes: (1) Phenoline is a good disinfectant, which may be used with advantage in the treatment of wounds and diseases of the genital organs. (2) By its antiparasitic properties, it proves itself an excellent agent in the treatment of cutaneous diseases due to vegetable or animal origin.

(3) When freely applied externally, it does not have any toxic effects. (4) It is far superior to creoline, lysol and the like.—*(Revue Veterin., Oct. 1, 1904.)*

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

A PECULIAR CASE OF CARCINOMA IN THE HORSE [*Proj. McFadyean*].—Even in cases that are frequent, there are some which run out of the ordinary, and on that account deserve attention. Such is the following. The nature of the trouble was confirmed by microscopic examination. In June last a horse was observed having a submaxillary enlargement. Tapped, no pus escaped, but it kept enlarging until finally it extended upwards towards the parotid and downwards along the neck, so as to reach the entrance of the chest. The horse had a discharge from the eyes for years; there are some new growths on the membrana nictitans. As the animal kept growing worse and his case being considered hopeless he was destroyed in November. Now comes the interest, in the post-mortem. The general condition is good. The third eyelid is covered on its anterior face by a layer of new growths. The swelling of the maxillary space, mostly on the left side, is extending upwards towards the ear and downwards along the neck as far as the front of the chest. The skin that covers it is firmly adherent to it and its dissection is accompanied with an abundant flow of yellow clear fluid. On isolating the left submaxillary lymphatic gland, which forms the tumor, the anterior lobes appear normal, but the posterior lobes are enlarged and blended with a mass of new formation extending under the parotid. The swelling of the neck seems to be made up of diffused thickening of the subcutaneous and intermuscular cellular tissue. On the left side of the pharynx there is an irregular tumor as big as a man's fist. The right lymphatic glands are not diseased, neither is the mucous membrane of the mouth, soft palate, pharynx and larynx. At the entrance to the chest is found a large irregular tumor, protruding three or four inches outside of the chest, passing between the front ribs into the thorax so as to reach near the heart. This tumor, which has taken the place of the prepectoral lymphatic glands, surrounds closely the large vessels of the anterior mediastinum and is in contact with the trachea and oesophagus. All the other organs are normal. The nature of the intermax-

illary growth, that of the pharynx, of the chest, as well as of the granulations of the eyelid, were that of typical squamous-celled carcinoma.—*Journ. of Comp. Patho. and Therap.*, Dec., 1904.)

NICOTINE AND BELLADONNA POISONING IN A DOG [*G. H. Livesey, M. R. C. V. S.*].—A fox terrier is reported dying in a fit. When seen all its muscles are in a state of clonic spasm, especially the masseters and the muscles of the neck and abdomen. The membrana nictitans covers the eyes almost entirely; the eyes are retracted in the orbits; his mouth is very moist; the mucous membranes rather pale; pulse quick and full; respiration not accelerated, extremities are cold, nose cold and dry. Deglutition seems impossible. The history is obscure; he is said to have had worms, for which he was treated. Bromide of potassium is given. New inquiries about how the dog became sick brings out the fact that previous to the fit he had vomited. On examining the rejected mass a big lump of about half an ounce of plug tobacco is found. The diagnosis is then positive—poisoning by nicotine. The dog has now become quiet, but shows signs of collapse. Strychnine is prescribed and diluted alcohol given. The next day he is well. Comparing this case with poisoning by belladonna, the author points out that in this last, there are no convulsions, that the pupil is dilated, etc. In cases of doubt, however, conclusive evidence is offered by the mouth, which in belladonna poisoning is dry or gummy, whereas with nicotine the mouth remains moist, containing saliva and mucus with probably smell of tobacco.—*Journ. of Comp. Patho. and Therap.*, Dec., 1904.)

DIAPHRAGMATIC HERNIA.—An entire pony, of great value, after an ordinary day of work, although he sweated more than usual, is found the next day in his box, lying down and refusing his food. Towards 11 o'clock he has some slight colics, which, however, are not relieved by an opiate drench. At 3 o'clock the colics continue. The temperature is normal, the pulse is 70. Diagnosis, intestinal obstruction. Appropriate treatment is prescribed. At 7 o'clock the pulse has gone up to 65, then to 80. The horse has no great acute pains. Now he stands up perfectly quiet, then he lies down on his back, resting against the wall. Bromide of potassium and chloral are administered, but without result. During the night the temperature rises to 102°, the pulse to 90, and soon it counts 112. The conjunctival coatings are much injected. The horse sits on his haunches. The condition grows worse little by little and the

horse dies in the evening. At the post-mortem there was found a rupture of the diaphragm, measuring $1\frac{1}{2}$ inches in length and through this small opening $2\frac{1}{2}$ feet of small intestine had passed, entered the thoracic cavity and became strangulated. The principal interest of the case, says the author, is the absence of any acute manifestations during life which might suggest the presence of the lesions found at the autopsy.—(*Veter. Record, Jan. 14, 1905.*)

DISTEMPER IN DOGS—PHYSALIX VACCINE [*A. Spicer, F. R. C. I. S.*].—On August 16, 1902, a young retriever, three months old, received the first vaccine. The third day following he had a swelling at the point of inoculation, as big as a pigeon's egg. On the sixth day he had characteristic eczema, and discharge from the eyes. The same day four other dogs were inoculated; they also had a similar swelling. Ten days later all the dogs received the second vaccine. Since the author has vaccinated six other dogs; three had no reaction, two had a small swelling, the sixth one also only after the first inoculation. On January 20, the first retriever was taken sick; he had a temperature of $105\frac{1}{2}$, and the symptoms of distemper, although in mild form, but would have been very sick had he not received good care and been kept in a warm place. May 25, 1903, the author vaccinated another retriever, which received the second injection June 3. On both occasions the animal had a swelling; the vaccine seemed to have taken well. October 13 this same dog had diarrhoea, ran at the eyes, his temperature raised, he had bloody feces, pneumonia and finally recovered. Another fox terrier was inoculated about the same time. The two vaccinations reacted well. Four months later he developed a typical case of distemper.—(*Vet. Record, Jan. 21, 1905.*)

RUPTURE OF THE STOMACH WITH PECULIAR CLINICAL HISTORY [*E. W. Hoare, F. R. C. I. S.*].—An eight-year-old horse received for his morning meal a small quantity of "chop." He did slight work afterwards, but worked without his usual energy. When he goes back to the stable he refuses his food and begins to salivate abundantly. From time to time he looks at his flanks, groans, but shows no symptoms of abdominal pains. The pulse is accelerated, but not weak; temperature 101; respiration normal; salivation very abundant; teeth irregular and sharp. Gargle for the mouth is prescribed and a drench of chloral left to be given if the horse gets uneasy. Suddenly he is taken very sick, lays down, breaks out in perspiration, trembles all over his body, and as the stableman gives him the drench, he dies. At

the post-mortem the abdomen was found to contain a large quantity of food. There was a large rupture of the stomach, involving the whole great curvature of the organ. It is certainly very interesting to observe that during his illness the animal did not manifest any symptoms of colic. He did not vomit either.—(*Vet. Record, Jan. 28, 1905.*)

PRACTICAL VALUE OF LAPAROTOMY FOR SOME ABDOMINAL DISEASES AND A NEW METHOD OF TREATING PROLAPSUS RECTI [*Frederick Hobday, F. R. C. V. S.*].—The author has performed the operation 473 times; 123 in horses, more than 300 in dogs and cats, the remaining in cattle and other animals. Among the indications for laparotomy are mentioned: exploratory purposes to detect obscure disease of the internal organs, for the removal of foreign body or reduction of hernia; for distokia, removal of obstructions of all natures, twist of the bowel, intussusception, prolapse of the bowel through the anus. For this trouble there are three modes of treatment: The first is to return the prolapsed bowel and keep it in place by means of interrupted or tobacco-pouch sutures. The second is that of amputation. For the third, technically termed a "proctopexia," laparotomy is performed, the prolapsed bowel withdrawn and sutured to the abdomen. The fourth method resorted to by the author is new in veterinary medicine, and consists in the narrowing of the lumen of the relaxed anus by the subcutaneous and submucous injections of sterilized paraffin wax; the wax placed in one basin containing boiling water, is thus melted and kept in that condition; another basin is at hand containing cold water; hypodermic syringe with a fair lumen needle; cotton wool swabs are necessary. The *modus operandi* is thus described: The patient placed on the table, in abdominal position, the anal region is shaved, washed with etherial soap, rendered surgically clean, and cocained. The rectum, usually empty, is swabbed with antiseptics. "The needle is then inserted, being guided by a finger placed into the rectum, and a certain amount of wax sufficient to form an artificial pillar, is inserted between the coats of the bowel. During this process, hot swabs are held over the needle to prevent consolidation of the wax, and as soon as it is completed, water as cold as possible is used in the same way to make the wax set in the tissues. In mild cases it is only necessary to insert the needle a little distance, and thus make the injections only subcutaneous. This injection is repeated either at two or four places, as the case may be." This operation, performed by Mr. F. H. in two cases, where other treat-

ment had failed, has given permanent results.—(*Vet. Record*, Feb. 4, 1905.)

INTERNAL ADMINISTRATION OF FORMALDEHYDE BY INTRAVENOUS INJECTION [*Harry Lomas, M. R. C. V. S.*].—The author was induced to use formaldehyde on account of its powerful antiseptic properties, and he has used it in connection with diseases which are fairly recognized as of microbial origin. He records three cases of purpura treated by this method. The dose in each case has been $\frac{1}{2}$ i. of a 40 per cent. solution of formaldehyde in water, one injection only being required. The solution in the three cases seemed to be strong, but it is perfectly harmless if the injection is made directly into the vein and not in the subcutaneous tissue. If any of the injection fails to reach the lumen of the vein, which is rather an unfortunate common occurrence, the result is a swelling, of various sizes, which, however, subsides gradually without any complication. The first case received $\frac{1}{2}$ i. of the solution in $\frac{1}{2}$ xx of water. He had a pulse of 72, temperature of 102.2. Swelling of the head, legs, etc. On the 7th day the pulse was down to 48, temperature 100, and in a few days had entirely recovered. The second animal in a marked condition of purpura, swellings, blotches, etc., pulse 60, temperature 103, received the first day the same injection ($\frac{1}{2}$ i. in $\frac{1}{2}$ xx). On the 4th day he had so much improved that most swelling was gone, his pulse 48, the temperature 100. The third case, also one of purpura (after strangles) received the first day $\frac{1}{2}$ i. in $\frac{1}{2}$ v. The pulse, from 56 and temperature 102, were on the fourth day down to 44 and 100 and the animal in full convalescence. In each case there was a swelling following at the point of injection, which passed off without trouble.—(*Vet. Rec.*, Feb. 11, 1905.)

A URETHRAL CALCULUS [*Retractor*].—Some while ago the author had operated on this dog, a greyhound of six years old, and as the animal had shown no complication or return of the trouble for nearly three months, it was hoped that a radical recovery was obtained. After that length of time, however, the dog, which had appeared in good health all the while, became uneasy and made ineffectual attempts at micturition. He suddenly disappeared and was found only two days after, when he showed a dull and stupid appearance and with enlarged abdomen, as if suffering with ascites; the size of the abdomen being due to an enormously distended bladder. On passing a probe in the urethra, a calculus was detected. It was removed by an incision of the canal, and with it came out a quantity of sandy

deposit. The bladder was then emptied of a large quantity of coffee-colored urine. But the condition of the dog was such and there was such probability of another attack that the animal was destroyed. At the post-mortem the bladder was found of a deep crimson color. The mucous membrane was studded with numerous shiny crystals of various sizes, from that of a pin's head to that of a small pea. There was also a great deal of sabulous material.—(*Vet. Record, March 4, 1905.*)

THE late Marcus Daly's horse stock, at the Bitter Root Ranch, in Montana, embraced more than one thousand animals in addition to the thoroughbreds and trotters. Five hundred of them were draught horses used in working the ranch.

VETERINARIANS OF WESTERN CANADA.—That excellent agricultural and stock journal, the *Farmer's Advocate*, of Winnipeg, Manitoba, is publishing weekly sketches of prominent veterinarians of Western Canada. In the introductory article the following preamble occurs: "Recognizing the importance to agriculture of the up-to-date, scientific, practical, educated veterinarian, we, from time to time, purpose introducing to our readers, by means of illustration and punctuated line, representative veterinarians of Western Canada, whose great work lies in being custodians of Western live-stock interests, by reason of looking after and preserving the health of animals. A great trade in live stock or live-stock products cannot be built up unless the animals from which such products are obtained are healthy. The standard of the profession is getting to be a higher one all the time. Modern agriculture has said, 'Farewell, horse-doctor; welcome veterinarian'; for the trained man's services are needed to inspect the meat, to stamp out contagious diseases dangerous to mankind, and by ensuring a pure article of milk to enable the country to grow healthy children."

VALUE OF MILK.—A dairyman says: "There is nothing, aside from the milk of human kindness, so necessary to the comfort of any family as the milk of a good cow. It is like oil poured upon the waters of life, it is a perfect food for the baby; it is an excellent beverage for the children; it furnishes cream for the coffee, butter for the bread, and cheese for the lunch. It shortens the pie-crust and raises the johnny-cake; even the cat and the dog cry for it. With the farmer it goes still further. It raises the calf, it feeds the pig, it pleases the colt, and it delights the chicken. Yes, and if we will only give her a fair chance, the cow will clothe the children, buy comforts for the wife, pay the taxes, and help lift the mortgage."

EXTRACTS FROM MEDICAL LITERATURE.

By E. M. RANCK, V. M. D., Natchez, Miss.

ANTHRAX.—Legge, in the third of his Milroy lectures, discusses anthrax in relation to the wool and worsted trades, to hides and skins, and to horse hair. Woolsorter's disease, or internal anthrax, is certainly much less prevalent than formerly. This is due to the regulations requiring care in the opening of the bales and removal of the damaged wool or hair, fallen fleeces, etc. Further, none of the dangerous specified wools, alpaca, pelotage, Persian, camel's hair, and mohair may be opened or sorted, except at a place where a constant draught of air maintained by a fan carries the dust away downwards. Cases are now more frequent in the rooms where carding and combing processes are carried on. The most dangerous foreign wool at present is Persian, followed next by camel's hair. Steam sterilization, were it possible, would be the best method of disinfection of wool. More careful and thorough washing of the wool would be the next best thing. Of hides and skins, those from China are the most dangerous. It is doubtful if there is any way in which hides to be afterwards tanned could be effectively disinfected. There seems to be no reason for doubt that anthrax can be conveyed by completely tanned material. As regards horse hair steam disinfection is the only effective means of removing the danger from manipulation of dangerous horse hair; but even here, absolute reliance cannot be placed on the destruction of all anthrax spores. Steam cannot be used for white hair, as it turns it yellow.—(*British Medical Journal*, Mar. 25.)

INDUSTRIAL ANTHRAX.—Legge, in the first of the Milroy lectures, deals with the 261 cases of anthrax reported in Great Britain from 1899 to 1904. Of these 88 occurred in worsted and wool workers, and 23 proved fatal: the bulk of the cases occurred in the processes of wool sorting, combing, and spinning. Fifty-three cases occurred among workers in horsehair and bristles, 17 proving fatal; the patients were principally hair curlers and brush makers. Eighty-six cases were among workers in hides and skins, at the docks, in warehouses, and in tanyards; 21 died. The cases among wool workers are confined almost entirely to places where dangerous classes of wool are used—those from Persia, Turkey, and Switzerland. No cases have been traced to the use of Australian wool. The infected horsehair may come from China or Russia: the hides and skins

from Italy or South America. The characteristic of anthrax to infect certain districts has been known for years.—*British Med. Journal, March 11.*)

THE MILK QUESTION IN CHICAGO.—The milk situation is very satisfactory at an unsatisfactory season. Of the 820 samples of milk and cream analyzed in the laboratory during the week only 14 of milk and 30 of cream were found below grade, a proportion of 5.8 per cent. This is 1 per cent. better than the yearly average of 1904 and at the most unfavorable season of the year. The director of the laboratory reports that the solitary dairy inspector notified the department that a number of shippers at Hinsdale, Downer's Grove, and Lisle, Ill., were feeding wet malt and refused to comply with the department's regulations. As a result of this notification inspectors were sent to the railway receiving platforms with orders to return all slop and malt fed milk to the shipper. They returned 89 cans in one day to the stations named. These shippers then sent their milk to a creamery in Lisle and upon learning this the department rejected all milk and cream from this creamery until every shipper who supplied the creamery with milk had placed his affidavit on file in the laboratory that he would not feed malt or brewery slops to his milch cows. As a result of this action the creamery and the department have arrived at an agreement with the railroad, by which the company agrees not to ship any more malt to these towns. Wet malt and brewery slops milk will soon be unknown in Chicago.—(N. Y.-Phil. Med. Jour., April 1.)

BILL TO PERMIT THE CASTRATION OF HOPELESS IMBECILES.—The legislature of the State of Pennsylvania passed a bill on March 21st, by 105 ayes to 28 noes, providing that it shall be compulsory for institutions in the State, interested exclusively or especially with the care of idiots and imbecile children to appoint upon their staffs at least one skilled neurologist and one skilled surgeon of recognized ability, whose duty it shall be, in conjunction with the chief physician of the institution, to examine the mental and physical condition of the inmates. If in their judgment deemed advisable, it shall be lawful for the surgeon to perform such operation as shall be decided safest and most effective to prevent procreation. The operation shall not be performed except in cases that have been pronounced non-improvable after one year's residence in the institution.—(N. Y.-Phil. Med. Jour., April 1.)

EXAMINATION OF MILK.—Stewart describes a centrifuge in

which twenty milk tubes can be sedimented at once. This machine is used as a matter of routine by the Philadelphia health board. The method of making tests follows: Milk is sedimented and a smear is made with the sediment. This is stained with Jenner's stain, and the number of bacteria, red blood cells, and white blood cells per cubic centimetre are estimated. If a specimen shows 100,000 or more cells per cubic centimetre it means that the cow from which the milk came has diseased udders or teats. The particular dairy from which the milk came is at once notified and the sick cow excluded. This method of guarding the purity of the milk supply is said to give very good satisfaction, both to the health authorities and to the dairymen.
—(*American Medicine*, March 25.)

THE USE OF MALLEIN AND TUBERCULIN AS CURATIVE AGENTS.—It is to be hoped that writers for veterinary journals and stock papers will discontinue advocating the idea that the use of mallein and tuberculin may cure either of those dreadful diseases—glanders or tuberculosis. As it is, those engaged in sanitary science and police duty find it sufficiently difficult to prevail upon those who are unfortunate enough to possess glandrous or tuberculous animals to destroy the same as a safeguard against possible infection to human beings and the probable infection of other domestic animals. It is easy for a man who owns no diseased animals to claim that he would not hesitate to destroy one if he knew it was diseased; but let the same man possess a diseased animal and he will fight its destruction to the bitter end. More especially will this be the case if he has lately read in some journal or paper that there is a possibility of its being cured.

Even if it could be positively shown that these or other agents could cure cases of glanders or tuberculosis, it is unquestionably a fact that the menace to human life maintained by the presence of such diseased animals makes, in our estimation, the attempted treatment, other than for scientific purposes, a criminal procedure. We do not believe that the use of mallein or tuberculin will, respectively, cure cases of glanders or tuberculosis, but even if such were the case our opinion would not change one iota from that recorded above.—(*Western Vet.*)

WE acknowledge a courteous invitation to be present at the annual banquet of the Iowa State College Veterinary Medical Society, in honor of the alumni and graduating class, at the Savery House, Des Moines, Iowa, May 5. The Governor of Iowa and prominent speakers will be present.

ARMY VETERINARY DEPARTMENT.

THE DEVELOPMENT OF TRYPANOSOMA EVANSI.

By D. E. HOLMES, M. A., M. R. C. V. S., MUKTESAR, INDIA.

(Translated from the German by Olof Schwarzkopf, Vet. U. S. Army.)

The study of the biology and morphology of the different trypanosomidæ is rendered difficult by their multiplicity of forms. As the results of the researches of the various investigators do not always agree, even as regards one particular variety of trypanosomidæ, Holmes tried to investigate more closely the question of the propagation of trypanosoma Evansi. He compared carefully the modifications of form in numerous stained specimens taken from the superficial bloodvessels of ponies in the different stages of the disease, as also from the liver, spleen, and bone-marrow shortly after the death of animals. Simultaneously he examined blood of diseased animals in the hanging drop. As stains he employed various methods, but that of Nocht-Romanowsky gave him the clearest pictures.

Holmes was particularly interested in the question whether a sexual conjugation precedes the multiplication of the parasite, an assumption which had been contradicted by the majority of investigators. The forms of conjugation described by Plimmer and Bradford were explained by others as phases of a longitudinal division, but Holmes again maintains that they constitute conjugation. He closely observed the various forms of the posterior end of matured parasites and found that this presents three different forms. Some parasites possess a prolonged end which runs out into a sharp point, in others it is stump and short, and in still others it is more or less oval and resembles somewhat the head of a snake.

There is every reason to look upon the first form as male parasites, the second as females and the third also as females but of a younger age. It is not seldom to observe two parasites united with their ends, so that the centrosomas lie together. In almost every such case it could be determined that the united parasites are not of the same kind, but that one showed the first type and the other was of the second or third type. It was also ascertained that the trypanosomæ which are under process of division belong without exception to the second type. Holmes further observed that in fresh blood the parasites often approached each other with their posterior ends, remaining together for a few minutes and then separating. But the agglomeration of

larger numbers of parasites by close contact with their posterior ends is the first sign of beginning degeneration.

After conjugation the division of the centrosoma of the female is first noticed, next the division of the nucleus. Frequently two centrosomas and two flagellæ develop before the division of the nucleus takes place; then follows the complete division, either by longitudinal division or by transverse segmentation. In the first case after the development of two centrosomas and two nuclei, the protoplasm gradually divides and two new parasites with flagellæ appear. It is doubtful if more than two parasites are formed by the longitudinal division of the parent. In the case of transverse segmentation, however, two to four centrosomas or nuclei appear, and the protoplasm divides in equally numerous segments which separate as amœboid corpuscles. These either develop gradually into mature parasites or they undergo further segmentation with a slow, pinal growth into maturity.

The longitudinal division takes place more quickly, is accomplished in the circulating blood and leads to a direct development of a mature *tympanosoma*. This kind of multiplication is found in all stages of surra. The forms of transverse segmentation, however, are greatly more difficult to ascertain. They are observed in blood taken during the fever period when the parasites are numerous. The amœboid corpuscles are found plentifully in the spleen, liver and marrow of killed animals or those that have just died. They are found in all stages in these organs, whereas mature parasites are few. It is thus probable that the amœboid corpuscles, after segmentation of the parent organism, are carried by the circulation into the liver, spleen and marrow, here to remain until they grow into mature parasites.

Yet there seems to be still another mode of multiplication of *trypanosoma Evansi*, the existence of which is difficult to prove directly. In almost every preparation of blood, liver, spleen and marrow Holmes noticed numerous free nuclei. They take up the stain well and are by no means in a state of decay. Some of these nuclei are naked, others are enveloped in a thin coat of protoplasm. Holmes has observed them in all stages from the free nucleus to the amœboid corpuscles. On the other hand he has frequently observed well-stained parasites in which the nucleus is about to leave the protoplasm of the organism. Thus it appears as if the nuclei which escape from the body of the organism, as also those which escape from the

body of dying parasites, have the faculty to transform themselves into new parasitic elements.—(*Berlin Thierarztliche Wochenschrift*, Dec. 22, 1904.)

Remarks.—This concise article is not only interesting but valuable. Little new has been added of late to our knowledge of the trypanosoma Evansi. The latest contribution from American sources, the report of the Biological Laboratory in Manila, is little more than a rehearsal of former experiments. A great deal of work has been done there in a short time, and the result is superficiality. Some conclusions reached, as for instance the recommendation to destroy the deer and other wild animals which are supposed to harbor the parasite, are so far fetched as almost to be devoid of common sense. One can draw faulty conclusions from correct premises, and the absence of veterinary counsel, if not in the purely bacteriological work at least in clinical veterinary control, is very apparent in many pages of the report. It is not sufficient to scan the veterinary literature and record veterinary publications on surra, but a live veterinarian attached to the Biological Laboratory in Manila would have saved the authors of the report from many errors which they have unconsciously perpetrated from want of the most elementary veterinary knowledge.

The merit of Dr. Holmes' investigation lies in its specific object. We know none too much of the life history of trypanosoma Evansi, and while some of his observations were already hinted at by previous investigators, he has greatly cleared up some doubtful points. If the results of his investigations are confirmed by others who have the opportunity to follow them up, a new field of vision as regards the propagation of surra may open before us. The theory of the propagation by flies alone has never deeply penetrated into the conviction of those veterinarians who have clinically observed the spread of surra. We were stunned at first by the newness of the theory, but gradually our doubts were strengthened. Dr. Nockolds, first cavalry, in his last two articles on surra (A. V. R., Dec., 1902, and May, 1903,) speaks strongly against this theory, and he has seen a great deal of surra. I myself had never seen surra until the spring of 1902, when I went to the Pasay Cavalry Barracks near Manila, where Dr. Ernst, that earnest, unpretending and thorough-going veterinarian of the Quartermaster Dept. there, showed me the first horse dying from surra under awful agony. I observed the poor animal for a while and then, looking about me, asked him: Where are the flies? With a gentle, sarcastic

smile he replied : We have had no flies so far this season ! Yet, new horses were constantly coming down with surra in the absence of flies. At another station, later on, I noticed untold numbers of flies of different varieties, so many as to be almost unbearable to men and horses, but there was no surra and there had not been any surra. When I invited the attention of this fact to a would-be bacteriologist, he explained to me by saying : They are not the right kind of flies ! But the fact remains with me up to this day, that I never had the good fortune to see the right kind of a fly, although I closely observed many cases of surra before I left the Philippine Islands.

No one doubts the transmission of surra by biting flies as *one mode* of the propagation of the disease. The scientific proof is overwhelmingly for this theory. But there must be another more common mode of propagation, although any reference to such is sneered at by the fly theorists. I have the greatest respect for laboratory research and a like respect for the workers in this field of arduous labor, principally because I have done considerable bacteriological work myself in former years. But I also know from personal experience that nothing is so liable to make one a confirmed fanatic on theoretical issues as continued and exclusive laboratory work, and I am pretty certain that the fly theorists belong to this class, because they will not listen to clinical evidence which is to the contrary. I earnestly desire to encourage our young army veterinarians to pursue veterinary bacteriology in its true spirit, never forgetting that laboratory work must be controlled by clinical work if it is to lead to broad-minded conceptions and if it is to bear applicable results. While we have no veterinary laboratory in our army, we may have one in the future, and it is to the younger colleagues that we must look for practical results.

As far as surra is concerned we army veterinarians have all reason to long for practical results. The usefulness of the army horse is almost put to question if surra should ever appear among the cavalry and artillery in a future war of any magnitude. It would hinder, if not stop, all forward movement which underlies the gospel of offensive tactics so dear to our strategists. While the English army veterinarians have succeeded in stopping surra in India by recognizing infected districts and forbidding the feeding of the grass and the drinking of water in such districts, the prevention of surra by the fly theory in the Philippines by smearing all abrasions on horses with ointments, etc., etc., has born no fruit, and if we trust the reports of our veter-

inarians there, the gradual confinement of surra into certain localities is wholly due to an enforcement of hygienic measures.

What is needed, therefore, is just such research as this of Dr. Holmes diving deep into one question at a time, and not attempting the solution of many simultaneously. We need more light on the parasite if we want to unravel the true causation of surra. What hinders the assumption that the amoeboid corpuscles and the liberated nuclei of Holmes are carried outward by the emissions of the horse, say by the urine, and lay dormant until a rainy season brings forth the impetus to the completion of their life cycle. Do we not have similar instances in the spores of bacilli? Do we not find amoeba in water, in fact is not stagnant water their natural habitat? Of course, this is only a hypothesis, but one worthy of following up by investigation, and if it is proven that the flight of my mind has been running into a wrong direction, we shall have learned one more point worth knowing in the causation of surra. . . . (O. S.)

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AMERICAN HORSES AS SEEN THROUGH ENGLISH EYES.

"Major James Moore, of the veterinary department of the British army, in the course of a recent lecture on the horse supply of various countries with relation to military service, estimated the equine population of the world at 80,000,000, which is 5,000,000 more than the estimate of the United States Department of Agriculture. He estimates the horses in the Western hemisphere number 25,000,000, of which the United States and Canada have 19,000,000 and 2,750,000 mules. Major Moore has a high opinion of the value of American horses and mules for military uses and believes that the quality of the animals is steadily improving. He considers that the 107,511 horses and 80,524 mules purchased in America by the British government during the Boer War were worth all they cost, even though prices were high. To the American mule, that modest, patient, potential servitor of our military institutions, Major Moore pays this well-deserved tribute: 'Though my paper relates only to horses, I am loth to close my altogether inadequate remarks without mention of the American mule—peer of mule kind—the most handsome, hardy, useful, and satisfactory animal extant, and of greater average value than horses in his own country. From the small miner, 12.3 to 13 hands, to the magnificent heavy sugar mule, 16.2, he is bred in Missouri and contig-

nous States, also in Texas, and his market is for mines, lumber trade, and the cotton and sugar fields of the south. I take off my hat to the St. Louis mule that was regularly hunted with one of our best English packs some few years ago. Truly, he was worthy of the honor of a pink coat.'”—(*Army and Navy Journal*, April 8, 1905.)

This testimony of our English army colleague as regards the American horses and mules which have served the English army so well in their warfare against the ever-mounted Boer is, indeed, very pleasing. According to the above statement, the English army must have purchased over 200,000 of our horses and mules, and they had, therefore, good opportunity to test them and compare them with their own horses and those which came from Europe, South America and Australia.

No doubt, many officers and veterinarians of our army would ask: How and where did the English find these highly praised American horses? For several years past the increasing inferiority of horses adapted for cavalry service has been noted in our military journals, particularly in the *Journal of the U. S. Cavalry Association*. This censure has come from different regiments, widely scattered throughout the United States, and the complaint seems, therefore, to be universal.

It will not be amiss, at this time, to chronicle how the English purchased their horses in this country, as observed by the writer. Early in 1898 I happened to be in the New York horse marts with an intending purchaser, when I noticed two gentlemen, evidently foreigners, examining some horses in a manner different from ours. Inquiring who they were, I was told that they were English officers purchasing horses for South Africa. My curiosity was aroused, and I observed their proceeding. They evidently had a predilection for a bunch of Canadian horses of the hunter type, strapping, big horses with plenty of bone and muscle and with more daylight under them than our own officers and men would like. One gentleman, perhaps an officer, was taking notes of the results of the examination, while the other, evidently a veterinarian, performed the examination. He rolled up a long tape-measure and proceeded leisurely to take the lengths of the shoulder, back and croup, and the circumferences of the forearm, carpus, tarsus, etc. I could keep still no longer and ventured to ask: Do you take these measures of all the horses you examine? To which he replied in real English: Bless your soul, Sir, no! Then why do you take them on this horse, I inquired further, to which came the answer: To get

the measures of your American horses, Sir. There was some emphasis in this reply as if this was all of the conversation he wanted to have with me, and remembering that a bystander is a nuisance to all examining veterinarians, I started to go, saluting him with the American "bye-bye," in which he pleasantly joined saying: "Bye-bye, Doctor." As I had not introduced myself, I was rather pleased to know that I looked like a veterinarian in the eyes of an English colleague.

There were two reasons why the English found and secured suitable horses for their cavalry. Firstly, they knew what they wanted, they have come down to a certain type of horse, whereas in our army no two officers agree on the question of what type constitutes the best cavalry horse. Secondly, the English government paid prices ranging from \$150 to \$200 for troopers, and up to \$250 for officers' chargers, and this at a time when horses were plentiful and very low in value. Our government, however, pays an average of \$85 to \$115, seldom more, even today, when horses are few and again high in value.

There are some other reasons why we don't get the right class of horses into our cavalry, one of which is the growing tendency of the farmer-breeder to raise grade draft stock. Where formerly we found stallions of trotting stock, and in the range countries now and then a thoroughbred producing with the Indian pony some light, wiry horses, suitable for saddle purpose, we see now nothing but Percheron and Shire stallions. Whether this change is going to be more profitable for the breeder and better for the country I shall not venture to say, but it certainly does away with the production of horses suitable for cavalry purpose. The time is, therefore, nearing fast when our Government will have to take the initiative in securing saddle-bred stallions for distribution among such breeders as have a suitable foundation stock to grade up a serviceable cavalry horse, or by entering into a campaign of education among those breeders who are willing to cast their lot in the breeding of horses for our army.

(O. S.)

DR. CHARLES E. COTTON of Minneapolis, is about to begin the erection of a modern hospital. It will be a two-story brick structure, 45X125, supplied with the American Sanitary Stall System, and the King system of ventilation. There will be wards on the second floor for small animals, operating room with table on the lower floor, and every appliance that is known to modern veterinary surgery.

CORRESPONDENCE.

RECURRENT PARTURIENT PARESIS.

AGRICULTURAL COLLEGE, MISS., April 9, 1905.

Editors American Veterinary Review:

DEAR SIRS:—In continuation of the discussion found in recent issues of your journal, I beg leave to submit the following cases:

No. 1.—A four-gallon Jersey cow, fourth calf, cow calved night of March 18, 1905, and during the day following seemed to be doing well. At 4 P. M. owner carefully examined cow, as he was to leave for a few days absence, and remarked that she was getting along as well as he could wish. At about 4.45 P. M. the first symptoms of the fever developed. At 5.30^o, she was down, unable to rise. I was called to treat the case and arrived at 6.30 P. M. I had left my oxygen outfit some miles in the country, so hurriedly made a sterilized air arrangement from an ordinary household, soft rubber, enema, bulb syringe. I cut rubber tube between bulb and milk tube and inserted a 10 c. c. pipette after packing it with antiseptic cotton. Cow was in state of complete paralysis, but had not lost reflexes. Udder was properly prepared for operation, milk tube sterilized, and air injected. Each quarter was moderately filled with air and teat tied with soft woolen string. Cow was catheterized, propped on sternum with sacks of cotton seed hulls, and left with instructions to remove the strings at 11 P. M. and milk out all air at same time. The instructions were followed. At 11 P. M. cow was up and, evidently, much improved. At 6 o'clock the next morning, she seemed entirely recovered. However, on the evening of the same day, March 20th, a recurrent attack took place and this seemed more severe than the first. The same treatment was used at 7 P. M., and instructions given to remove the pieces of woolen tape from teats at 11 P. M. but not to remove the air from udder until 6 A. M. the next day (21st). Result, a complete and rapid recovery.

No. 2.—Jersey cow, third calf, calved March 30th. On afternoon of 31st cow went down, complete paralysis of extremities. She suffered more than any similar case I have ever seen. There were recurrent spasms of muscles of neck and head. Owner had tried to drench her, but she refused to swallow, he said. I arrived 8 P. M., prepared udder for operation and injected steriliz-

ed air into each quarter. Tied teats with soft strips of cloth. Owner said spasms had started about an hour previous to my arrival. They lasted from one-half to one minute and recurred about every three minutes. After treating the udder, I gave hypodermic of $4\frac{1}{2}$ grains morphine, abstracted four quarts blood from neck, and tried to prop animal up. She would make no effort to remain on sternum. A straw bed was arranged and cow blanketed. The cloth strings were removed at 11 P. M., when she was found up in her natural recumbent position. Air removed from udder at 6 o'clock the next morning, when cow seemed as well as ever.

No. 3.—Grade Jersey cow—calved April 3d, 1905; went down with milk fever the morning of the 5th. I did not get to see her until 12 M. of the 5th, at which time she had passed almost beyond hopes of recovery. The same treatment was followed as in preceding cases. At 2 P. M. she was lying in natural position and at 4 was walking around. The pieces of tape were removed at 4 P. M. and air removed at 6 o'clock. On the following day cow was inclined to remain down, but could readily move around normally. Had I left the air in udder longer am inclined to believe complete recovery would have been more rapid. From my experience with this treatment, it appears to me that the udder should not be relieved of air under eight to ten hours.

No. 4.—Grade Jersey cow, about 5 years old, calved April 8th, went down the night of 8th. I was called early morning of 9th, but cow died before I could inflate the udder.

No. 5.—Jersey cow, six years of age, fourth calf ; calf dropped afternoon of April 14th ; cow became affected during the following night. On morning of 15th was found lying in the mud, as she had managed to get out of the barn. She had, evidently, been down the greater part of the night, judging from the manner in which she had moved around. She was also exposed to the drizzling rain that occurred during latter half of the night. When found she had lost entire use of her legs, and was unable to remain on sternum. Before I arrived, at 8.30 A. M., reflexes were almost lost. Treatment :—Prepared udder for injection. Inflated with air, and tied teats. Removed the cloth strings from teats at 2 P. M. Cow up at about 4.15 P. M., and was lying in natural position at 10 A. M. Milked out air at 5 P. M.

Yours very truly,

J. C. ROBERT.

EXPERIENCES WITH MALLEIN—REPLY TO DR. ACKERMAN.

MANILA, P. I., Feb. 24, 1905.

Editors American Veterinary Review:

DEAR SIRS:—Upon reading the questions asked by Dr. Ackerman in regard to mallein as a test for glanders, it induces me to express my views on some of the many points asked, taking into account a considerable experience I have had with glanders and mallein. At one time I could only obtain the commercial product brought from the States, and with such I lost all faith, but later I obtained some from the serum laboratory in Manila and the results were highly gratifying.

My experience has been that in acute cases the mallein helped to bring the disease to an early crisis and development of the visible lesions, but with chronic cases I have not had any experience.

As a curative agent I have not seen any results in cases which were pronounced, and it is only claimed as such in cases which show no visible lesions, but show reaction. These cases are, in my opinion, not proven to be glanders by the mallein reaction, since we often find animals which show some of the signs of a reaction, such as rise of temperature and slight swelling at seat of injection, which never develop any further symptoms after the first reaction, but continue at work and keep in a good healthy condition. These cases, as a rule, have a sudden or possibly gradual rise of temperature, but this may drop suddenly, and the animal does not show any prostration from the test, whereas one with a true reaction shows great prostration, stiffness, and a large swelling at seat of injection. The high temperature falls gradually, taking two or three days before going down to normal, animal refuses food for the same time and the local swelling subsides as gradually as the temperature.

I have had under observation for about 18 months an animal which apparently reacted, but did not show the symptoms of a typical reaction, so continued the animal at his duty, that of a cavalry horse. The animal has never been sick or shown any rise of temperature and remains fat and in fine condition. From my observations I have concluded that there are other causes than glanders which may produce a reaction, but cannot explain. I think one must take into consideration the temperature chart, general appearance and clinical signs with the mallein test, before pronouncing the death sentence upon suspects.

I do not wish any one to believe that I am opposed to the mallein test, as I am not, and always use it on animals showing symptoms of glanders, and use it as an aid to further my diagnosis. One should always be supplied with a reliable product and if possible apply the test to all animals before giving a positive diagnosis.

I trust that we may hear from others, who have had a long experience with the test. It is in this manner that these knotty questions may be settled for the good of all in the profession.

CHAS. H. JEWELL,
Veterinarian 13th Cav., U. S. Army.

A GOOD WORD FOR ESERINE AND STRYCHNINE.

CRESTLINE, OHIO, March 21, 1905.

Editors American Veterinary Review:

DEAR SIRS:—With only four years of practice and only two years of experience with eserine and strychnine, and with the good results that it has given me, I can hardly resist the temptation of reporting it to my brother practitioners. These two remedies have repeatedly saved many a good horse for me, and have saved many a good hour of sleep where otherwise we stay in cold barns waiting for hours on results of other treatments on those prolonged cases of so-called colic.

I find in my country practice that eight out of every ten cases of those so-called cases of colic are the result of an impacted bowel or acute indigestion. In either case, if my patient has a good strong heart, I never hesitate a minute to give a hypodermic injection of eserine, and with gratifying results. I always give eserine either intratracheally or subcutaneously, and in twenty minutes I follow the eserine injections with strychnine (gr. j) hypodermically. Then I give some good antispasmodic to keep the patient quiet till the eserine works, which I find it does in from forty minutes to one hour. My idea of this treatment in these cases is to throw the secretions into the bowels and to cause a quick and active purgation. Usually when the bowels are emptied my patient has relief, and increased peristalsis. The strychnine I give to keep up the heart and to rouse up the nervous system. I have some failures, but usually in cases above mentioned when I get them in due time, I find I am able to save 85 per cent. of them. My solution of eserine is made as follows: I always use Merck's eserine sulphate in hermetically sealed tubes. I use a 5 c.c. syringe. I sterilize a small bottle and put in 25 c.c. of boiled water and add 5 gr. eserine sulphate;

then add 5 minims of pure carbolic acid, and cork the bottle tight, never removing the cork till empty. Then I draw the solution out of the bottle by inserting the needle through the cork, and every time I fill the syringe by so doing I get 5 c.c. of solution, or 1 grain of eserine. If the solution remains in the bottle for any length of time it will become red in color. Some writers think when this becomes red it loses its strength, but my experience is that it is better. This solution can be used either intratracheally or subcutaneously, just as desired. We get quicker action from tracheal injections, but I prefer the injection under the skin just back of the scapula.

I do not claim this treatment to be perfect; neither do I think it to be imperfect; but I think it is far superior to any other treatment for these cases.

I do think veterinarians should unite in an effort to create a more practical and scientific principle in handling these cases, and if found satisfactory we should endorse the work of any new methods that may come up, and show that an effort is being made in this line.

Z. W. SEIBERT, V. S.

EIGHTH INTERNATIONAL CONGRESS OF VETERINARY MEDICINE.

The following letter to the veterinary profession has been issued by the General Secretary:

The interest manifested in every country in the Congress to be held at Budapest increases from day to day. In addition to the local committees already formed another has just been constituted at Dresden under the presidency of Prof. Dr. Ellenberger, and includes among others M. Noack and M. Reimaun, President of the Union of Veterinary Societies of Saxony. This committee has issued a warm appeal to all our *confrères* in the Kingdom. The local committee at Belgrade includes M. Popovits, President, and MM. Sava Voukosavlyovits, Veterinary reporter to the Minister for War. Pierre Theodorovits, Veterinarian of the Prefecture of Belgrade, and Dr. Georges Nitrovits, Military Veterinarian. The Servian Committee has received 31 acceptances up to now. At Sofia the president of the local committee is M. Tuleff, Ministerial reporter.

Dr. Salmon, of Washington, and Dr. Liautard, in Paris, have written the General Secretary to the Congress that they will call the attention of all interested through the societies and the AMERICAN VETERINARY REVIEW.

Very recently Dr. Hagemann, professor at the Agricultural Academy at Bonn; Piot Bey, reporter to the Egyptian Govern-

ment; MM. Lienaux, professor at the Higher School of Veterinary Medicine at Brussels, and Tokishige, professor at the University of Tokio, have undertaken to edit reports on several subjects.

The Secretariat will do its best to send as soon as possible to the Members of Congress the original text of the reports with a *résumé* in several languages. Twenty-two have already come to hand and will be issued shortly. It is greatly to be desired that the other papers promised may be sent in by the end of March at the latest, so that they may reach the members in time to be of use at the Congress.

E. DE RÁTZ, *Gen. Sec.*

FLEAS AND DISEASE.

SANTIAGO DE LAS VEGAS, CUBA, April 4, 1905.

Editors American Veterinary Review:

DEAR SIRS:—No less epoch-marking than the announcements first made of the connection of mosquitoes with malaria and yellow fever, is the news which now comes through Dr. Ashmead, the leprosy expert of New York, that Dr. Carrasquillo, of Bogota, has found the *Bacillus of Hansen* in the intestinal canal of fleas. The rapid progress of leprosy after introduction into some of our flea-infested southern cities, from local endemicity to alarming epidemicity, is, according to Dr. Ashmead, probably to be credited to inoculation by flea bites.

In connection with the investigation of the relation of fleas to bubonic plague, it has already been shown by the writer (*Proc. U. S. Natl. Museum*, Vol. XXVII, 1904) that the fleas of rats in the warmer regions of the earth are close relatives of the flea specific to human beings, and thus far more likely to bite human beings than are the fleas of rats in the colder regions, which are only distantly related to *Pulex irritans*. It is now necessary to know if any of these southern rat fleas—of which there are a number of species—voluntarily bite human beings.

These investigations, and now the new lines brought into striking prominence by Dr. Ashmead's announcement, make it of first importance that a complete study be made of all the species of fleas occurring on rats, mice, dogs, cats, and human beings throughout the United States and tropical America, since any well-founded medical and bacteriological investigations of the subject must be based on a thorough scientific knowledge of the fleas themselves, just as in the case of the mosquitoes in their relation to yellow fever. The utmost gravity of the possi-

bilities involved not only justify but render imperative a careful and complete survey. The writer has in progress such a work, in continuation of extensive papers on the fleas already published. Residence in the tropics and in a leprosy centre, together with the hearty coöperation of Dr. Howard, of Washington; Dr. Lutz, of São Paulo, Brazil; Dr. Carter, of the University of Texas, at Galveston, and others, has made possible a good beginning. It is hard to see how anything like a complete survey could be made without also the active coöperation of college and medical men in every part of these regions, the Hawaiian Islands, and the tropical regions of the Far East. The simplicity of the apparatus needed (tweezers, small homœopathic vials of alcohol, and several rat traps), and the ease with which material can be gathered from rats, dogs, cats, and human beings, should make possible the ready coöperation of all biologists and medical men, and a hearty invitation is herewith extended to all such and to any other persons interested. As large series as possible of specimens should be taken and full data as to locality, host, etc., should be inserted in every vial. A direct report will be immediately returned for all specimens sent either to the writer or to Dr. Howard, Government Entomologist in Washington, D. C., U. S. A., and full published credit will later be given for every sending.

It will greatly facilitate the rapid progress of the work if entomological, zoölogical, medical, and pharmaceutical journals the world over will kindly copy this notice. C. F. BAKER,

Estacion Agronomica, Santiago de las Vegas, Cuba.

MONTANA MEAT AND MILK INSPECTION LAW INOPERATIVE.

HELENA, MONT., March 28, 1905.

Editors American Veterinary Review:

DEAR SIRS:—I send you under separate cover a pamphlet containing Governor Toole's vetoes, in which on page 15 you will find his veto on the so-called Cow Bill or a bill introduced to provide for the payment of cattle slaughtered by my department on account of tuberculosis.

Our sanitary law provides that three appraisers shall be appointed to determine the value of these animals, and in nearly every case the appraisements were so excessive as to make it impossible for any State to pay them. They ran from \$25.00 to \$72.25 for common cattle. The Governor very properly vetoed this bill and gives his reasons on page 15.

On page 30 you will find his veto of the Meat and Milk Inspection Bill that was introduced by disgruntled dairymen throughout the State for the sole purpose of repealing our State inspection law. You will see from the Governor's veto of this bill, that he certainly had very excellent reasons for so doing.

Since House Bill 176 has been vetoed, it leaves our old State law in force without any appropriation, however, to pay the inspectors.

Some of our inspectors are going to continue the work, depending upon the next Legislature to reimburse them.

We had a very interesting fight during our past session of the Legislature, the dairy lobby being much in evidence. The only thing they accomplished, however, was to prevent our obtaining an appropriation for the continuance of the meat and milk inspection.

I presume you received a copy of the Meat and Milk Inspection Report. If so, you know that the dairymen had good cause to fight any inspection, since we had an enormous number of prosecutions.

Yours truly, M. E. KNOWLES.

OPERATION FOR EMPYEMA.

QUINCY, MASS., April 2, 1904.

Editors American Veterinary Review:

DEAR SIRS:—I would like to know if you can refer me to any veterinarian who has successfully operated for empyema.
Very truly,

FRANCIS ABELE, JR.

OBITUARY.

A. D. EISENMAN, V. S.

This well-known veterinarian died March 28, at his residence, 313 East Jacob Street, Louisville, Kentucky, after a lingering illness from pulmonary trouble. He had been in bad health for two years, being confined to his room for two months. He was born in Louisville in 1863 and spent his entire life in that city. He graduated from the Ontario Veterinary College, when only twenty years of age, and was a successful practitioner, race-horses being his specialty. He was unmarried, and was a business partner of his brother, Dr. Frank T. Eisenman, who survives him. He was a member of the Kentucky Veterinary Medical Association.

COLLEGE COMMENCEMENTS.

ONTARIO VETERINARY COLLEGE.

The 39th annual commencement exercises of the above college were held March 30. There were ninety-one in the graduating class, from every part of the Canadian Dominion, many States of the Union, the West Indies, Argentine, and Great Britain. The following constitute the long list of graduates for the session of 1904-5:

F. J. Anderson, Thompson, North Dakota, U. S.; Francis W. Anderson, Highland, New Jersey, U. S.; H. Howard Blair, Belvidere, New Jersey, U. S.; W. E. Baker, Demorestville, Ont.; Clyde F. Beamer, West Union, Iowa, U. S.; Geo. W. Benjamin, Rushford, New York, U. S.; James W. Broadfoot, Russell, Man.; A. H. Brother, Toronto Junction, Ont.; E. A. B. Bruce, Cheltenham, England; Frank A. Bunnell, Waverly, N. Y., U. S.; Reuben A. Byer, Markham, Ont.; Edward Bailey, Uxbridge, Ont.; Geo. A. Campbell, Mohawk, Ont.; Ralph W. Carmack, Dana, Ind., U. S.; W. F. Carr, Buffalo, N. Y., U. S.; Frederick Chapple, Barline, Ont.; Ernest E. Chase, La Forge, Wis., U. S.; Geo. L. Clark, Columbia City, Ind., U. S.; A. R. Crooks, Scotland, Ont.; Henry A. Coxe, Milton, Ont.; Benj. Matt. Deavenport, Starkville, Miss., U. S.; John A. De Cow, Middlemiss, Ont.; George H. Dedolph, Tigerton, Wis., U. S.; J. D. Delaney, Independence, Iowa, U. S.; Fred H. Dettman, Pigua, Ohio, U. S.; Thomas Drown, Mitchell, Ont.; Cyren B. Estev, St. Cloud, Minn., U. S.; John F. Fulcher, Forest, Ont., W. H. Galbraith, Brampton, Ont.; H. J. Gordon, Teeswater, Ont.; Nathan G. Gray, Ledyard, Conn., U. S.; Edward S. Greenwood, Douglas, Man.; Archie L. Haggerty, West Winfield, N. Y., U. S.; Henry J. Hendrickson, Syracuse, N. Y., U. S.; William Hilton, Winnipeg, Man.; Robt. Lee Humphrey, Bluemont, Va., U. S.; Mell Frazer Jackson, Auburn, Ala., U. S.; Conrad J. Johannes, New Dundee, Ont.; Micajah J. Jones, jun., Blanchester, Ohio, U. S.; A. Star. Keeler, Ottawa, Ill., U. S.; Harmon R. Kidder, North Warren, Pa., U. S.; William Kime, Chatham, Ont.; Anson Knight, Sardis, B. C.; J. Franklin Lavery, Sunderland, Ont.; Andrew N. Lawton, St. Thomas, Ont.; Wilfrid Lenton, Wawanesa, Man.; Albert M. Lloyd, Keswick, Ont.; F. H. S. Lowrev, Picton, Ont.; James D. McCarten, South Bend, Ind., U. S.; Harry C. McCartney, Ellenville, N. Y., U. S.; Robert A. McCartney, Ellenville, N. Y., U. S.; James

A. McCreight, Brandon, Man.; James T. McFadden, Woonsocket, R. I., U. S.; Donald W. McLeish, Parkhill, Ont.; F. A. McNally, Toronto, Ont.; J. C. McNeill, Walkerton, Ont.; George Ulius Marchand, Mt. Eaton, Ohio, U. S.; C. A. Matthew, Coalport, Pa., U. S.; Wm. A. Meiser, Meiserville, Pa., U. S.; James T. Molison, Natick, Mass., U. S.; Fred. J. Montague, Caro, Mich., U. S.; C. F. Moore, Lumsden, N. W. T.; David B. Morgan, Fayetteville, Ark., U. S.; Harry E. Myers, Sycamore, Ohio, U. S.; G. Wyndham Newton, Cheltenham, England; N. Peter Olsen, London Junction, Ont.; David R. Philp, Rochester, Montana, U. S.; Walter W. Pugh, Toronto, Ont.; David H. Pyke, Elmwood, Ont.; H. H. Ross, Burford, Ont.; Robert K. Russell, Toronto, Ont.; Frank A. Scott, Traverse City, Mich., U. S.; W. A. Scott, Rockford, Nicola Valley, B. C.; Harry B. Sears, Pittsfield, Mass., U. S.; Charles H. Solt, Arlington, Ohio, U. S.; O. L. Spidell, Wilmot, Ohio, U. S.; Chas. B. Stirling, Mt. Pleasant, Mich., U. S.; Oliver C. Stoner, Fernhill, Ont.; Cecil L. Thompson, Newton, Kansas, U. S.; Henry N. Thompson, Boissevain, Man.; John Thompson, Strathroy, Ont.; Milton R. Thynge, Morton, N. Y., U. S.; A. La Verne Tiffany, Dimock, Pa., U. S.; Oscar H. Titterud, Constance, Minn., U. S.; Juan C. Torngquist, Buenos Ayres, Argentina; Geo. W. Valentine, Waterville, N. Y., U. S.; John C. Wainright, Strathcona, N. W. T.; Percy K. Walter, Pincher Creek, Alta., N. W. T.; Carr W. Watson, Hapswell, Maine, U. S.; Milton B. West, Elsie, Mich., U. S.; Hugh W. Young, Petrolia, Ont.

First prize in diseases and treatment was won by Cecil L. Thompson, second to H. H. Ross, third to F. A. McNally and W. Lenton. In materia medica, first prize to R. A. Byer, second to Cecil L. Thompson, third to Alfred H. Brother. In chemistry, first prize to C. F. Moore, second to A. Knight, third to F. A. McNally. In pathology, first prize to W. Lenton, second to N. Peter Olsen, third to C. F. Moore. In physiology, first prize to W. Lenton, second to N. Peter Olsen, third to F. A. McNally. In anatomy, first prize to N. P. Olsen, second to W. Lenton, third to M. J. Jones, Jr. In entozoa, first prize to E. A. B. Bruce. A gold medal given by Toronto Industrial Association for the best dissected specimen, was awarded to D. B. Morgan, second prize to A. L. Tiffany, third to C. E. Call and W. A. Meiser. The gold medal of the Ontario Veterinary Association for the best general examination was awarded to W. Lenton. There was a long list of honor men and prize-winning juniors.

McKILLIP VETERINARY COLLEGE.

The commencement exercises of this college were held on March 24th, at Steinway Hall, Chicago, and many friends of the faculty and graduating class attended.

The address to the class was delivered by Dr. George S. Butler, professor of *materia medica* at the College of Physicians and Surgeons, Chicago. Dr. M. H. McKillip conferred the degree of M. D. V. upon the following : H. S. Cawsey, W. P. Collins, V. F. Colson, G. Casper, W. S. Eddy, E. English, J. C. Exline, C. H. Herrold, A. N. Hughes, E. H. Humphrey, L. J. Leppla, G. D. Little, A. A. Lochard, O. C. Mayer, D. A. McArthur, D. McKenzie, R. R. Ramsey, G. W. Reynolds, P. McDonald, J. Scott, J. Sevenster, E. Swim, M. S. Suttle, R. Donaldson, R. R. Teidt, W. Thompson, L. J. Topmiller, F. J. Trafton, M. S. Kennedy, A. J. Williams, A. E. Winsor, and G. Z. Woods.

"I APPRECIATE very much the improvement in the literature of the REVIEW and think it compares well with the best medical literature."—(*Francis Abele, Jr., Quincy, Mass.*)

IT is said that upon what appears to be reliable authority, a gang of horse thieves operating in certain of the Western States have adopted the ingenious plan of bleaching the hair of stolen horses. The bleaching is done by means of rubber blankets and sulphur vapor.

LITERATURE FROM BUREAU OF ANIMAL INDUSTRY.—We acknowledge receipt of the following bulletins and circulars from the Department of Agriculture: "Experiments Concerning Tuberculosis—Part II: The Comparative Virulence of Human and Bovine Tubercl Bacilli for Some Large Animals," by E. A. de Schweinitz, Ph. D., M. D., and M. Dorset, M. D.; "Etiology of Hog Cholera," by Drs. Dorset, Bolton and McBryde; "Foot Rot of Sheep," by John R. Mohler, V. M. D., and H. J. Washburn, D. V. S.; "The Gid Parasite (*Cœnurus Cerebralis*): Its Presence in American Sheep," by B. H. Ransom, B. Sc., A. M.; "Tuberculosis in Cattle," by Drs. Salmon and Theobald Smith; "Diseases of the Stomach and Bowels of Cattle," by A. J. Murray, M. R. C. V. S.; "Texas Fever," by Drs. Salmon and Smith; "Anthrax in Horses, Cattle and Men," by Drs. Salmon and Smith; "Abortion," by Jas. Law, F. R. C. V. S.; "Osteomalacia, or Creeps, in Cattle," by V. T. Atkinson, V. S.; "Ophthalmia in Cattle," by M. R. Trumbower, D. V. S.

POSSIBILITIES OF HYBRIDISING.

(From the "Veterinary Record," through courtesy of Benj. D. Pierce, M. R. C. V. S., Springfield, Mass.)

Enclosed are three photos depicting a most remarkable case of hybridisation in the second generation and presenting to us an altogether unique case from the scientific point of view. The snapshots were taken at the Ghezerch Agricultural Show, Cairo, and forwarded to a gentleman in this neighborhood (a M. F. H.), to whom I am indebted for the information, by a friend of his in the Agricultural Section of the Department of Technical Education, Egypt. The dam is a Spanish mare, sire an Egyptian mule, while the twins are respectively a horse and a mule.



SIRE. TWIN FOALS. DAM.
EGYPTIAN MULE. PONY. MARE. SPANISH MARE.

The fact of bringing forth at a birth two foals of a different species is a very peculiar occurrence, even if the sire had been a donkey, but when we take into consideration the fact that the father was a hybrid, which learned men tell us will not breed, owing to unequal division of the chromosomes in the karyokinesis of the nucleus in the embryonic cell, the case constitutes something of a marvel.

JOHN FORBES, M. R. C. V. S.

ONE of the principal horse commission sales firms in New York City is reported to have said that it has sold 2,000 horses more this spring so far than ever before in the same month.

SOCIETY MEETINGS.

THE REVIEW presents its compliments to Secretaries of Veterinary Medical Associations throughout the United States and Canada, and begs to again remind them that this journal earnestly desires to publish the transactions of every meeting held within that large territory. It points with pride to this department in Volume XXVIII, which includes *most* of them; but two or three have failed to avail themselves of our oft-repeated invitation to give the profession at large the benefit of their deliberations. We want a closed volume of the REVIEW to constitute a complete record of everything of interest and value in a veterinary sense occurring in all the Americas during that period.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

PHILADELPHIA, PA., April 27, 1905.

Editors American Veterinary Review:

DEAR SIRS:—The programme for the Cleveland meeting is taking shape. The Headquarters will be at the Hollenden House. Papers have been offered by Drs. R. H. Harrison, Louis A. Klein, R. C. Moore, M. H. Reynolds, L. A. Merillat, and a joint paper by Drs. R. P. Lyman and C. E. Colton. Through the solicitation of President Knowles a paper upon "Meat and Milk Inspection" will be offered by Prof. Dr. Robert Ostertag, of Berlin, Germany; also one by Professor K. Tsuno, of Tokio, Japan.

The Local Committee of Arrangements have been very active and have outlined in part the entertainment as follows:

Tuesday, August 15—Informal reception at headquarters, music, etc.

Wednesday, August 16—Park ride and visit to points of interest for the ladies during the forenoon.

Thursday, August 17—Take ride from 2 to 5 P. M. for all members, ladies and invited guests.

Banquet in the evening at the Hollenden House.

On Friday, August 18, the clinic will be held, beginning at 8 A. M. The committee will provide an excellent place for the clinic and see that proper seating facilities are arranged so that all may see the demonstrations. They will provide all subjects

needed, prepare for the operations, sterilize the instruments, and administer the anæsthetics thus, leaving the operator free for the actual work of making the demonstration and speaking about its important features. The clinic will be held within walking distance of headquárters.

Dr. S. Stewart, Chairman of the Programme Committee, and his associates are urgent in their solicitation of papers, but the Chairman informs me that the desired number has not yet been obtained. The committee suggest papers especially upon surgical procedures and surgical technique and hope that there will be offered a good quota of papers upon these subjects. Contributors, are, however, free to select any topic upon which they may care to write. Those who have something to offer will please communicate with Chairman Stewart at as early a date as possible. As the dates of the meeting are August 15-18, it will be observed that the time for preparation is growing short. The value and influence of the annual meetings have been progressing by such great strides each year as to encourage the prophecy that the Cleveland meeting will in its turn be a record-breaker, but hard work and coöperation are necessary to ensure it. Let each one lend a hand. Respectfully,

JOHN J. REPP, *Secretary.*

MAINE VETERINARY MEDICAL ASSOCIATION.

After several years of hard, conscientious work upon the part of members of the M. V. M. A., success has at last crowned our efforts, and Maine takes her place among the States having a veterinary registration law. During the early part of the fall of 1904, the Association appointed a Legislative Committee consisting of Drs. Salley, Pope, and Joly, to frame a Veterinary Registration Bill to present to the Legislature of 1904-05. The bill was drawn up and each and every member was instructed to make special efforts by personal solicitation to obtain the support of every senator and representative from his county in favor of the bill.

In the early part of the session, during the second week of January, 1905, the bill was presented before the House of Representatives by the Hon. F. G. Kinsman, of Augusta, and was finally referred to the Committee on Agriculture. Now came the real work of the campaign, and the Association, ably assisted by Hon. W. C. Philbrook, of Waterville, worked hard to gain a favorable impression for the bill. The bill came before the committee on February 8th, and was championed by Hon. W. C.

Philbrook, who carefully and clearly defined our position and made it plain to the committee that our claim for recognition was a just and righteous one and that the passage of such a bill was certain to elevate the standard of veterinary science in the State and thereby increase the value of the veterinarian's services to the stock-raiser. Hon. Frank S. Adams and Hon. John M. Deering, members of the Maine State Board of Cattle Commissioners, spoke heartily in favor of the bill and urged the Committee on Agriculture to give the bill full consideration. As a result the bill was favorably reported and went to the House and Senate and passed the several readings and was passed, to be enacted in the early part of February. On February 2d Governor W. T. Cobb signed the bill and it became a law.

Much credit is due the above-named gentlemen for their able assistance and to all the members of the Association for their untiring efforts. On the whole, we consider that we have a liberal, but nevertheless a just law, and the veterinarians of the State of Maine should feel gratified at the passage of such a law.

During the campaign the Association has been strengthened by the addition of several new members and the payment of considerable money into the treasury, and to-day the Association stands on a firmer base, has a veterinary registration law to boast of, is prosperous and flourishing and a source of pride to its members.

I enclose a copy of the Veterinary Registration Bill as passed by Maine Legislature, which is as follows :

[Approved February 22, 1905.]

CHAPTER 17.

An Act to regulate the practice of Veterinary Surgery, Medicine and Dentistry.

SECTION 1. A board is hereby established to be known as the state board of veterinary examiners ; said board shall be composed of three veterinary surgeons, residents in the state, who are graduates from some legally chartered veterinary college or university having the power to confer degrees in veterinary surgery, and who shall have been actively employed in the practice of their profession for a period of at least five years. On or before May first, nineteen hundred five, the governor shall appoint the members of said board to serve as follows : one for one year, one for two years, and one for three years, and thereafter he shall annually appoint one member of said board

for the term of three years. Any vacancy in said board shall be filled by appointment by the governor, within thirty days after such vacancy shall arise, of a person, qualified as aforesaid, to hold office during the unexpired term of the member whose place he fills. Any member of said board may be removed from office, for cause, by the governor, with the advice and consent of the council.

SECTION 2. Said board shall organize annually in the month of May by the election of one of its members as president, one as secretary, and another as treasurer, and may adopt such rules, not in conflict with the laws of the state, as they may deem proper to carry into effect the provisions of this act. They shall also adopt a seal which shall be affixed to all certificates issued by them in accordance with the provisions of this act, which certificate shall be signed by the president and secretary. No member of the board shall receive any fee, compensation, or remuneration for the performance of any duty required of him by the provisions of this act, except for actual disbursements and expenses incurred by reason of the performance of the duties herein required, which disbursements and expenses shall be paid out of fees received by the treasurer of said board under the provisions of section five of this act. The treasurer shall annually, on the first day of April, make written report to the governor and council of all receipts and expenditures of said board. If any balance should then appear in his hands in excess of one hundred dollars, after paying all disbursements and expenses then incurred by the members of the board, he shall pay such balance to the treasurer of state, who shall apply the same to the permanent school fund.

SECTION 3. On and after September first, nineteen hundred and five, it shall be unlawful for any person to practice veterinary surgery, medicine, or dentistry, or any branch thereof, within the state, without having previously obtained a certificate from the state board of veterinary examiners and being registered as herein provided.

SECTION 4. Any person who shall be engaged in the practice of veterinary surgery, medicine, or dentistry, or any branch thereof in this state, on the date of the approval of this act, may lawfully continue such practice upon condition that he shall, on or before September first, nineteen hundred and five, register his name and address with said state board of veterinary examiners, and give satisfactory proof to said board that he was so in practice on said date of approval. Any person shall

be regarded as practicing veterinary surgery, medicine, or dentistry, or any branch thereof, within the meaning of this act, who has publicly professed to be a veterinary surgeon, or has prescribed for sick or injured animals and accepted fees for such services, or who has attached to his name the title "V. S." or "Veterinary Surgeon," or any veterinary title ordinarily used. Nothing in this act shall be construed as prohibiting the performance of gratuitous services rendered by any one in case of emergency, nor prohibiting any person from practicing veterinary medicine, surgery, or dentistry, on any animal belonging to himself; nor shall this act be construed as prohibiting castration of animals by any resident of this State.

SECTION 5. All persons who shall commence the practice of veterinary surgery, medicine, or dentistry, or any branch thereof, within the state after May first, nineteen hundred five, shall be graduates of a legally chartered veterinary school, college, or university, having the power to confer degrees in veterinary surgery, and shall pass an examination to the satisfaction of said board of examiners. Applicants for examination as herein provided, shall file with the secretary of the board their written request for such examination, and pay to the treasurer of said board a fee of five dollars before being permitted to take such examination.

SECTION 6. The board of examiners shall issue certificates to all persons qualified to receive them under the provisions of section four and to all persons passing the examination required under section five, authorizing the holder to practice veterinary surgery, medicine, or dentistry, or any branch thereof, within the state. Said certificate shall be recorded in the office of the clerk of the supreme judicial court in the county wherein the holder resides at the time of passing said examination. Said clerk shall be entitled to a fee of fifty cents for making such record and in the absence of the original certificate an attested copy of such record shall be received as evidence in all courts within the state of the right of the person therein named to practice veterinary surgery, medicine, or dentistry, or any branch thereof, within the state.

SECTION 7. It shall be the duty of said board of examiners to keep a record of all practitioners who shall qualify under the provisions of this act, and to register therein the name, age, and time spent in the study and practice of veterinary surgery, medicine and dentistry, and, if a graduate, the name and location of the school or college granting his diploma. Such record shall

be open to public inspection at all times, within reasonable hours, at the office of the secretary of the board.

SECTION 8. The president of said board shall have power to administer oaths and to take testimony for the proper enforcement of this act and the rules established by said board.

SECTION 9. Any person who shall practice veterinary surgery, medicine or dentistry, or any branch thereof, in the state of Maine, after September first, nineteen hundred five, without complying with the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not exceeding one hundred dollars, or by imprisonment in the county jail for not more than thirty days.

SECTION 10. Said board shall meet as a board of examiners in the city of Augusta, on the second Monday in January and July of each and every year, when there are applicants for examination, and at such other times and places as they may find necessary for the performance of their duties.

* * *

The regular meeting of the M. V. M. A. was held in Waterville, April 5, 1905, at the Hospital of Dr. A. Joly. Meeting called to order by Dr. F. L. Russell, as President *pro tem.*, in the absence of President Pope. Drs. Salley, Russell, Joly, Darling, and Blakely answered roll-call.

Reports of previous meetings were read and approved.

Dr. R. E. Freeman, of Dexter; Dr. H. T. Potter, of Calais, Dr. Chas. H. McGillicuddy, of Bath, and Dr. H. S. Usher, of Bonny Eagle, were approved by the Executive Committee and admitted to membership. A committee consisting of Drs. Joly, Salley and Blakely was appointed to draw up a suitable "Certificate" as a sign of membership in our Association, with instruction to report at next meeting.

An interesting talk by Dr. Joly on "Milk Inspection" was given.

Voted to meet in Augusta, July 12, 1905.

Meeting adjourned at a late hour.

Papers are to be read at the next meeting by Drs. Pope, Salley and Blakely.

C. L. BLAKELY, M. D. V., *Secretary.*

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

A regular stated meeting was held at Donaldson's Hall, Broad and Filbert Sts., Philadelphia, Pa., Tuesday evening,

April 11, 1905. The meeting was convened at 8.30, Dr. James T. McAnulty in the chair. The following members were present: Drs. W. Horace Hoskins, G. R. Hartman, C. J. Marshall, Adam W. Ormeston, W. L. Rhoads, A. T. Sellers, B. M. Underhill, and Joseph W. Vansant. Among the visitors were Drs. Richard H. Wisdom and Charles Schaufler.

Minutes of the previous meeting were read and approved.

A letter was read by the Secretary from Mrs. James B. Rayner in reference to the illness of her husband. Dr. Rayner is one of the charter members of the Keystone and one of its best workers. He has been confined to his bed for about three months and is just able, at the present time, to get around his room. His trouble was caused by a stroke of paralysis.

A notice of the International Veterinary Congress, to be held in Budapest in September, was read by the Secretary.

The programme for the evening was "Recent Legislation" and "Reports of Cases" by the members.

In speaking of recent legislation, Dr. W. Horace Hoskins reviewed some of the work done by the Legislature, especially matters that were of interest to our profession. He stated that the \$100,000 asked for by the Veterinary Department of the University of Pennsylvania had passed the Senate this afternoon and is now in the hands of the Governor. The Registration Bill is in the same condition. Dr. Hoskins read a copy of the law as it is presented to the Governor.

A bill is also in the hands of the Governor making it compulsory for veterinarians to report contagious diseases of animals to the State Live Stock Sanitary Board.

Dr. Schaufler asked about the case of springhalt reported by Dr. Ridge at the last meeting. He stated that recently his own driving horse had fallen when driving and on several occasions since the fall had showed this aggravated form of springhalt. It showed only by spells. No lesions were found to account for the condition.

Drs. McAnulty and Hoskins reported that a large number of cases of mange had recently been found in one section of the city among horses. It was principally found among a cheap class of horses that are kept in unsanitary conditions. The cases had been reported to the State Live Stock Sanitary Board and at the present time were quarantined.

Dr. W. L. Rhoads reported a case of forage poisoning that had recently come under his observation.

C. J. Marshall reported a case of Hodgkin's disease in a St.

Bernard dog. This dog was about six years old and in very good condition till about three months ago. At that time a swelling was noticed on the neck and the dog did not seem as lively as common. On examining the case it was found that the swelling was hard but not painful. A priesnitz dressing was recommended. This was followed for three days, when the dog was seen again. The swelling was much larger; covered the whole left side of the face. The temperature was 106, respiration and pulse were accelerated, appetite was impaired and the animal constipated. An opening was made into the enlarged gland. A cavity was found, but no pus. A bloody serum was all that was found. The incision was packed with iodoform gauze. A calomel purge and quinine were given. The next day the swelling was considerably reduced. Temperature, pulse and respirations were nearly normal. The dog had eaten and the calomel had operated. In about a week another attack similar to the first developed. Other superficial glands were observed to be enlarged. Hodgkin's disease was diagnosed. Treatment discontinued except the X ray recommended. The dog was taken to the laboratory twice each week for treatment. He lost weight rapidly, glands became more enlarged, and the dog died. Post-mortem revealed an enlargement of internal as well as external glands. The spleen weighed two pounds and five ounces. No other organs except the glands were affected. The enlarged glands when opened were gray and a deep red, but not cheesy; a prune juice exudate when opened. No known cause was discovered. The diagnosis and post-mortem were verified by Dr. Henry W. Cattell, the pathologist.

Dr. Hoskins reported a similar case about three years since to this Association. The case described by Dr. Hoskins was in a collie.

Dr. Hoskins exhibited a valuable Jacabin pigeon that died with about four hundred other birds in a baggage car from Boston to New York City. It was supposed that these birds were killed by too much heat in the car. The birds were placed too near the steam pipes. An autopsy was made on this bird by Drs. Schaufler and Hoskins and the autopsy verified the diagnosis.

Dr. Sellers spoke of the interest that had been stimulated by the introduction of a question box in the New York City Veterinary Medical Association, as reported in a recent number of the REVIEW. He suggested that this plan be adopted in our Association. Several members spoke in favor of the plan. It

was decided that a question box would be introduced at the meeting in May.

The meeting was adjourned at eleven o'clock to meet at the same place Tuesday evening, May 9.

C. J. MARSHALL, *Secretary.*

ESSEX COUNTY (N. J.) VETERINARY MEDICAL ASSOCIATION.

I take pleasure in announcing that the Essex County Veterinary Medical Association of New Jersey came into existence through the invitation of Dr. T. E. Budd, of Orange, N. J., President of the Veterinary Medical Association of the State of New Jersey, on Monday evening, April 17, at 8 P. M., at Achtel Stetter's Hotel, Broad Street, Newark. In response to Dr. Budd's invitation a goodly number of the representative veterinarians of the county were present, they being Drs. T. Earle Budd, Orange; J. T. Glennon, H. Vanderoest, W. Runge, P. J. McGuinnis, W. H. Bellman, B. K. Baldwin, and E. D. Bachman, Newark; F. C. A. Artopeous, Brookdale; Wm. Herbert Lowe, Paterson, guest.

Dr. T. E. Budd, acting as Chairman, called the meeting to order at 8.15 P. M., with a few well-chosen remarks as to the objects and benefits generally which he thought would result from the formation of a county veterinary medical association socially, insomuch as it would tend to bring local veterinarians into closer touch with each other, thus engendering a better feeling; the reading and discussion of cases and reports on the employment of new drugs and combinations of drugs and results obtained; also the advisability of raising the charges for veterinarians' services rendered at this time. Dr. Budd very significantly remarked apropos of establishing a uniform fee that all professions and trades had advanced and remuneration along all lines of skilled work had increased; therefore why should not the veterinarian, who has to undertake a much more extended and scientific course than his predecessors? This, with a few general remarks, closed Dr. Budd's opening address.

The Chairman then called upon Dr. Wm. Herbert Lowe, President of the Passaic County Veterinary Medical Association, an invited guest, for a partial history and results obtained by organization in his county. In response Dr. Lowe said that by the formation of an association in Passaic County good results had followed; that primarily there was a better feeling among the men of the profession and that they all as an organi-

zation felt stronger to act upon such measures as should come up that might need legislation or otherwise, in unison rather than as individuals. That they had agreed upon a schedule of prices instead of a fixed fee, etc. Dr. Lowe's remarks generally were most interesting and gave those present a good working outline as to the methods that should be pursued to make the prospective association a success.

After some discussion as to the eligibility of certain local practitioners to join owing to their unscientific methods and particularly as to their unprofessional tactics, it was decided that admission to membership was to be controlled by ballot, and that unless great objection was raised against any one in particular that any practitioner, be he an existing practitioner (having come in before the establishment of the State law), or those who are graduates of a standard institution and regularly registered, having passed the State Board of Veterinary Medical Examiners of the State of New Jersey, were eligible if they were already members of the State Association.

It was then decided to organize to this end.

Dr. T. C. A. Artopeous made a motion that the new association be organized, and be known as the Veterinary Medical Association of Essex County, New Jersey. Promptly seconded by Dr. J. T. Glennon. Motion was put by Chairman, and was carried.

The election of officers then followed, resulting as follows:

President—Dr. T. Earle Budd.

Vice-President—Dr. J. T. Glennon.

Treasurer—Dr. H. Vanderoest.

Secretary—Dr. B. K. Baldwin.

Dr. Vanderoest moved that a committee be appointed to draft resolutions and by-laws, the same being seconded and carried. The President appointed Dr. P. J. McGuinnis, Chairman, assisted by Drs. Runge and Artopeous.

A committee was also appointed by the Chair to advise the Veterinary Medical Association of the State of New Jersey of the organization of the Essex County Veterinary Medical Association, and asking for recognition.

Dr. Budd called another meeting of the new association to take place in Newark, two weeks from to-night, and owing to the absence of so many veterinarians of the county who had been invited, all present were asked to act as a committee to interview the absentees and bring them in at the next meeting.

Before closing, Dr. Wm. Herbert Lowe, of Paterson, Presi-

dent of the Passaic County Veterinary Medical Association, was unanimously elected to honorary membership.

B. K. BALDWIN, D. V. S., *Secretary.*

KENTUCKY VETERINARY MEDICAL ASSOCIATION.

The next meeting of this Association will be held in Louisville, May 30, when the following papers will be presented:

"Tetanus," Dr. R. M. Bryan, Lexington.

"Anthrax, Black-leg, and Texas Fever," Dr. F. T. Eisenman, Louisville.

"Tuberculosis," Dr. L. M. Land, Lexington.

"Parturient Paresis," Dr. R. W. Deets, Bardstown.

"Shoeing," Dr. M. M. Leach, Lexington.

"Effects of High Altitude on Diseases of Respiration," Dr. E. W. Hagyard, Lexington.

(Subject to be announced), Dr. M. A. Purdy, Shelbyville.

"Ergot in Pneumonia," Dr. D. A. Piatt, Lexington.

We expect a large attendance of both active and honorary members. The programme will insure good instructive papers, and I am confident no one will regret going to the second meeting of the K. V. M. A. D. A. PIATT, *Secretary.*

THE TWIN CITY VETERINARY MEDICAL ASSOCIATION was organized at Minneapolis, Minn., April 11, with a large number of the local practitioners in attendance. It will hold monthly meetings alternately at Minneapolis and St. Paul. We suggest the "Question Box" (explained in the March REVIEW) to our Minnesota friends as contributing much to the interest and value of its monthly gatherings, as it is extremely difficult to have sufficient essays and case reports for meetings held so frequently. We would also suggest the regular transmission of a report of each meeting to the REVIEW for publication, so that the profession at large may profit by its deliberations.

THE NEW ENGLAND ALUMNI ASSOCIATION OF THE AMERICAN VETERINARY COLLEGE held its annual reunion and banquet at the Copley Square Hotel, Boston, Wednesday evening, April 19, and a goodly number of the loyal sons of the "old school" gathered around the board to enjoy a fine repast and to indulge in loving reminiscences of their alma mater. Dr. James L. Robertson, of New York, represented the faculty, and, judging by the enthusiastic terms in which he described his trip to the Hub, the "boys" were glad to see him.

NEWS AND ITEMS.

A. D. GALBRAITH, D. V. S., has located at Asheville, N. C., to which place he was drawn in search of health.

ELISHU HANSHEW, D. V. S., Brooklyn, N. Y., has installed a McGee operating table in his hospital at 125 Carlton Avenue.

"I AM only sorry the REVIEW does not come oftener. It is just like getting a letter from home."—(*A. O. Kennedy, Columbia, Tenn.*)

IN the thirty-nine years the Ontario Veterinary College has been established it has issued 2858 diplomas, an average of almost 75 a year.

"I MUST agree that the REVIEW is constantly improving, and the best friend of the busy practitioner."—(*A. Jasme, Savannah, Ga.*)

DR. G. ED. LEECH, of Winona, Minn., had the misfortune to lose by fire his library, diploma and all his belongings on the night of April 12.

DR. W. N. ARMSTRONG, of Concord, Mich., was reelected alderman for two years in his city this spring, without opposition. This is the doctor's sixth year as an alderman.

DR. S. STEWART, of Kansas City, writes: "Veterinarians of the West are all very busy, there being demand for the services of every one who is capable of rendering service of any value."

DR. W. F. HEYDE, of St. Louis, Mo., sustained the sad bereavement of the loss of his estimable wife (nee Cora C. Daues) on March 20. She was 26 years old, and left two small children, Mira and Florence May.

"I TAKE PLEASURE in sending you check for subscription to Vol. XXIX of the REVIEW, and congratulate you upon your unbounded success, the natural result of healthy development."—(*Peter F. Bahnsen, V. S., Americus, Ga.*)

J. B. CAUGHEY, D. V. S., Columbiana, Ohio, sustained a fracture of the tuberosity of the tibia of the "off" leg on Dec. 24, in a runaway. Having a weak ankle on the opposite leg, he is still forced to use crutches while attending to his practice.

DR. AND MRS. ERNEST I. SMITH, of Cherry Creek, N. Y., were blessed with a little daughter on April 4, weighing eight pounds, which they have named Virginia Irene. Dr. Smith graduated from the New York State Veterinary College, class of 1903.

C. D. MCGILVRAY, V. S., M. D. V., Binscarth, Manitoba, has been appointed by the Canadian Minister of Agriculture,

chief veterinary inspector for Manitoba, at a salary of \$1500 per annum. He is a native Scotchman, a graduate of Ontario and McKillip.

THOMAS ROBERTSON, M. R. C. V. S., of Brooklyn, N. Y., died the early part of April in the county jail, where he was temporarily confined for reformatory purposes. Some years ago he was a prosperous practitioner, but through family difficulties had become discouraged and resorted to drink, which reduced him to the condition of a pauper.

"THE ETIOLOGY OF HOG CHOLERA" is the title of Bulletin No. 74, of the Bureau of Animal Industry, and is by Drs. Dorset, Bolton and McBryde, of the Biochemic Division. The autopsies were performed under the supervision of Dr. E. C. Schroeder, Superintendent of the Bureau Experiment Station, while the inspections in Iowa were made by Inspector W. B. Niles.

AN action was once brought before Judge Morris against a veterinary surgeon for killing a man's horse. Lord Morris knew something of medicine, as he did of most things, and asked whether the dose given would not have killed the devil himself. The veterinary drew himself up, pompously, and said: "I never had the honor of attending that gentleman." "That's a pity, doctor," replied Morris, "for he's alive still."—(*Farmers' Advocate*.)

WE acknowledge receipt of the annual report for 1904 of the "Health of Animals" of the Canadian Department of Agriculture. It consists of a full *résumé* of the subject by Veterinary Director General Rutherford, the report of Pathologist Dr. Chas. H. Higgins, those of the various inspectors throughout the Dominion, while special reports on "Actinobacillosis," "Mange," "Dipping Plants," "Quarantine Regulations," and the "Breeding of Remounts" follow.

A PRESS DISPATCH states that an epidemic of mange is raging among the horses in Cincinnati. The malady is represented as being of such a virulent type that several horses have already died from it and others are not likely to recover. It is alleged that the disease first broke out at a fashionable winter boarding farm to which a horse was led in the first of December heavily blanketed. The man in charge told the owner of the farm that the blankets should not be removed as the horse was threatened with pneumonia. After some hours the horse becoming very uneasy, the blankets were removed and the mange discovered. Since then every horse on the farm has been attacked and many law-suits are threatened.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table will be found the dates, places of meeting, and Secretaries' names and addresses of all the Veterinary Medical Associations of the United States and Canada. Secretaries are requested to see that their organizations are properly included in the list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	August 15-18.	Cleveland, O.	J. J. Repp, Phila., Pa.
Vet. Med. Ass'n of N. J.	July 13-14, 1905	Wash'gton Pk	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	1st Tues. Aug.	Bridgeport.	B. K. Dow, Willimantic.
New York S. V. M. Soc'y....	September, 1905	Ithaca.	W. H. Kelly, Albany, N.Y.
Schuylkill Valley V. M. A....	June 21, 1905.	Reading, Pa.	W. G. Huyett, Wernersville.
Passaic Co V. M. Ass'n.....	May 1, 1905.	Paterson, N.J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	.....	.....	A. E. Flowers, Dallas.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet. Med. Ass'n.....	July 12, 1905.	Augusta.	C. L. Blakely, Augusta.
Central Canada V. Ass'n.....	.....	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	.....	141 W. 54th St	Judson Black, Richmond.
Alumni Ass'n N. Y.—A. V. C.	April, 1906.	Decatur.	W. C. Miller, N. Y. City.
Illinois State V. M. Ass'n.....	Feb. 15, 1905.	Racine.	W. H. Welch, Lexington, Ill.
Wisconsin Soc. Vet. Grad....	Call of Pres't.	Champaign.	S. Beattie, Madison.
Illinois V. M. and Surg. A....	Call of Com.	Not determ'd	J. M. Reed, Mattoon.
Vet. Ass'n of Manitoba.....	July, 1905.	.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	.....	.....	T. B. Carroll, Wilmington.
Ontario Vet. Ass'n.....	July, 1905.	London, Ont.	C. H. Sweetapple, Toronto.
V. M. Ass'n New York Co....	1st Wed. ea. mo.	141 W. 54th St	D. J. Mangan, N. Y. City.
Ohio State V. M. Ass'n.....	.....	Columbus.	W. H. Gribble, Wash'n C.H.
Western Penn. V. M. Ass'n....	1st Wed. ea. mo.	Pittsburgh.	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	August, 1905	Kansas City.	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n....	July, 1905.	Roch'ter, N.Y.	J. H. Taylor, Henrietta, N.Y.
Iowa State V. M. Ass'n.....	January, 1906.	Ames.	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n....	July, 1905.	Minneapolis	J. G. Annand, Minneapolis.
Pennsylvania State V. M. A....	.....	.....	C. J. Marshall, Phila.
Keystone V. M. Ass'n.....	2d Tuesday of each month.	Philadelphia.	C. J. Marshall, 2004 Pine St., Phila
Colorado State V. M. Ass'n.....	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n	June 26-27	Omaha, Neb.	B. F. Kaupp, Kansas City
Rhode Island V. M. Ass'n.....	.....	.....	T. E. Robinson, Westerly, R. I.
North Dakota V. M. Ass'n....	January, 1906.	Fargo.	E. J. Davidson, Grand Forks
California State V. M. Ass'n....	Mch. Je. Sep, Dc	San Francisco	P. H. Browning, San Jose.
Southern Auxiliary of Califor-	.....	.....	.....
nia State V. M. Ass'n.....	Jan. Apl. Jy. Oct.	Los Angeles.	H. D. Fenimore, Los Angeles
South Dakota V. M. A.....	.....	.....	E. L. Moore, Brookings.
Nebraska V. M. Ass'n.....	.....	.....	A. T. Peters, Lincoln.
Kansas State V. M. Ass'n.....	.....	Topeka.	Hugh S. Maxwell, Salina.
Ass'n Médécale Veterinaire	.....	.....	J. P. A. Houde, Montreal.
Francaise "Laval".....	1st & 3d Thur. of each month.	Lect. R'man'val Un'y Mon.	.....
Alumni Association A. V. Col.	April each yr.	New York.	F. R. Hanson, N. Y. City.
Province of Quebec V. M. A.	.....	Mon. & Que.	Gustave Boyer, Rigaud, P.Q.
Kentucky V. M. Ass'n.....	May 30, 1905.	Louisville.	D. A. Piatt, Lexington.
Wolverine State V. M. Ass'n.....	.....	.....	W. W. Thorburn.
Washington State Col. V. M. A.	1st & 2d Friday	Pullman, Wa.	Wm. D. Mason, Pullman.
Ohio Valley V. M. Ass'n.....	.....	Evansville, I'd	J. W. Moses, Mt. Vernon, Ind.
Iowa Nebraska V. M. Ass'n....	.....	.....	A. T. Peters, Lincoln, Neb.
Louisiana State V. M. Ass'n....	.....	.....	E. P. Flower, Baton Rouge.
Essex Co. (N. J.) V. M. Ass'n	May 1, 1905.	Newark.	B. K. Baldwin, Newark.

PUBLISHERS' DEPARTMENT.

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Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address. Make all checks or P. O. orders payable to American Veterinary Review.

JAMES F. McCUNE, the well-known manufacturer of tooth rasps and other veterinary instruments of Brooklyn, N. Y., has removed his factory and office from 1651 Fulton Street, to the more commodious building at 855 DeKalb Ave. His increased facilities will enable him to more promptly serve his patrons. His telephone is 86 W. Bedford.

MERCK'S 1905 MANUAL OF THE MATERIA MEDICA. A Ready-Reference Pocket Book for the Physician and Surgeon. (Published by Merck & Co., University Place, New York.)

The third, or 1905, edition of MERCK'S MANUAL is a compact little volume, stored with such information—revised to date—as gained for its predecessors the title "a valuable pocket reference-book for the active practitioner." The publishers sought the aid and suggestion of many physicians in compiling the MANUAL, which contains some notable departures from and additions to the previous issue. The section devoted to Prescription Formulae, for instance, has been replaced by a list of Therapeutic Indications for the use of the *materia medica*. A table giving the dosage of frequently used drugs, chemicals and galenical preparations has been added, and also a comprehensive chapter on urinalysis, dealing with the examination of pathological urine and urinary deposits. Throughout the work the Apothecaries' system is supplemented by metric equivalents. Other features are: Names of the chemicals and drugs usual in modern medical practice, with their chief synonyms, physical form and appearance, solubilities, percentage strengths and physiological effects, therapeutic uses, modes of administration and application, regular and maximum dosage, incompatibles, antidotes, precautionary requirements: poisoning and its treatment, etc.

WE would call our readers' attention to page 13 (adv. dept.) where, under the heading "VASOGEN," they will find something of interest: and their interest will increase, after a suitable application of some of the preparations there designated.

ASSISTANT WANTED.

WANTED.—Veterinary surgeon as assistant. DR. J. J. HAYES, 416 East 14th St., N. Y. City.

EXPERIENCED ANATOMIST WANTED.

WANTED.—By the McKillip Veterinary College, an experienced instructor in Anatomy. Address the Secretary. DR. GEO. A. SCOTT, 1639 Wabash Ave., Chicago, Ill.

ASSISTANTSHIP WANTED.

WANTED.—By a Cornell graduate with N. Y. State Veterinary License and one year graduate work, a position in an extensive practice, chiefly for improvement. Address W. L. WILLIAMS, Cornell University, Ithaca, N. Y.

VETERINARIAN WANTED.

VETERINARIAN of high education to do detail work among cattle and dairymen. Must be fluent and convincing talker, and be able to produce first class references. State age, education and salary expected. N. M., Box 1816, New York City.

AMERICAN VETERINARY REVIEW.

JUNE, 1905.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, April 20, 1905.

THE TICK THEORY HANDLED BY AN ACARIOLOGIST.—My knowledge of the great science of biology is limited, and, in fact, it is not in my competency to judge of any question where biological conditions are called upon to decide important problems. On account of my deficiency I have been willing to accept theories which after all might find afterwards their adversaries, and then I was obliged to change my opinion also. I suppose I am not the only one who in that position has been obliged to modify his ideas. I have just fallen again into one of those peculiar situations, but this time I will not come to any decision until I get more light on the subject.

We all know in America the amount of work that Texas fever has given rise to, and all of us, even if not specialists, have followed the many controversies which have taken place and the various opinions which were advanced. Among all the different expressions of opinion as to the principal means of contagion, there is one which has prevailed ever since the first appearance of the disease—that was the tick theory. It held fast, ridiculed by many, or again half and half fairly admitted by others; at last Dr. Curtice, of the Bureau of Animal Industry, gave the last blow to all the varieties of pro and con, and by his

observations and his researches, by his biological studies and his experiments, proved that the tick theory was the correct one ; that it was by the ticks that the disease was transmitted ; that where there was no tick there was no disease, etc., etc.

Of course, it was great sensational news ; Curtice's work was taken hold of by others, and such authorities as Theobald Smith, F. L. Kilborne, and E. C. Schroeder, of the Bureau of Animal Industry, made known their conclusions in a report of 1893, viz. : "(5) Texas fever in nature is transmitted from cattle which come from the permanently infected territory to cattle outside of this territory by the cattle tick (*Ixodes bovis*). (6) The infection is carried by the progeny of the ticks which matured on infected cattle, and is inoculated by them directly into the blood of susceptible cattle. . . . "

In transmitting his report to the Secretary of Agriculture, Dr. Salmon said : "Another significant discovery, not less marvellous, is that the microorganism which constitutes the contagion of the disease is transmitted through the egg to the young tick, and it is this, and not the adult tick carried by the Southern cattle, which finds its way upon susceptible animals and causes the disease. . . . "

* * *

Advanced and supported by such authorities as those from the scientific staff of the Bureau of Animal Industry, the tick theory was soon endorsed by European investigators and other diseases were soon found and classified with Texas fever, as far as the original means of transmission—the ticks and their varieties. Nocard was perhaps among some of the first to proclaim and to endorse the discovery of the American scientists.

One man, however, was rebellious to the idea. Thorough biologist, close observer, and well acquainted with ticks and their mischiefs, Pierre Megnin, retired army veterinarian and member of the Academy of Medicine, will not admit the tick theory, and in Number 6 of the *Journal de l'Anatomie et de la Physiologie* has presented his arguments against it :

"It has not been sufficient," he says, "to incriminate the

flies which can prick and are blood-suckers, but other wingless insects have been accused of acting the same part of transmitting diseases from one animal to another." "These insects (the ticks) are great blood-suckers, it is true, but having no wings and being entirely unable to move from one animal to another, as flies or even some fleas do, how can they transmit a disease, although their belly is full of its germs, when they cannot pass from one to another animal?"

For Megnin the theory presented is all fancy and he rather severely says could be admitted by learned people, even accomplished bacteriologists, but not at all by acarologists.

In this article Mr. P. M. enters into a long and very scientific biological history of all ticks, in which I do not wish to follow him. I read these parts that, however, are interesting to the question: "To resume, fecundated females only attach themselves on animals to make a large provision of blood necessary for their very large progeny. It is impossible for them to pass upon two animals in succession. Males are perfectly harmless. Nymphæ are sometimes found on dogs, but in a stage of freedom which excludes all relation with the females. Larvæ are never seen on dogs or other large animals whose skin their weak buccal weapon could not pierce. . . . If it has been supposed that there were, it is because they were mistaken for young females unfed, which are 60 times smaller in size than females gorged with blood."

The conclusions of the author are: "At any rate it is forbidden to the tick to pass from one animal to another. When it is fixed on an animal it is for a given number of days (15), and when it drops it is to lay its thousands of eggs and die. The larvæ which come out of the eggs require months to complete their organization and when they become hungry they go on small mammalia with thin skins that they can pierce, and never on large animals as their mothers do. If larvæ have been placed on the skin of healthy animals, they have not transmitted the disease themselves as they could not pierce the skin, but it is probable that in the glass tube where they were born, there

remained still the cadaver of their mother, which contained spores of pyrosomes or piroplasmoses."

I wonder how a profane not posted on biology can answer Mr. P. Megnin. I leave my friends of the Bureau to do it.

* * *

THE EFFECT OF PILOCARPINE IN RABIES.—As long as I am on the subject of that interesting branch of science, biology, I may be allowed to record a little of what I have gathered at some of the meetings of the Society of Biology here, which may interest some of our readers, and in fact all veterinarians, as the subject is rabies. The remarks came from Prof. Remlinger.

The first communication was on the use of pilocarpine in the treatment of rabies and of other infectious diseases. The experiments which were related had for object to find out if excessive sudation and supersecretion of saliva, due to the administration of pilocarpine, would have some effect on the course of infectious diseases, and especially in rabies, whose virus is thrown off by the saliva. Experiments were made on rabbits and guinea-pigs inoculated with fixed virus, and upon two children suffering with rabies while submitted to the antirabic treatment. The result was entirely negative. The absolute inefficacy of the drug was proved. It also failed in reducing the infection of chicken cholera.

There was, however, some results obtained by these experiments, viz., it was found that the saliva obtained from rabid animals, after they had received an injection of pilocarpine, was not virulent. Other experiments were made on rabbits, dogs, and sheep which had been infected with fixed virus. An abundant salivation was promoted by a subcutaneous injection of pilocarpine, and the saliva, gathered as aseptically as possible, was inoculated in the muscles of 26 guinea-pigs and 37 rabbits. Some of these, 10 of each class, died from premature death two or three days after the inoculation, but 43 animals survived and were kept under observation for three and four months. None became rabid. The absence of virulence in the saliva existed whether the salivation had been produced at the beginning or

at the end of the disease. It was also present no matter what the dose of pilocarpine injected and the time the saliva was gathered—beginning, middle, or end of the salivation.

* * *

TRAVELLING VETERINARY SCHOLARSHIPS.—In my chronicle of July, 1903, I made allusion to a new departure originated in England by the Royal College of Veterinary Surgeons creating travelling studentships, offered to recent graduates desirous of attending one continental school, Alfort or Berlin, so as to take a post-graduate course. At that time I said, repeating Prof. Crookshank's words : "Travelling scholarships would be of quite as much advantage to veterinary as to medical students," and I concluded : "Why could not such prize be offered by our colleges instead of the free scholarship at home?" and again : "Why could not some generous benefactor be found to defray at least part of the expense?"

To-day I learn that not only England has followed Prof. Crookshank's suggestion and sent a student to Alfort, but that the Italian Veterinary Association offers for competition between the graduates of 1903 and 1904 the sum of one thousand francs to be given for the successful competitor under the condition that he will stay five months at either the veterinary school of Alfort or of Berlin, and attend the lectures on bovine pathology, contagious diseases and laboratory work attached to it, zoötechny, bacteriology and clinics.

I wonder if the A. V. M. Association could be induced to follow the step inaugurated by England and Italy.

* * *

ABLATION OF THE FETLOCK HYGROMA.—In most of the works on operative surgery, the tendinous windgall of the anterior face of the fetlock, also known as hygroma of that region, occupies but little space and the treatment which is recommended against it seems to be confined to comparatively simple methods. Cold applications and compresses for the recent and small tumors, or for more serious cases actual cauterization, puncture with trocar, seton, free incision, and finally the more successful and also

more severe resource of the injection of iodine. And yet with that arsenal there are cases where the prospect of success is very doubtful. It is evident that with the advantages that are offered by antisepsy, more radical means might be resorted to and more satisfactory results obtained. Such, indeed, were the facts in the records of two cases which I have found in the *Revue Générale*.

The first relates to an animal that had on the fetlock of one hind-leg, a soft fluctuating tumor, divided by the tendon of the anterior extensor of the phalanges in two unequal lobes, the external being as big as a hen's egg and the internal as a large pear. Operating as aseptically as possible, a flap of skin was removed, the synovial sac was freely opened and emptied of its contents. The borders of the incision were excised, about one centimetre on each side, and the wound closed by sutures and protected by an iodoformed collodion and wadding dressing. No suppuration occurred, cicatrization was perfect in a few days and the size of the fetlock reduced to four centimetres in diameter. It was a successful case of resection.

The second case, however, is yet more interesting. It is one of complete ablation of a large dropsical synovial sac of the fetlock of the left hind-leg, which formed a tumor measuring 17 centimetres in length and 8 in width. The operation was performed with all antiseptic measures. Incision of the skin, opening of the synovial sac with a long incision, escape of a reddish thick synovia, disinfection of the sac, excision of the side pieces of the membrane on each border, sutures of the serous coat and then that of the skin. The operation was performed under a fine stream of tepid solution. Semi-plastic dressing covered the whole region. Two months later the animal returned to work with the hygroma entirely removed.

While this affection seldom unfits a horse for work, there are many cases where such treatment as resection or even ablation of the sac is perfectly justified—even with the danger that may present the close connection with the articular synovial membrane of the fetlock joint.

ADRENALINE.—Our friends know well all that has been written about adrenaline, therefore it is not necessary to say more about it, and yet in the *Berliner Thierärztliche Wochenschrift* I find such a concise résumé, not only of all the properties of adrenaline, but also of the conclusions derived from experiments by Dr. Zehl, who tested them in haemoglobinuria, in paraplegia, in diseases of the eye, in the diagnosis of lameness, in laminitis, etc., that I must present them here.

The conclusions of Dr. Zehl are as follows:

"Adrenaline is a powerful anaesthetic and a strong haemostatic.

"The anaesthetic properties are manifested rapidly and last from 4 to 6 hours without toxic effects.

"The best way to administer it, in our domestic animals, is by hypodermic injections. The dose is 20 to 30 c.c. of a solution at 1-100° for cattle and 15 to 30 c.c. for horses. This dose can be repeated during the day.

"For diagnosis, it can be used at the dose of 5 to 7 c.c.—5 on each side of the lame leg.

"Adrenaline is a specific against haemoglobinuria of bovines.

"It gives good effects in paraplegia of horses. It is efficacious in the treatment of external and internal inflammations of the eye.

"It is to be preferred to cocaine in the diagnosis of lameness.

"It may be useful in the treatment of laminitis.

"On account of its anaesthetic and haemostatic properties, its use is imposed in all operations of minor surgery."

* * *

EIGHTH INTERNATIONAL VETERINARY CONGRESS.—The Executive Committee of the Congress, which will take place at Budapest next September, has recently held a meeting under the presidency of Dr. F. Hutyra, rector of the Superior School of Veterinary Medicine, in which important resolutions were taken.

After the report of Prof. Dr. Stefan de Ratz, the General Secretary, it was decided that the opening session would take place on Sunday, September 3. The sessions of sanitary police will take place the 4th, 6th and 8th. The other meetings of biology, pathology and the special section of tropical diseases shall be held on the 5th and 7th. The last session shall be held on September 9th.

Everything relating to the arrangements and distractions for the members have been prepared by a special committee, and nothing will be spared to add to the comforts of those who will be present. A special committee has been appointed to make preparations for the comfort and pleasure of the ladies who will accompany the members. A large attendance is expected, as the reports of the various foreign committees announce it. The conference which is to be held on tropical diseases is bound to be a great success. It will call special representatives from England and from the English colonies.

On the petition of the Committee of Management, His Royal and Imperial Highness the Archduke Joseph Augustus has graciously accepted the Patronage of the VIII International Congress of Veterinary Medicine. His Highness has also announced that he will assist willingly at the opening ceremonial, and that he will open in person the work of the Congress. On the evening of the first day the Archduke will hold a reception at the Royal Palace for the representatives of Foreign Governments and the Bureau of the Congress.

* * *

GOTTHEIL'S HISTOLOGY.—My bibliographical notice this month must be very short. I do not know if new books are not published or if they do not reach my office, but of late I have on my desk only one. I am afraid it is one of the kind that my friend Prof. Williams calls a reprint, and yet, no ; it is not a reprint, as there is an addition to the text of the first edition, which, short as it is, may be sufficient to justify the "second edition, revised" of the title page.

The book is the "Manual of General Histology" that Prof.

W. S. Gottheil, M. D., wrote when he was teaching at the American Veterinary College. There is little to add to what was said of it when the work was published. It is a concise treatise, well fitted for the students.

In this second edition a few lines tell us in the preface of the addition of the few pages which are found at the end of the book and which tell the student of the readiest methods of examining tissues under the microscope. The book is sold by the same old house of Jenkins, of New York.

A. L.

THE VETERINARIAN, STOCKMAN AND PHYSICIAN.

In recent numbers of the REVIEW have appeared several editorials urging veterinarians to identify themselves more actively with agricultural organizations. There is a growing tendency in this direction and it should be encouraged. Those editorials deserve to be reread and thought over, as the realization of their object (closer relations with agricultural organizations) will further our mutual interests and give us increased legislative power. It has been a rather general experience that where veterinarians, unaided, have attempted to secure important legislation that was opposed, or have attempted to prevent vicious legislation that was supported; the struggle has very often been disappointing in results. It has also held true that in States where veterinarians could secure the support of stock-breeders and general agricultural interests, legislative work has been more effective. It may be set down as an unpleasant, but nevertheless bit of demonstrated truth, that medical men, either physicians or veterinarians, and particularly the latter, have relatively but little political power unless they can secure the backing of powerful financial or agricultural interests.

Such coöperative work as the REVIEW articles have noted and approved not only tend toward added political influence, but are distinctly educational for both the veterinarian and stockman. Not only should the veterinarian work in and with the stock-breeders' associations for the reasons already given, but for the more selfish and smaller reason of financial gain.

In the case of agricultural society work of any kind, the veterinarian's paper must be first of all practical, and have an immediate bearing on practical things. It may easily be made so interesting and helpful, that other papers will be wanted at the next and subsequent meetings.

For years the writer has been anxious to see veterinarians take a more prominent part in local and State and even national medical association work, and thus more rapidly gain the full respect and rank which is clearly a just due. The modern veterinarian has received good medical training and should deserve recognition as a medical gentleman, and be welcomed on any medical programme. I know of no way of gaining these important ends so easily and rapidly as by getting acquainted with neighboring physicians and by taking an active part in their various lines of association work.

Veterinarians should join medical societies wherever they are eligible, and they should not only join but take an active part in the work, present papers and take part in discussions. And by all means, when attending such conventions, veterinarians should be as well and neatly dressed as any man in the room. There is no question but that physicians are always ready to respect the intelligent and well-informed veterinarian, and take an active interest in his lines of work, whether they bear directly upon human practice or not. The ideas of the average physician concerning hog cholera, actinomycosis, glanders and bovine tuberculosis are crude and indistinct, to put it mildly. They need us on their programmes, and, by the way, we need them. There is no reason why there should not be a veterinary paper on the programme of every State medical society meeting, and upon a great many county and other local medical association programmes, and conversely medical papers on veterinary programmes.

When veterinarians are approached in private conversation with this argument, they are very apt to say, Yes, these things are all right, but how can we do them? Why, simply get acquainted with the secretaries of the agricultural and medical

societies ; learn something about good stock, take an interest in agricultural matters, be ready to discuss subjects of immediate practical importance that will appeal to the practical stockman. Take a good medical journal, read it ; be ready to discuss creditably questions of comparative medicine that often arise in medical society meetings, and furnish papers for their programmes. Veterinarians in public positions, either State or Federal, have abundant opportunities to become acquainted with secretaries of these associations, and while they may not care to take active steps to secure places on programmes for themselves, they may usually work in some capable friend who can present a valuable paper or discussion, and so do credit to the profession.

Unquestionably great good may be obtained by the individual veterinarian and great good be done the profession if more of us will take an active interest and a more active part in these allied association lines of work.

(M. H. R.)

A PRINCELY ENDOWMENT TO VETERINARY EDUCATION.

We publish elsewhere a letter from Dean Leonard Pearson, of the Veterinary Department of the University of Pennsylvania, in which he announces some important results of recent legislation in the Keystone State. The most important item, possibly, is the signing by the Governor of the bill appropriating \$100,000 to the Veterinary Department of the State University, and which, with a similar sum recently donated by an unnamed philanthropist, places the honored school in the very front rank of veterinary educational institutions of the country. The Dean intimates in his letter that further windfalls are in sight, and thus the possibilities multiply, for it is not nearly so difficult to obtain additional contributions as it is to secure the first recognition. We trust that the Keystone philanthropists and legislative solons may get the habit of bestowing endowments and appropriations upon that long-waiting and worthy department.

Aside from the munificence above referred to, the State of

Pennsylvania has taken the initiative in the establishment of an experiment farm for the investigation of infectious animal diseases, by appropriating sufficient funds to purchase and equip it, thus placing before the eyes of its sister States an example of progressive economy which may prove but the pioneer of such helpful adjuncts to preventive medicine.

These splendid results of the efforts of our *confrères* in Pennsylvania are not only gratifying in the extreme, but they point an important moral: which is that in unity there is strength; and in the case of the veterinarian, it could be stated more strongly: without unity, there is no strength. In the present instance, the members of the profession in Pennsylvania worked in perfect harmony, with a singleness of purpose which brought every influence into line for the one object; and their insistence was convincing because they were sincere believers in the righteousness of their cause. This method of operation has recently been successful in a number of States, and the opposite condition has as uniformly been unsuccessful.

The REVIEW, in its own behalf, and voicing the sentiment of the profession of the entire country, tenders its sincere congratulations to the veterinarians of the Keystone State, and hopes that their dearest anticipations may be realized in the benefits which will flow from their exceptional opportunities.

Next!

ARE YOU READY FOR CLEVELAND?

The time elapsing before the 1905 meeting of the American Veterinary Medical Association, which takes place in Cleveland, Ohio, August 18, 19, 20, 21, is growing very short, and there will be only two more numbers of this magazine in which to urge its readers (whether members of the Association or not) to arrange their affairs so that they may reap the great advantages to be derived from attendance upon its sessions.

For the past decade these gatherings have been growing in interest and importance, each year's transactions marking a distinct advance over its predecessor, and Secretary Repp assures

us that this habit is not to be deviated from on this occasion. Questions having the greatest influence upon the welfare of the profession, particularly in its relation to its educational institutions, will press for elucidation at this meeting, and it is the duty of every earnest veterinarian to contribute to the discussion the results of his thoughts upon this great problem. Papers will be presented for consideration by some of the leading scientific veterinarians of this and several foreign countries (including Germany, France, Japan, Australia and the Far Eastern dependencies of this country), upon all phases of veterinary medicine, while practical subjects will receive not only the benefits of discussion, but many will be illustrated in the clinical demonstrations.

There is no substitute for attendance: a *verbatim* reproduction of what occurs by means of descriptive writing and the use of the kodak does not compensate for all that is lost. Those who have indulged in these delightful yearly pilgrimages know how and why this is so. To all others, the REVIEW strongly advises that they make 1905 their initiative convention, and, unless they be professional adamants, they too will understand the reasons why attendance cannot be substituted.

Get ready for Cleveland!

THE original illustrated article by Dr. W. L. Williams, entitled "Rupture of the Pre-Pubian Tendon in the Pregnant Mare," announced to appear in this number of the REVIEW, has been delayed through failure of the artist to complete the drawings. The author assures us that it will certainly be ready for the July issue.

THE PENNSYLVANIA STATE BOARD OF VETERINARY MEDICAL EXAMINERS have succeeded in securing a law requiring all veterinary practitioners in that State to register annually in a registration book kept by the Board. To isolate and control illegal practitioners this act simplifies and minimizes the difficulties which beset the profession in States having practice acts.

ORIGINAL ARTICLES.

WHAT INVESTIGATION IS.

AN INQUIRY INTO THE MEANING OF SCIENTIFIC INVESTIGATION IN THE VETERINARY SCIENCES.

BY D. ARTHUR HUGHES, PH. D., D. V. M., CORNELL UNIVERSITY,
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"Good gentlemen, give him a further edge,
And drive his purpose on to these delights."

Hamlet, Act III.

"The other day an emphatic friend of mine committed himself to the opinion that, in England, it is better for a man's worldly prospects to be a drunkard, than to be smitten with the divine dipsomania of the original investigator. I am inclined to think he was not far wrong."

T. H. Huxley, "Universities: Actual and Ideal." (1874.)

If it were not that human nature tends to err and to forget there would never be any necessity to reflect upon the full meaning of scientific investigation in the veterinary sciences. Unfortunately there are two things which foster this forgetfulness, the one is, strange to say, the enthusiasm of specialists in a single science; the other, an outgrowth of the first, is the absence of profound reflection on the interfusion and co-relation of all the sciences.

What could be more common than the judgment that specialization tends to narrow-mindedness: what, indeed, is more true. It may be every day observed that the mental twist a man has from the personal conviction of the importance of the science in which he is a worker almost invariably makes his judgment on other sciences, and on other scientific workers, both because of his ignorance and because of his bias, worthless. We may with gratitude rely upon such a man's conclusions in his own science; but we may well turn away and smile when he attempts to speak *ex cathedra* on other sciences. Of what value, for example, are the judgments of a specialist, exclusively, in surgery on the work and conclusions on a strictly medical

case attended to by a specialist, exclusively, in medicine? Of what value is the judgment of a deep specialist in a branch of geology—like palaeontology—on the methods of investigation and conclusions of a deep specialist in pathology? Nay, we need not go outside our own sciences: of what value is the judgment of an exclusive student of histology on the methods of investigation and conclusions of a man who is exclusively a specialist in abnormal histology. The two sciences are closely related, yet the dicta of the one can hardly be questioned by the specialist in the other. Respect, as we may, the knowledge of specialists in veterinary sciences; as a rule we must be amused, perhaps sometimes chagrined, at their limitations of knowledge exposed in their judgments on what constitutes investigation, on what is scientific method of investigation, on what the scientific spirit is, on what are scientific conclusions in other specialties than their own.

It is a commonplace of educational theory that no man can be a great specialist until he is first well read in many specialties besides the one of his choice. Fortunately we have some men in the profession to-day, and we will have more in the future as the demands become greater amongst us for profundity of learning, who are acquainted with the whole circle of the natural sciences, whose scholarship in the kith and kin of the natural sciences which constitutes the sum of those we should know is wide; men, who, while their faculties may be mainly exercised in one branch of medicine, are sufficiently acquainted with the others to be awake to the advantages of scholarship in the other branches. Unfortunately, except in these few, the stream of tendency has been for men particularly learned in a specialty to betray, in their judgments on investigations, perhaps related to but likely not in the line of their thinking, an ignorance born of incapacity to understand other points of view, or an ignorance of other methods of scientific procedure than their own. Though the family of the natural sciences which are enclosed in our own particular circle—veterinary medicine—are few in number they overlap one another

and are so interfused as sometimes almost to be inextricable. Here is a man attempting to discover the etiology of a certain set of phenomena—an obscure disease, let us say—can he fail to have his mind set to thinking upon the many consequences of the disease to the organism if the disease is systemic? Hardly, we would think. We are too apt to think a disease has one cause when it may have many: we are too apt to have the mind set on a single cause and to forget the many effects on the organism. In our concentration of mind on the investigation of a point in pathology we are apt to overlook other methods of investigation of the same point, to eschew other theories which might explain the phenomena found. Rabid with a worthy enthusiasm for a favorite method in a favorite specialty, we are likely to depend too much upon it and to expect too much of it. Failing to find our etiological factor to explain the disease, we are likely to find fault with our method; whereas we should find fault with ourselves. There may be many causes. Our point of view may be wrong. We expect our method to explain too much. In a word, by too great concentration on one point, on one method, in one specialty, we lose our hold on the many relationships a single group of phenomena may have to the organism; we have none of that profound reflection which would make us see these relationships. The great men in veterinary medicine, as in human medicine in the past, must be those who do not expect to solve the mysteries of nature by laying too great weight on a single method or a single theory. Scientific investigation may take a multitude of methods to come to conclusion on one point, to explain one mystery.

In order to ascertain what the true scientific spirit is, what should be the characteristic attitude of the broad-minded scientist to the work of others in his own science or in other sciences, we may well consider, first of all, the relationship of science to culture, or science as culture: for, if we can determine this, we can understand the spirit which gives birth to investigation and its products.

Science as culture: the relationship of science to culture.

Perhaps there has been in modern times no man in Great Britain who understood the meaning of culture so well, nor whose views on culture were so readily accepted, as Matthew Arnold. In his famous essay, *The Function of Criticism at the Present Time*, he has laid down the doctrine that culture is "to know the best that has been thought and said in the world," and he adds that this can only be obtained by constant reading and association with ancient and modern literatures. His first proposition we can readily accept for perfect culture "implies the possession of an ideal and the habit of critically estimating the value of things by comparison with a theoretic standard. Perfect culture should imply a complete theory of life, based on a clear knowledge alike of its possibilities and its limitations." But when we turn to his second proposition, that this perfect culture can only be obtained by exclusive and habitual imbibing of literature, all scientists who know their work and its values must demur. In the same way, in America, there has been no greater exponent of literature as the invariable channel for those who would possess perfect culture than Ralph Waldo Emerson. In his celebrated address before the Phi Beta Kappa Society at Harvard called "The American Scholar"—and its tone is in marked contrast in spirit and substance to the addresses delivered before the Honorary Scientific Society of Sigma Xi at Cornell—he has said substantially that the office of the American scholar is to receive a personal inspiration from a kind of uncritical, unanalytical adoration of Nature, from imbibition of the spirit of the past—by implication through literature. These are to give the American scholar his insight into the present. Both of these men had a true catholicity of spirit and a true sympathy with scientific thought, though both lacked appreciation of the weight of modern scientific thought and work in the sustenance and formation of culture in their times and since. The error into which both have fallen is the same. Both were among the most remarkable literary men of the past generation. Yet both, in a time which was distinctly a period of

scientific work and aspiration, missed true valuation of its purposes and its endeavors. The progress of science has been such that at present we are unwilling to admit that neither a nation nor an individual can really advance whose common outfit draws nothing from the natural sciences. Reliance upon literature alone as a means of cultivation of the faculties, or as an inspiration to intellectual endeavor, has been supplanted by the idea that the study of sciences has equal place with literature for discipline or for cultivation of keenness of mind.

This idea in modern education admirably vindicates itself by furthering scientific progress. We may therefore inquire now in what the scientific spirit, which furthers knowledge of nature and insures the new form of culture, consists. Grand as the conception of the means for finding culture, as espoused by men like Arnold and Emerson, is—the reliance in the inspiration of literary seers—the conception of the means of culture which obtains amongst men of natural science is grander: for it neither trammels nor bewilders the intellect. Note, first, the only place authority can hold in science; note, second, the right and the happiest pleasure the scientific mind at work has, to convince itself of natural truths; note, third, the purpose the scientific mind has when at work; note, fourth, the atmosphere in which the scientific spirit has its play and its being.

First, the only place authority can hold in science. At any moment in the history of any single science there is always a body of facts or principles or laws pertaining to that science which have been put through the fire of tests in continued experiment or observation and as a result of the ordeal scientific men have come to the united conviction that they are truths in that science. The eminent bacteriologist, Dr. Veranus Alva Moore, has given the term "dead-wood" to such facts, meaning that the facts are settled as facts. This is the only meaning that the term authority can hold in science. Yet the statement of fact even here is not unalterable; nor, on the last analysis, can it be said that any fact or body of facts is beyond dispute; for everything in science can be questioned by any other inves-

tigator who works them over, and the discovery of new facts often requires that old facts be re-stated in the light of later discoveries. Second, the right and the happiest pleasure the scientific mind at work can have, to convince itself of truths of nature. Science holds it as a cardinal doctrine that everything in its store of truth, known or unknown, can be questioned and inquired into by any investigator. Its fondest hope is that each of its votaries will try old truths and prove them for themselves if they so desire; or that they will beat out new paths for themselves in the world of nature, that we may have a larger heritage of knowledge. It is the duty and the delight of the scientific mind to prove all things and hold fast that which is good. The right of personal inquiry until conviction is reached is never called in question. Third, the purpose the scientific mind has when at work. The scientist, young or old, can try all things in the crucible of his own mind. But the purpose, mainly, of the scientific mind is the noble ambition to enlarge the boundaries of knowledge of nature, either by following in the footsteps of the explorers of new fields of knowledge or else to find out new paths for themselves. Exploitation of new fields of nature; exploration of all her realms, this is the purpose of the scientist. Fourth, the atmosphere in which the scientific spirit has its play and its being. As the moral nature of man is greater than the intellectual, even so the moral spirit, which has governance of the scientist at work, marks him in his every effort. The very atmosphere he breathes, therefore, is charged with exhilaration for truth for its own sake. This power is a greater possession than much knowledge, as the moral incentives transcend the intellectual aspiration.

This spirit which governs the scientist, this atmosphere in which he lives, moves and has his being, keeps him in roads which lead to true culture. The value of science as a study which leads to perfect culture of manhood, whether on the intellectual or the moral side, is now obvious. John Stuart Mill, whose fame as a logician and political economist has gone abroad through many lands, and who was himself an ardent ad-

vocate of classical study, though his spirit was really characteristically scientific, has written a passage which, with some little change, applies equally, at least as strongly in scientific study and investigations, as it may in classical study, in which he meant it to apply, that it would be apropos to quote it here : "To question all things ;—never to turn away from any difficulty ; to accept no doctrine either from ourselves or from other people without a rigid scrutiny by negative criticism ; letting no fallacy or incoherence, or confusion of thought step by unperceived ; above all to insist upon having the meaning of a word clearly understood before using it, and the meaning of a proposition before assenting to it ; these are the lessons we learn," "from workers in Science." "With all this vigorous management of the negative element, they inspire no scepticism about the reality of truth, or indifference to its pursuit. The noblest enthusiasm, both for the search after truth and for applying it to its highest uses, pervades those writers." "In cultivating, therefore," "science as an essential ingredient in education," "we are all the while laying an admirable foundation for ethical and philosophical culture." The habitual attitude of the worker in natural science towards truths new and old keeps his mind in a state of flux towards all new truth, opens his mind to all new enlightenment from whatever source. Such a mind with a ready wakefulness for new truth must of necessity be called cultivated as readiness to weigh and consider all truth is characteristic of the cultivated mind.

The error of narrowing down the meaning of the word Science.

Probably I will be considered venturesome by members of my own profession, and by scholars in natural science, when I attempt to point out the danger of a limited interpretation of the meaning of the word *Science*. In the older days there used to be a phrase bandied about—*odium theologicum*, the hatred of one school of theology for another—similarly is there not sometimes an *odium professorium*, a dislike, a mild dislike if you like, of a professor of one kind of science for another ? A certain narrowness creeps in sometimes as to what true scientific work is,

of what science is. We may then consider, first of all, what is the really limited, though apparently broad, interpretation of the word science as it is used by workers in natural science; then come to a just and comprehensive idea of what is meant by science.

Science, according to the meaning used ordinarily by students and investigators in natural science, and particularly by the students of the biological sciences which come under the heads of veterinary and human medicine, may perhaps be said to be something as follows: "a knowledge of the phenomena of the Universe, as that which lies about the individual man: and of the rules which those phenomena are observed to follow in the order of their occurrence, which we term the laws of Nature." In a word, science is an exact knowledge of natural fact. The knowledge of the facts of natural science is obtained by the individual, not from bookishness, but from a direct perception of the facts and the practical exercise of the observing and reasoning faculties upon them. But actual knowledge of natural fact may, and often is, confounded with the process by which the facts are obtained: we should, therefore, inquire what is the process of obtainment. The secret of the acquisition of knowledge of natural science consists in proceeding from the easy to the difficult, from concrete items of knowledge to abstractions or conclusions based upon it. The secret of the process consists in the examination of natural phenomena one after another to discover their underlying facts and to reduce all new facts, all new powers, to their class and their law. So in the process of examination of things in nature the student of natural science sees the last fibre of organization in nature and infers its meaning by his insight. By observation and experiment the investigator in natural science comes to induction, or conclusion, and discovers causation.

The fault or error of this interpretation of the word science and of the scientific process consists in its limitation to natural science: so, it may be asked, what is the more just and comprehensive meaning of the word science. From its etymology, and

in its simplest interpretation, the word science means knowledge. But to be scientific, as now understood, the knowledge must have orderly arrangement. The word science cannot now be confined to absolute and provable knowledge of natural fact systematically arranged, for example it cannot be limited to facts in the biological sciences. The word and the process have been carried into every sphere of activity where exact knowledge is obtainable. The word science, the scientific process, the scientific spirit, have been carried into every field of activity where the mind of man ranges, so that a myriad of sciences, thoroughly as searching in their methods and in their call for exact knowledge, have appeared, where the word is used quite apart from its limited meaning in the natural sciences. Scholars in natural science are apt to forget that in economics, in the branches of sociology, to use but two illustrations, the stern satisfaction of truth for its own sake equally obtains.

Scientific progress: meaning of the expansion of knowledge: the law of progress.

If the word science has taken such a large meaning and if the scientific spirit has been carried into so many fields of knowledge—which cannot be denied—we may well reflect upon the cause of the change which has permeated all modern thought with the scientific spirit: for one aspect of this scientific movement was the foundation of veterinary colleges and the multiplication of courses of study in them. Mr. Herbert Spencer, in his essay: "Progress, its Law and Cause," has expounded and laboriously defended this statement of the law of progress. "Every active force produces more than one change—every cause produces more than one effect." We may take this dictum for granted, for it is everywhere, in natural sciences at least, scientifically defensible. The foundation of veterinary colleges and the differentiation of the veterinary sciences into a variety of studies was only another instance of the appearance of the scientific spirit in a comparatively new realm. The cause of the change is found in the law of progress. But intellectual progress in this, as in all the sciences, will depend upon two

things—freedom of thought and a hearty desire for the advancement of knowledge. No constrained view of what scientific work is, of what science is, can do anything but deter either the one or the other. In this science, as in all the sciences, it will be found that advances will be made by just those men who dare to doubt and who stoutly believe in the scientifically inculcated maxim that no statement has a right to be believed until it can be maintained beyond all refutation. As every rightful pleasure honorably exercised increases vitality, and as the exercise of the faculties for the advancement of knowledge is the most exhilarating of mental pleasures, scientific progress in veterinary medicine is assured in America to-day by this form of vitality exhibited in the profession.

The false notion that possession of the scientific spirit excludes the possession of other gifts of a high order by the same person.

Nor does the possession of scientific energy and a nature instinct with the scientific spirit exclude the possession and the exercise of other gifts of a high order by the same person. There has been at times much odium and rancor aroused by the combat of men intensely scientific in their longings and aspirations with men who stood stoutly for classical scholarship alone, that the result has been that these very scientists have failed to see that both the scientific and the literary gifts often enough co-exist in the same persons. Yea, more, have co-existed in the very persons who have, as scientists, entered most strongly into controversialism with men in literary camps. Some of these men have been almost equally eminent in Science and Letters. If the godlike gift of literary expression is possessed by a man fraught with the scientific temper his zeal in science gives edge to his literary gifts and arouses and dilates these faculties to their highest and noblest activity. Who of us has forgotten the strenuous life of Professor T. H. Huxley of the Royal Society, whose vindication of the cause of Science as opposed to Letters, by a sort of irony, won for him an equal place in both Science and Letters. He, a great Professor of

Comparative Anatomy, and by all odds an investigator of the highest gifts, has not lived to-day to see his scientific essays studied for literary excellence in the Universities. Herbert Spencer, also, who carried the habit of scientific research into the abstruse field of speculative philosophy, though his style is diffuse, has been turned to by literary scholars for points begotten of his scientific research in rhetoric : for his scientific essay on The Philosophy of Style touched the foundation principles of the rhetorical power which is both a science and an art. In America, also, was not the autocrat of American Letters, Oliver Wendell Holmes, all his life a Professor of Human Anatomy in the great Harvard Medical School. Is not David Starr Jordan, President of Stanford University, alike a scientific investigator, heart of the heart of Louis Agassiz, as shown in his three volumes on North American fishes, and also a writer with many graces of expression. Does Dr. James Law of our own profession lose any of his zeal for scientific research by his power to command respect as a writer ?

We do not need to envy these men who possess the literary gift ; rather we should be proud that these men who possess it possess also scientific gifts, scientific purposes and bear all towards scientific ends ; who can patiently seek the truth in the science into which they bend their energies, and finding it, can speak of it truthfully and yet eloquently. A scientific truth is twice a truth when it can be so spoken of that it impresses men. We should be all the more on our guard against this false notion that the possession of the strongest scientific purposes and the instinct of research forbids the possession of a high power of expression : for scientific methods of research have had extension to all branches of learning in some of which literary power is absolutely necessary, in which also the spirit of scientific research has demonstrated its place. In History :—the Oxford Historical School calls itself rightly scientific in its methods for it applies the strictest scientific rules for weighing evidence to support historical fact. In Literature :—Scientific method largely has its sway. In Philosophy :—psychology has become

a study of mental phenomena through ingenious scientifically devised machines. Conversely renown as a philosopher and literary man does not necessarily viciate a man's habits of patient scientific discovery. Huxley was noted both as a man of no mean powers as a metaphysician and as a literary man ; yet, at the height of his power, when he was honored by the Rectorship of Aberdeen University, he confessed himself nothing but a patient researcher in Comparative Anatomy. Huxley was not an anatomist of the domesticated animals, but largely of the anthropoid apes and of lower marine fauna. Nevertheless his work was the same in kind with our own in veterinary anatomy and the eminence to which he arose should have its bearing upon our judgment.

The scientific spirit at work : the methods of science.

As what holds in investigations in the natural sciences in general is true of investigations in veterinary medicine, I shall, first of all, propound five axioms which obtain in the natural sciences ; then go on to speak in sequence of :—first, the place of reason in investigation ; second, the place of observation ; third, the place of experiment ; fourth, the place of imagination ; fifth, the course the intellect passes through in the formation of scientific theory ; sixth, the way unanimity is reached by scientists upon scientific facts.

The scientific spirit at work has as confines these maxims or axioms. First, science must be cultivated not for love of money, applause, notoriety or continued fame, but for love of truth : knowledge alone is the end. Second, investigation is to be carried on for precise knowledge of natural fact. Third, the appeal in every case is not to authority, what anybody may have thought or said, but to nature. Fourth, wordings in statements of natural fact in all cases are imperfect. The truth is not to be sought in the language used to express it ; but in the things, facts. Fifth, mere assertion outstepping evidence educible from nature is criminal.

The methods employed in scientific research are multiform ; nevertheless advances are sought through the channels or meth-

ods now to be discussed. First, the employment of reason ; reason unrestrained and ample in its operation must be allowed if the goal of truth is to be reached. Second, observation, exhaustive, detailed, painstaking, is an element in the success of all scientific investigation. The original observer is he who notices relationships which others have overlooked. Third, experiment, which is really only artificial observation, is a favorite method to make nature give voice to her truths. But this method has its limitations. The knowledge obtained may be scanty and the data obtained insufficient. There may be two reasons why experiment may be unsatisfactory ; for the reason that the experimenter lacks ingenuity in devising experiments ; for the reason that the experimenter may lack apprehension what experiments to try and to what end. But by this method of testing nature discoveries may be made, and, when made, can always be demonstrated by return to the same method devised. Fourthly, there is no boldness necessary to say that imagination is necessary in research. This, in science, is that power of the mind, well-ordered and disciplined by reason, which never turns away from the cold facts found, whereby we form conceptions of things in nature which we are investigating and proceed to see if the conception tallies with the facts, or the facts with the conception. This idea of the scientific imagination is far and away from the riotous and capricious exercise of the faculty in the sense sometimes used.

What now, fifthly, is the course the intellect passes through in the formation and vindication of scientific theory ; and, sixthly, how is unanimous agreement reached by scientists on scientific facts. A scientific theory is a conception of the human mind which, to find force amongst scientific workers, must receive verification in the world of nature. When a scientific theory has been conceived the theorist proceeds in his thought, by a vigorous analysis, to make out what phenomena in the actual world must be present and found, if the theory is to be substantiated. If, after a vigorous study of phenomena in the actual world he finds the phenomena in every case tally with the

theory, the presumption is strong in its favor. If in every case phenomena in the actual world observed by all other workers agree with the theory, its support grows still stronger. When, under similar conditions, by everyone and everywhere the phenomena are found to tally with the conception, the theory assumes the dignity of law and we rightly call it natural law.

Though the effort of the human mind in the formation and substantiation of a scientific theory represents a great exhibition of intellectual power; though the course the intellect passes through is a difficult one, the difficulty is enhanced by what must occur before there can be perfect agreement of scientists upon its truthfulness. Usually many theories are presented to substantiate a set of phenomena. Numerous independent seekers for truth carry out their researches according to varied methods. Each has zeal for his own theory. The theory which more nearly covers the truths must gradually enforce its own adoption. By a process of elimination of error and a more and more wide substantiation of a single theory, agreement is reached at last.

Science and the applications of science: the relationship of scientific discovery to practical usefulness.

Upon nothing has there been such a mass of footless talk and silly writing as upon what is called "pure and applied science." There is something of a sneer implied by the so-called practical people, who take advantage of the discoveries of patient investigators for private fortune, in their babble about "pure science," which is exasperating. In the profession of veterinary medicine who has not heard the remark, "he is very good in science; but no good in practice." The opinion seems to prevail amongst the shallow-minded that the greatest stock of scientific knowledge is a bar to personal, practical usefulness. Moreover, if the veterinary scholar has a particular penchant for research and pursues it at his leisure, let us say, with a furious ardor the zest is thought to be all the more disastrous to his practical utility. The worst of it is it sometimes turns out to be true, in which case there is reason for a smile. How-

ever were it not that in France, Germany, England and America the famous practitioners have all been avowedly men of wide knowledge of the facts of the veterinary sciences for which they are largely under obligation to researchers, and are themselves always seeking the newest facts from the latest researchers and themselves carry on many private researches, the stigma would be excruciating. We may now, therefore, with wisdom, point out the obligations of the appliers of scientific fact to the discoverers of scientific fact.

There are three classes of workers in science : those who aim to discover truths of nature, who make it their vocation by patience and persistence to unfold the truths of nature for the truth's own sake ; those who lay hold of and disseminate these truths, whose vocation is to teach the truths obtained by the investigators ; those who lay hold of the truths and apply them in the trades, in the manufactures, in the mercantile arts, in the scientific professions for personal aggrandizement, for the safety, the comfort or the luxury of mankind.

We in America are so carried away with joy in our material progress, largely obtained by the application of scientific knowledge to practical utility that we are apt to forget the obligations we owe to the patient, unselfish toilers in scientific research, whose labors, carried on through centuries, anteceded the application of the knowledge they accumulated and without which no application would have been thought of or would have been possible. We boast the invention of the electric telegraph, forgetting the accumulated facts obtained in silent research which allowed their application to invention, of Volto who discovered the source of electricity, of Faraday who discovered the relation of magnetism to electricity, of Ohm who discovered the voltaic circuit, of Ampère who discovered means of measuring electric power. We ignore the work of the quiet, silent researchers at our peril : for any advances in the ascertainment of scientific fact must always antedate their application in practical utility. Similarly in the profession of medicine we talk loudly of sepsis and are careful to show ourselves scientific by utilizing our

knowledge of it, forgetting Lister and his discoveries, forgetting the observations, the researches which led to the adoption of the principle of antiseptic surgery and gaged the antiseptic value of drugs. We talk loudly of infection, forgetting that the very word has wrapped up in it the whole history of bacteriology, the youngest and mightiest biological science applied in medicine. It has taken thousands of researches to insure exact knowledge at every step this science has made in discovery of an etiological factor in a bacterial disease : yet medicine has had to halt and wait until bacteriology had decided upon the truth of each specific factor before it could adopt the truth and apply it professionally. You who forget how those who apply the truths which patient research obtains have labored, should listen to the words of Cuvier, himself a comparative anatomist, than whom no greater scientist has arisen in France: "These grand practical innovations are the mere applications of truths of a higher order, not sought with a practical intent, but which were pursued for their own sake and solely through an ardor for knowledge. Those who applied them could not have discovered them ; those who discovered them had no inclination to pursue them to a practical end. Engaged in the high regions whither their thoughts had carried them, they hardly perceived these practical issues, though born of their own deeds. These rising workshops, these peopled colonies, those ships which furrow the seas—this abundance, this luxury, this tumult—all this comes from the discoveries of science, and it all remains strange to them. At the point where science merges into practice, they abandon it, it concerns them no more."

Investigation a question of motive.

The question of whether a piece of work undertaken is scientific or not simmers down into a question of motive ; and the truth of this is brought out strongly by contrasting the objects of studying science of the mediævals and moderns respectively.

The whole strength, such as it was, of the mediæval mind was directed to using the objects of external nature in support

of theological dogma. The only thought the mediæval scholar had in directing attention to the actual world was to illustrate some doctrine of the Church and enforce it for the advantage of discipline and control of the faithful. Strange freaks did their riotous imaginations make of external objects. At once pitiable and amusing is this exhibition of their motive displayed in their religious books. Curiosity, the desire to pry into things, was the devil working in men for the ruin of their souls. Andrew Dickson White, in his Warfare of Science with Theology, Chap. XIX, Pt. 2, says: "As a matter of course in the early Church and throughout the Middle Ages all such studies in nature were cast in a theologic mould. Without some purpose of biblical illustration or spiritual edification they were considered futile; too much prying into the secrets of Nature was very generally held to be dangerous both to body and soul." "In place of research came authority—the authority of the Scriptures as interpreted by the Physiologus and the Bestiaries—and these remained the principal source of thought on animated Nature for over a thousand years." "Like all else in the Middle Ages this sacred science was developed purely by theological methods. Neglecting the wonders which the dissection of the commonest animals would have afforded them, these naturalists attempted to throw light into nature by ingenious use of scriptural texts, by research among the lives of the saints, and by the plentiful application of metaphysics. Hence even such strong men as St. Isodore of Seville treasured up accounts of the unicorn and dragons mentioned in the Scriptures and of the phœnix and basilisk in profane writings. Hence such contributions to knowledge as that the basilisk kills serpents by its breath and men by its glance, that the lion when pursued effaces his tracks with the ends of his tail, that the pelican nourishes her young with her own blood, that serpents lay aside their venom before drinking, that the salamander quenches fire, that the hyena can talk with shepherds, that certain birds are born of the fruit of a certain tree when it happens to fall into the water, with other masses of science equally valuable."

What a contrast is the modern motive for questioning Nature. The motive for studying natural science is solely to question Nature, to find out her secret, hidden, elusive workings. The purpose is a faultless regard for and search for truth and examination for the truth only. The motive of the inquirer is tested by the following criteria : 1, has the inquirer humility of spirit "gladly would he learn and gladly teach;" for the quiet submissiveness is characteristic of the learner, the searcher; 2, freedom from bigotry, willingness to change his mind unhesitatingly under new light; 3, earnestness, a noble enthusiasm for enlightenment; 4, fearlessness which proclaims the truth when found and stands for it come what may; 5, self-sacrifice, for he of proper motive is willing to endure all and do all for the truth's sake; 6, doubt, honest doubt, freedom from gullibility at any turn.

The right of free inquiry in Science now unquestioned both at the Universities and outside of them.

The Universities must be the places where the free inquiry into the truths of Nature must be encouraged. The spirit of the place, the spirit of the men, the books, the laboratories, the appliances all are a spur and an encouragement to investigation. But it must not be forgotten that the Universities have not an embargo on science; that truth is not entrenched there, nor there to be sought alone. Nor must it be forgotten that the right of free inquiry in Science at the Universities, now unquestioned, is of recent origin. Men like Huxley and Spencer, who have but recently passed from amongst us, had to fight royal battles in support of this right which now goes unquestioned, and to plead with gifts of tongue and pen for the admission of natural science and its methods to the Universities. Andrew Dickson White, who is still amongst us, had to fight for two decades after the foundation of Cornell University that free inquiry in science be unopposed, and was in constant imbroglio with fanatics on this question. The right of free inquiry in science has prevailed, the time-spirit accords with this principle alike outside the Universities and within them. This

is a great concession to science. How great a concession it is will not be seen by all. Ability to comprehend scientific truth depends upon possession of scientific gifts and their development. Those who are not scientifically disposed are scientifically blind: eyes have they and see not; ears have they and hear not, neither do they understand. But to those who have the scientific spirit and who are capable of exercising scientific faculty enough to see the truth as it is, the right of free inquiry in Science, now unquestioned, is a great battle won.

How the free play of the scientific spirit has influenced the development of the veterinary sciences.

A science remains undeveloped in proportion to its independence: as soon as it is perceived that sciences have interdependence at that moment their development begins. This has been true of the relation discovered of the veterinary sciences to medicine. The study of veterinary medicine in America as a branch of natural science is hardly more than forty years old. At that time, forty years ago, there was gross ignorance among the people on infections ; that was before the formation of the Bureau of Animal Industry, when hardly a veterinary college was to be found in the land. With the recognition of the rights of research and the free play of the scientific spirit everywhere came the recognition of the value of the veterinary sciences to national wealth and public health. Shortly there came an alliance of veterinary faculties with State institutions for the furtherance of these State interests. This alliance brought about a further consummation which was devoutly to be wished, a change in conditions of veterinary study. The alliance of veterinary faculties with State institutions and the foundation of veterinary chairs at State institutions allows the pursuance of veterinary training at places where the freest scientific inquiry is fostered : it has brought to light the multiplicity of the veterinary sciences as biological studies and their necessary coördination into a single profession. The scientific atmosphere in which a student is placed at such institutions, therefore inspires him, if that capacity is within him, with the

spirit of research. Again, if the expansion of intelligence is possible in him, by virtue of the multiplicity of studies, in the course through which he has to pass, his scientific horizon is widened so that he cannot help but recognize the value and necessity of research.

The question "what investigation is," which looks simple, is really complex.

The question, "what investigation is," which seems so simple, is, on analysis, not so simple as it seems. Like many another simple question its answer involves great complexity. The other question, "the meaning of scientific investigation in the veterinary sciences" is equally as involved. The answers to both resolve themselves into a question of motive. What is the motive of the investigator? What spirit animates him? What are his purposes? We judge these things by the outcome of the work, by the product. The word science can hardly be confined to the natural sciences, nor the scientific spirit confined to labor in natural science. If the purpose of the investigator is a faultless regard for truth, then the scientific spirit, beyond all refutation, is present. If the outcome of the investigation, or the result of the faultless pursuit of truth, is fact undoubted by all men of sufficient intelligence to recognize the validity of the truth obtained, the investigation has been a scientific one, and the conclusion is scientific knowledge.

At least everyone will grant this is the interpretation of the meaning of investigation in the natural sciences. Let us carry this interpretation into the veterinary sciences which are all branches of natural science. Now will appear the reason why I have, in this paper, taken this circuitous route to come to my conclusions. The object of any investigation in any branch of natural science, including any branch of veterinary science, is the advancement of knowledge or the ascertainment of new facts in that science. How is this advancement of knowledge to be made? How are the new facts to be obtained? In my discussion of the methods of science and the process the scientific mind passes through I treated, tentatively, of the construction

of theories in science as a means of explanation of phenomena. We may now analyze scientific theory in another way, or at least look at it from another viewpoint.

The changeableness of scientific theory.

The late Professor Henry Drummond of Glasgow University used to say that, at least at the end of every five years, the great majority of scientific papers and books should be relegated to the top shelf or the dust heap : for so rapid are the advances in science and so changeable is scientific theory that constant readjustment must be made of statement to suit new facts. Since the removal of the ban upon curiosity there has been a constant reformation of theory to suit newly ascertained facts. Much of the explanation of ascertained facts in natural science is hypothesis or theory which may be upset by new facts to-morrow. Theory is so changeable as to seldom reach the dignity and unquestionableness of natural law. Yet the ascertainment of scientific fact and its theoretical explanation constitutes an important part of scientific work. In the work of natural science the theory formed to explain ascertained facts may not only be overturned by new knowledge but, in scientific discussion, it may be adjudged unsound as explanation of facts originally obtained. A variety of theories may be advanced to explain scientific facts. To-day one theory may prevail : to-morrow another. Hence we find Robert Koch in the seventies obtaining the agreement, apparently, of the scientific world, that bovine tuberculosis and human tuberculosis are caused by one and the same germ, in no way to be differentiated in bacteriological appearance ; hence, in 1901, we find him taking the opposite view and advancing the theory that the bacilli of each disease are differentiable from one another, and there is no danger from intercommunicability.

As many theories may be advanced to explain scientific fact are not the men who advance these theories, which to them suitably explain facts they obtain, original investigators ? Certainly ! Following Koch's statements in 1901 came a whole snowstorm of pamphlets containing the results of innumerable investigations carried on by scientific men the world over which

tended to disprove his new theory. Are not all these independent workers original investigators? All are ardently studying facts or reaching forth for new ones. All are investigating and theorizing. Various facts are discovered. Various theories are raised to explain facts. Hence the babble. From the midst of the babble will be produced, as a result of the ardor of the investigators with varied theories, a body of facts regarding the disease, agreeable or not agreeable to the notion of transmission of the disease from animals to man, which, in statement completely corroborated, will assume the dignity of natural law.

What shall we judge to be scientific investigation in the veterinary sciences: In what shall the subject matter consist: What form shall it take.

Scientific investigation in a branch of veterinary science is the ardent pursuit by whatever method of new facts in that science. This definition needs explanation, perhaps emendation. The results may be positive or negative. The emphasis should be placed on the words *ardent pursuit*. For, even though the results of a piece of research, carried out with ardor, may be negative, the work was none the less an investigation while the scientific temper prevailed. Think of the disease tuberculosis as a subject for investigation at the present time. Consider for a moment some of the unsettled questions pertaining to the disease, and some of the methods which must be employed by scientific investigators before these questions are settled.

The two main questions upon which it is vain to think there is agreement are: Can bovine tuberculosis be transmitted to man with a probable result that he will eventually die of the disease; Can human tuberculosis be transmitted to cattle with a probable result that the disease transmitted will be fatal? The second question is largely a matter of observation and experiment. But the first question is largely a matter of observation alone. To experiment in this case would be a crime punishable as murder. The reliance must be in statistics. Agreement of scientists on these questions, how shall it be brought

about. In the second question the course is easy, corroborative experiments will bring agreement. Mark, though, that the work of each man in experimentation and observation, whether or not the evidence he produces is corroborative, is original investigation. In the first question the observations of physicians and other scientists of cases of supposed transmission of the disease from animals to man must be collected. The work of collectors of such data, the criticism of it and of conclusions drawn, is in the strictest way scientific investigation and the conclusions are in the strictest sense scientific conclusions. For no other method in this case can be devised by science to form the conclusions. This illustrates the multiplicity of methods which may be employed in investigations in natural science to come to valid scientific conclusions.

In what shall the subject-matter of an investigation in veterinary science consist? If we turn to my favorite subject of pathology we may see that the answer to even this is not simple. Consider the question of rabies. What is the etiological factor (cause) of rabies? How are the changes in the nervous system in rabies caused? What, histologically, are these changes? In each of these questions which will be ultimately investigated and answers determined, various branches of veterinary medicine:—physiology, histology, bacteriology, are inextricably interfused. The subject-matter of each question may take many phases according to the personality of the investigator, the phase of each question which may appeal to him. Each phase reveals problem beneath problem, though the young investigator does not realize this until he is at work. The search for new facts may involve only a part of each question. The solution of any of the questions will likely come from the working over, research, in each phase of the subject-matter by many hands and many minds before a settlement will be made of any question.

Where shall investigation in the veterinary sciences be done?

By whom shall it be done?

In my discussion of the place the colleges and universities

hold in the fostering and continuation of research, it may appear that I believe them to be a sort of repository of truth, or the one place where the truths of nature may be sought out. No conclusion could be more ridiculous. Research may be carried on outside the university as well as in it. Galileo's discovery of the moons of Jupiter, the investigations of Copernicus and Kepler overthrowing the Ptolemaic theory in astronomy, were done away from colleges and without the aid of costly apparatus. In our day inventions, which are applications of facts of science to mechanical utility, are, almost to the last one, done away from colleges. The new facts in infections must be observed by investigators who cannot be in touch with laboratory appliances. The work of Jenner, in his simple and immediate observations as a physician, was the beginning of our present elaborate knowledge of toxins and antitoxins.

The wide application of the term scientific investigation.

The term scientific investigation has a far wider meaning than is commonly put forth for it. Students of natural science, and particularly students of the veterinary sciences, should be on their guard against narrowing the meaning of scientific investigation to a meagre portion of laboratory work. The term has a far grander meaning than that. Multitudes of observations leading to the most important conclusions in natural science have been made without the aid of any laboratory appliances whatever. The observations of Charles Darwin which are revealed in his works, *The Origin of Species*, and *The Descent of Man* and his conclusions on natural selection were made without any such artificial aids. Agree or not agree, as we may, on what are the mental or moral characteristics of the investigator, in natural science, or in any other science where exact knowledge is to be looked for and found—in manufactures, in the industries, as well as in more abstruse subjects like philosophy, where the scientific mind of Herbert Spencer successfully had its play, in all, what crowns a man an investigator is love of truth for its own sake, the pursuit of exact knowledge unslinchingly. We look only for "things as they are." The investigator's ideal

is aptly expressed by Rudyard Kipling in the last lines of *L'Envoi*:

" Only the master shall praise us,
And only the master shall blame ;
And no one shall work for money,
And no one shall work for fame ;
But all for the joy of the working,
Each in his particular star ;
We shall paint the things as we see them,
For the God of *things as they are.*"

THE EFFECT OF TUBERCULOSIS VACCINATION UPON CATTLE INFECTED WITH TUBERCULOSIS.¹

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During recent years a large amount of work has been done by Koch, Trudeau, de Schweinitz, von Behring, Maragliano, Fraenkel, and others, for the purpose of discovering and developing a specific treatment for tuberculosis. This work has taken various directions, and has included experiments wherein the toxins of tubercle bacilli have been administered and experiments wherein antitoxins found in the blood of animals that have been treated with toxins have been used. Toxins of various kinds have been employed; from the original and new tuberculin of Koch to the toxalbumin, the watery tuberculin, the tubercle bacilli deprived of fat of Maragliano, and bacillary pulp.

The antitoxins that have been used have been developed as a result of the injection of the various toxins mentioned above, and also living tubercle bacilli of low virulence.

The reports of the therapeutic experiments made upon infected animals with tuberculosis toxins and antitoxins are

¹ Read before the Pathological Society of Philadelphia, Dec. 22, 1904.

numerous, but cannot be regarded as convincing. Most of these experiments have been made upon rabbits and guinea-pigs. Neither rabbits nor guinea-pigs are altogether satisfactory for experiments of this kind ; the former because of their comparative immunity to tubercle bacilli of the human type, the latter on account of their excessive vulnerability to inoculation tuberculosis of either of the mammalian types. Enough work has been done to denote that the progress of a tuberculous infection may be controlled in some degree by specific means. It is important that these various methods shall be compared and measured both quantitatively and qualitatively. There is here a large and important field of labor for the critical experimentalist.

Among the means that have been proposed for controlling the spread of tuberculosis among cattle is vaccination, or the inoculation of animals with living cultures of tubercle bacilli of low virulence for the animals upon which they are inoculated. This method of producing artificial immunity has been the subject of considerable study both in this country and in Europe, and has been reported upon to this Society by the writers of this paper.

In connection with some tuberculosis vaccination experiments made by the writers, the opportunity occurred to test the effect of vaccination upon some young cattle already infected with tuberculosis. As this treatment appears to have had a decided effect upon the course of the disease in the infected animals treated, it is considered that our observations should be placed upon record, especially since the work covered nearly two years, long enough to show definite results, and is the first of the sort of which we have knowledge.

In testing with tuberculin a large herd of shorthorn and grade shorthorn cattle in December, 1902, that was known to have been infected with tuberculosis for a number of years, it was found that practically all of the members of the herd responded affirmatively to the test. Among the animals so responding were twelve calves from six to eight months old. As these

calves had mingled rather freely with the members of the herd, and as they had been reared on the milk of extensively tuberculous cows, it was not surprising to find that they responded to the tuberculin test. These twelve calves were obtained for use in this experiment. They were shipped to Philadelphia and were placed in a temporary building on the grounds of the veterinary school, where they were kept apart from other cattle.

The twelve calves were again tested with tuberculin February 2, 3, 1903. All responded to this test. They were then weighed and divided into two lots, of six each, as nearly equal as possible in respect to age, size, weight, and condition. One of these lots was subdivided into two groups of three each.

The three calves of one of the sub-groups were given seven intravenous injections of a standard suspension¹ in water of tubercle bacilli of human type (culture M). The dosage began at 1 c.c. and was increased to 6 c.c. The intervals between injections were from six to twenty days, and the period covered was from February 9 to May 1, 1903, as is shown by the protocols. These same calves received another and final intravenous injection of 5 c.c. of a standard suspension of living tubercle bacilli (culture M) about a year later, March 29, 1904.

The three calves of the second sub-group were given subcutaneous injections of tuberculin at intervals of from two to ten days. The injections of tuberculin were repeated until the hypersensitiveness of the animal to tuberculin had disappeared, after which the calves received an intravenous injection of a suspension of tubercle bacilli (culture M) in water. Following each intravenous injection of living tubercle bacilli, the animal was again given tuberculin a number of times until its hypersensitiveness to tuberculin again disappeared. The procedure in these cases in respect to the order of the injections of tuber-

¹ By a standard suspension is here meant a suspension of tubercle bacilli in water, in such quantity as to give an opacity equal to that of a twenty-four-hour culture of typhoid bacilli in bouillon; 1 c.c. of such a suspension is estimated to contain the equivalent of 0.0013 gram of tubercle bacilli dried ten days in a desiccating chamber over calcium chloride.

culin bacilli was as follows: Two subcutaneous injections of tuberculin, an intravenous injection of tubercle bacilli, six injections of tuberculin, an injection of tubercle bacilli, six injections of tuberculin, an injection of tubercle bacilli, three injections of tuberculin. The period of treatment extended from February 9 to April 30, 1903, inclusive; the exact times of administration and the doses are shown by the protocols. The calves of this group, as of the first group described, were given an intravenous injection of 5 c.c. of standard suspension of living tubercle bacilli (culture M) March 29, 1904. Following this, tuberculin was administered five times at intervals of three or four days.

The remaining six calves were given no treatment whatever, but were, at all times, kept with the six calves under treatment; so that all of the twelve calves in this experiment were subjected to the same conditions of life and subsisted upon the same kind and quantity of food.

All of the calves were kept in a stable until May 29, 1903, when they were placed upon pasture, which became very scanty during the latter part of the season. During the winter of 1903-04 the cattle were fed mixed hay, corn fodder, and a grain mixture of bran and corn meal. Only a little grain was fed. About the middle of May, 1904, the cattle (now about two years old) were again placed on pasture, where they remained until they were killed at the close of the experiment.

Two cattle, both controls, died; the first one May 5, 1903; the second September 13, 1904; two, one control and one treated, were killed April 4, 1904, and the rest were killed in September, 1904.

When the cattle in this experiment died or were killed they were submitted to careful post-mortem examination. Material was stained for examination for tubercle bacilli and guinea-pigs were inoculated from the lesions of some of them. Histological examinations of the lesions were made by Dr. C. Y. White, to whom we are greatly indebted for reports upon his examinations.

The treatments and post-mortems are summarized in the following protocols:

FIRST GROUP.—*Three calves that received intravenous injections of tubercle bacilli alone.*

FIG. 1.—*Red Bull (16,013).*

1902. December 19.	0.1 c.c. tuberculin;	reaction.							
1903. February 2.	0.8 c.c.	"	"	"	"	"	"	"	to 106.2° F.
" "	9. 0.0013	gram, human tubercle bacilli, intravenously.							
" "	18. 0.0032	" "	" "	" "	" "	" "	" "	" "	
" March	2. 0.0039	" "	" "	" "	" "	" "	" "	" "	
" "	21. 0.0039	" "	" "	" "	" "	" "	" "	" "	
" April	4. 0.0052	" "	" "	" "	" "	" "	" "	" "	
" "	10. 0.0065	" "	" "	" "	" "	" "	" "	" "	
" May	1. 0.0078	" "	" "	" "	" "	" "	" "	" "	
1904. March 29.	0.0065	" "	" "	" "	" "	" "	" "	" "	
" September 15.	Killed								



Right lung.

FIG. 1.

Left bronchial gland.

Necropsy.—Weight 643 pounds; fair condition. The lesions of tuberculosis found in this animal were as follows; At the lower border of the middle lobe of the right lung was a slightly depressed area about one-half inch in diameter containing a collection of thick yellow pus filling a cavity the size of a large pea. The walls of this cavity are one-eighth of an inch thick, white, and of firm, dense texture. In one of the left peribronchial glands there is a caseocalcareous nodule about the size of a pea and having the appearance of a wholly closed process. Guinea-pigs inoculated from a lesion in the lung became tuberculous.

FIG. 2.—*Red-and-white Bull (16,017).*

1902. December 19. 0.1 c.c. tuberculin; reaction.

1903. February 2. 0.8 c.c. " " to 105.6° F.

1903. February	9.	0.0013 grm. human tubercle bacilli, intravenously.					
" "	18.	0.00325 "	"	"	"	"	"
" March	2.	0.0026 "	"	"	"	"	"
" "	21.	0.0039 "	"	"	"	"	"
" April	4.	0.0052 "	"	"	"	"	"
" "	10.	0.0065 "	"	"	"	"	"
" May	1.	0.0078 "	"	"	"	"	"
1904. March	29.	0.0065 "	"	"	"	"	"
" September 15.	Killed.						



FIG. 2.

Postpharyngeal gland.

Left bronchial gland.

Mediastinal gland, middle and posterior.

Necropsy.—Weight 467 pounds; good condition. The following lesions of tuberculosis were found: In one of the left peribronchial glands a yellow, caseous area one-tenth of an inch in diameter. In the posterior mediastinal gland there is an area the size of a pea, yellow in color and quite calcareous, surrounded by a white, dense capsule. In the middle mediastinal gland there is a similar area, though much smaller, being but one-twelfth of an inch in diameter. In one of the postpharyngeal glands there is a caseocalcareous area one-half of an inch in diameter, surrounded by an unusually thick, dense, white fibrous wall. The caseous collection contains many calcareous grains. There are also in this gland three other similar areas, much smaller, about one-eighth of an inch in diameter, and each is surrounded by a dense capsule. In addition to this evidence of tuberculosis it was observed that both lungs, although generally well inflated, were heavy, soggy, somewhat leathery and without elasticity. There were some small areas where the tissues were contracted and dense. Histologically these areas show numerous dense bands of connective tissue. The blood-vessels are very much thickened. In limited areas some of the

smaller ones are almost obliterated. Some of the smaller sublobules show the lung tissue to be collapsed or organized. The peribronchial lymphatic tissue is increased and the pleura is thickened. There is no caseation or evidence of a tubercular process excepting as above noted. Guinea-pigs inoculated with the caseocalcareous material from the thoroughly encapsulated lesions in the postpharyngeal glands became tuberculous.

FIG. 3.—*Roan Heifer* (16,021).



FIG. 3. Left lung.
Left bronchial gland.

Necropsy.—Weight 465 pounds; good condition. The evidence of tuberculosis here consists in a very dense condition of the lower half of the posterior flap of the anterior lobe of the left lung, which is attached to the posterior lobe and to the pericardium and the diaphragm. This dense mass consists of a very thick wall of fibrous tissue surrounding a sequestrum of lung tissue, about one and a half inches in its anteroposterior and two and a half inches in its vertical diameter. Above this mass the lung tissue of the anterior lobe contains an excessive quantity of fibrous tissue appearing as white bands between the lobules. These bands are quite firm and are from one-eighth to

one-quarter of an inch wide. The parenchyma surrounded by these bands is studded with fine dots and lines of white, consisting of fibrous tissue. Above this sclerotic zone the lung tissue is elastic and pink. There are nowhere nodules or caseous areas, excepting in one of the left peribronchial glands which contains a caseocalcareous nodule the size of a pea.

There is reason to believe that in this animal there has been an extensive area of tuberculous tissue in the lower portion of the anterior lobe of the left lung. This area appears to have become encysted and the lung tissue above to have been the seat of numerous small tubercles which were transformed into scar tissue and appear now very much hardened and contracted.

SECOND GROUP.—*Three calves which received intravenous injections of tubercle bacilli alternating with repeated subcutaneous injections of tuberculin.*

FIG. 4.—*Red-and-white Heifer (16,015).*

1902.	December 19.	0.1 c.c. tuberculin; reaction.			
1903.	February	2. 0.8 c.c. " "	to 105.8° F.		
"	"	9. 1.0 c.c. " "	to 102.8° F.		
"	"	15. 1.5 c.c. " "	to 103.0° F.		
"	"	18. 0.0026 grm. human tubercle bacilli, intravenously.			
"	"	22. 1.0 c.c. tuberculin; reaction to 103.0° F.			
"	"	24. 1.5 c.c. " "	to 102.6° F.		
"	March	4. 2.0 c.c. " "	to 104.6° F.		
"	"	6. 2.5 c.c. " "	to 102.8° F.		
"	"	11. 3.0 c.c. " "	to 103.0° F.		
"	"	14. 3.5 c.c. " "	to 103.0° F.		
"	"	21. 0.0039 grm. human tubercle bacilli, intravenously.			
"	"	27. 1.0 c.c. tuberculin; reaction to 103.0° F.			
"	"	29. 1.5 c.c. " "	to 103.0° F.		
1903.	April	5. 2.0 c.c. tuberculin; reaction to 102.6° F.			
"	"	8. 2.5 c.c. " "	to 102.2° F.		
"	"	10. 3.0 c.c. " "	to 104.0° F.		
"	"	16. 3.5 c.c. " "	to 103.0° F.		
"	"	18. 0.0052 grm. human tubercle bacilli, intravenously.			
"	"	23. 0.5 c.c. tuberculin; reaction to 104.6° F.			
"	"	27. 1.0 c.c. " "	to 102.0° F.		
"	"	30. 2.0 c.c. " "	to 103.6° F.		
1904.	March	29. 0.0065 grm. human tubercle bacilli, intravenously.			

1904. April	1. 1.0 c.c. tuberculin ; reaction to 102.8° F.
" "	2. 2.0 c.c. " " to 103.3° F.
" "	3. 3.0 c.c. " " to 102.4° F.
" "	4. 4.0 c.c. " " to 102.9° F.
" "	5. 5.0 c.c. " " to 103.8° F.
" September 15.	Killed.



FIG. 4.

Left bronchial gland.

Necropsy.—Weight 566 pounds; good condition. The only evidence of tuberculosis in this animal is a calcareous nodule one-eighth of an inch in diameter situated in one of the left peribronchial glands. This nodule is sharply differentiated from the surrounding adjacent, quite normal glandular tissue, and has the appearance of a completely closed process. Guinea-pigs inoculated with an emulsion of this nodule developed tuberculosis.

FIG. 5.—*Red-and-white Heifer* (16,019).

1902. December 19. 0.1 c.c. tuberculin ; reaction.

1903. February	2. 0.8 c.c. " " to 105.6° F.
" "	9. 1.0 c.c. " " to 103.4° F.
" "	15. 1.5 c.c. " " to 102.8° F.
" "	18. 0.0026 grm. human tubercle bacilli, intravenously.
" "	22. 1.0 c.c. tuberculin ; reaction to 104.0° F.
" "	24. 1.5 c.c. " " to 103.8° F.
" March	4. 2.0 c.c. " " to 103.8° F.
" "	6. 2.0 c.c. " " to 103.2° F.
" "	11. 3.0 c.c. " " to 104.2° F.

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1903. March	14. 3.5 c.c. tuberculin ; reaction to 103.8° F.
" "	21. 0.0039 grm. human tubercle bacilli, intravenously.
" "	27. 1.0 c.c. tuberculin ; reaction to 104.6° F.
" "	29. 1.5 c.c. " " to 102.6° F.
" April	5. 2.0 c.c. " " to 102.8° F.
" "	8. 2.5 c.c. " " to 103.2° F.
" "	10. 3.0 c.c. " " to 102.6° F.

1903.	April	16.	3.5 c.c. tuberculin; reaction to 103.0° F.
"	"	18.	0.0052 grm. human tubercle bacilli, intravenously.
"	"	23.	0.5 c.c. tuberculin; reaction to 102.8° F.
"	"	27.	1.0 c.c. " " to 102.4° F.
"	"	30.	2.0 c.c. " " to 103.8° F.
1904.	March	29.	0.0065 grm. human tubercle bacilli, intravenously.
"	April	1.	1.0 c.c. tuberculin; reaction to 102.9° F.
"	"	4.	2.0 c.c. " " to 103.0° F.
"	"	8.	3.0 c.c. " " to 103.0° F.
"	"	11.	4.0 c.c. " " to 103.8° F.
"	"	15.	5.0 c.c. " " to 102.4° F.
"	September	15.	Killed.



FIG. 5.

Left bronchial gland.

Necropsy.—Weight 580 pounds; good condition. One of the left peribronchial glands contained two nodules, each about one-tenth of an inch in diameter. Both are distinctly calcareous and are sharply differentiated from the immediately adjacent, quite normal gland tissue.

The right lung is rather dense and leathery and contains some collapsed areas. In such a collapsed area there is found an infiltration of round cells surrounding the bronchial walls. The lymphatic nodes in the same region are greatly increased. The alveoli are œdematosus and in some places the exudate has undergone organization.

There is no evidence of caseation or of tuberculosis in the lungs or elsewhere, excepting as noted in the left peribronchial gland.

FIG. 6.—Red Heifer (16,022).

1902.	December 19.	0.1 c.c. tuberculin;	reaction.
1903.	February 2.	0.8 c.c. " "	to 105.2° F.
"	"	9. 1.0 c.c. " "	to 103.0° F.
"	"	15. 1.5 c.c. " "	to 104.4° F.

1903.	February 18.	0.0013 grm. human tubercle bacilli, intravenously.
" "	22.	1.0 c.c. tuberculin; reaction to 103.2° F.
" "	24.	1.5 c.c. " " to 104.0° F.
March	4.	2.0 c.c. " " to 105.6° F.
" "	6.	2.5 c.c. " " to 103.8° F.
" "	11.	3.0 c.c. " " to 103.2° F.
" "	14.	3.5 c.c. " " to 104.0° F.
" "	21.	0.0039 grm. human tubercle bacilli, intravenously.
" "	27.	1.0 c.c. tuberculin; reaction to 103.4° F.
" "	29.	1.5 c.c. " " to 102.8° F.
April	5.	2.0 c.c. " " to 102.6° F.
" "	8.	2.5 c.c. " " to 102.8° F.
" "	10.	3.0 c.c. " " to 103.2° F.
" "	16.	3.5 c.c. " " to 103.4° F.
" "	18.	0.0039 grm. human tubercle bacilli, intravenously.
" "	23.	0.5 c.c. tuberculin; reaction to 103.6° F.
" "	27.	1.0 c.c. " " to 102.2° F.
" "	30.	2.0 c.c. " " to 104.2° F.
1904.	March.	29. 0.0065 grm. human tubercle bacilli, intravenously.
" April	1.	1.0 c.c. tuberculin; reaction to 103.0° F.
" "	4.	2.0 c.c. " " to 103.3° F.
" "	8.	3.0 c.c. " " to 103.8° F.
" "	11.	4.0 c.c. " " to 103.1° F.
" "	15.	5.0 c.c. " " to 102.2° F.
" "	30.	Killed.



FIG. 6.

Left bronchial gland.

Necropsy.—Weight 421 pounds; unthrifty condition. The only distinct evidence of tuberculosis in this animal is a calcareous nodule the size of a pea in the left bronchial gland. The pleura and peritoneum were more or less opaque and showed films or flakes of fibrin partly or wholly organized and in some places evidently of considerable age. Guinea-pigs inoculated from the calcareous nodule in the bronchial gland became tuberculous.

It is evident that this animal had suffered with a widespread inflammation of the serous membranes from which it had practically recovered. Such a diffuse inflammation of the serous membranes of both visceral cavities occurs in tuberculosis of cattle of the type of pearl disease. But in this case there were no tubercles or evidence of tuberculosis. One must consider the possibility that in this animal there was a healed, fresh tuberculosis of the pleura and peritoneum.

THIRD GROUP.—*Six calves which received no treatment and were kept as controls for the purpose of comparison.*

FIG. 7.—Red-and-white Bull (16,014).

1902. December 19. 0.1 c.c. tuberculin; reaction.
 1903. February 2. 0.8 c.c. " " to 105.6° F
 " May 4. Died.

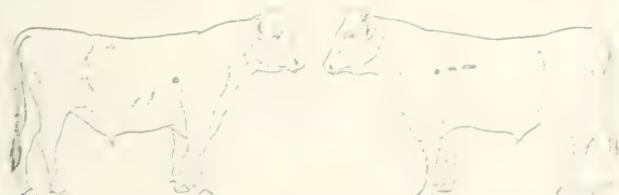


FIG. 7.
Right bronchial gland. Left bronchial gland.
Mediastinal glands.

Necropsy.—Weight 430 pounds. This bull died suddenly, apparently of acute indigestion. The only evidence of tuberculosis in this animal consisted in the presence of several caseous nodules in both bronchial and in the mediastinal lymphatic glands.

FIG. 8.—Red-and-white Heifer (16,016).

1902. December 19. 0.1 c.c. tuberculin; reaction.
 1903. February 2. 0.8 c.c. " " to 106.0° F.
 1904. September 17. Killed.



FIG. 8.
Left lung.
Mediastinal gland.

Necropsy.—Weight 578 pounds; poor condition. In the left lung at the bottom of the posterior lobe there is an area containing numerous tubercles, some of which have undergone caseation. Two similar areas are found in the tip of the lung. The surrounding lung tissue is red and dense and is infiltrated with small gray tubercles of pinhead size, some of which have cheesy centres. The posterior mediastinal gland is five inches long and two inches in diameter. This gland is filled with dense nodules, most of which have undergone caseation, and some of which contain calcareous deposits. Guinea-pigs inoculated with infiltrated lung tissue developed tuberculosis.

FIG. 9.—*Red-and-white Heifer* (16,018).

1902. December 19. 0.1 c.c. tuberculin; reaction.

1903. February 2. 0.8 c.c. " " to 106.4° F.

1904. September 19. Killed.



FIG. 9.

Right lung.

Bronchial glands.

Mediastinal glands.

Left lung.

Necropsy.—Weight 415 pounds; poor condition. Both the anterior and middle lobes of the right lung are attached to the chest wall; the anterior lobe is also attached to the pericardium. There are numerous tuberculous areas of all ages and up to one and a half inches in diameter scattered rather thickly through both lungs. Both bronchial and the mediastinal glands are enlarged and contain numerous caseous and caseocalcareous nodules.

FIG. 10.—*Red-and-white Bull* (16,020).

1902. December 19. 0.1 c.c. tuberculin; reaction.

1903. February 2. 0.8 c.c. " " to 105° F

1904. September 13. Died.



FIG. 10.

Bronchial glands.
Mediastinal glands.
Postpharyngeal glands.

Postpharyngeal glands.
Bronchial glands.

Necropsy.—Weight 480 pounds; fair condition. This bull was apparently quite healthy on the 12th of September, and was found dead in the stable the next day. It was found that there was a great collection of gas in the paunch and this appears to have been the cause of death, through interference with respiration by pressure upon the diaphragm. The evidence of tuberculosis in this animal consisted in the presence of several caseous nodules in both bronchial glands; the posterior mediastinal gland is six inches long and quite thick. The entire structure of this gland has undergone degeneration. Both postpharyngeal lymphatic glands are slightly enlarged and contain caseous areas.

It is quite possible that in this case the enlarged mediastinal lymphatic gland was a contributing cause of death through pressing upon the cesophagus and tending to interfere with the regurgitation of gas.

FIG. 11.—*Red-and-white Heifer* (16,023).

1902. December 19. 0.1 c.c. tuberculin; reaction.
1903. February 2. 0.8 c.c. " " to 106.4° F.
1904. April 30. Killed.



FIG. 11.

Postpharyngeal gland. Mediastinal glands.
Right lung. Omentum.
Right pleura. Spleen.
Bronchial glands. Liver.

Left lung, etc.

Necropsy.—Weight 313 pounds; very poor condition. This heifer was killed because it was in such bad condition that it could not live long.

The costal pleurae of both sides are coated with masses of round and flattened nodules occurring singly and in patches. The largest patch is nearly a foot in diameter and about two inches thick. Both lungs are covered with round and flattened nodules, some of which are closely attached to the pleura and some of which hang from the pleura singly and in clusters. There is a fringe around the borders of the lungs about two inches wide and very thickly studded with hard nodules, the centres of which have undergone caseation. Both lungs contain a large number of caseous areas. The bronchial and mediastinal lymphatic glands are considerably enlarged and caseous. The post-pharyngeal glands are in similar condition. The omentum, the walls of the stomachs, the abdominal walls, the spleen and liver are coated with nodular masses that are characteristic of pearl disease. There are numerous caseous areas in the substance of the liver. The bronchial lymphatic glands are enlarged to several times their natural size and are caseous.

This a case of "pearl disease" in the most advanced form and of widest distribution.

FIG. 12.—*Red-and-white Bull* (16,024).

1902. December 19. 0.1 c.c. tuberculin; reaction.

1903. February 2. 0.8 c.c. " " to 106° F.

1904. September 17. Killed.



FIG. 12.

Right lung.

Right bronchial gland.

Necropsy.—Weight 524 pounds; good condition. The right bronchial gland is somewhat enlarged and contains a calcareous

nodule. In the anterior lobe of the right lung there are numerous nodules containing pus. These are surrounded by firm, fibrous walls. The intervening lung tissue is collapsed.

The observations here recorded show a decided difference between the lot of six young cattle that were treated and the six that were not treated. Since the two lots of animals were in all respects as nearly equal as possible at the beginning of the experiment, and since they were cared for all together and in precisely the same way, excepting in respect to specific treatment, it is but fair to conclude that the six treated animals were favorably influenced by the treatment.

We believe that we have sufficient evidence to justify the statement that the treatment to which six of the animals were subjected had the effect not only of keeping in check the progress of the tuberculous process, but in causing a distinct and in some cases (Nos. 2, 3, and 6) a great retrogression of the lesions. In other words, the treatment had a distinct curative effect.

In all of the treated animals the lesions were quiescent and encapsulated. But they contained living tubercle bacilli. There is room for difference of opinion as to whether an animal or a person in which there is a tuberculous lesion containing living bacilli may be regarded as cured. If the lesion is wholly cut off by a thick fibrous wall from living tissue and if it is incapable of again becoming active, it would appear that a claim for a cure might fairly be entered. But how is one to know that activity may not be re-established? If there is resistance enough to cause the complete encapsulation of all tuberculous lesions in the body, it is evidence that a considerable degree of immunity had been developed. If the bacilli in the lesions are of such low virulence that they cannot infect an animal of the species of the one in which they are found, renewed activity is not to be expected. De Schweinitz found living tubercle bacilli in minute nodules in the lungs of a cow inoculated intravenously a year before with bacilli of human type that appear to have been incapable of producing progressive disease. Nodules

may occur from intravenous injections of dead tubercle bacilli. Fraenkel and von Behring have found in lesions of tuberculosis of cattle tubercle bacilli that are not pathogenic for cattle.

Unfortunately, in these experiments, the virulence for cattle of the tubercle bacilli in the lesions in the treated animals was not determined.

These experiments which were made on a few young cattle in the earlier stage of tuberculosis do not justify conclusions or inferences as to the probable effect of similar treatment on older and more extensively diseased animals. Experiments must be made on a larger and broader scale. We have at this time a number of animals under treatment which we hope will give us more knowledge on this subject.

But we hold that the experiments that have been made show clearly that under such treatment as was given tuberculous lesions do not extend; on the contrary, that they recede and that new implantations do not occur even upon prolonged contact with tuberculous herd mates.

TENNESSEE'S NEW EXAMINING BOARD.—Governor John I. Cox, of Tennessee, has appointed the following veterinarians to constitute the State Board of Veterinary Medical Examiners: Drs. Geo. R. White, Nashville; J. W. Scheibler, Memphis; M. Jacob, Knoxville; Geo. B. Blackman, Chattanooga.

A STATEMENT in the daily press has it that in the city of Boston, Mass., there were reported during the twelve months ending January 31 last, 327 "suspicious" cases of glanders, of which 246 were found to be glanders. During the previous year 253 "suspicious" cases were reported and 188 cases were found actually to exist.

THE REPUBLIC OF CUBA has started out, through its Agricultural Department, to investigate the diseases of the horse common on the island. Circular No. 12 from the Central Agricultural Station at Santiago de las Vegas deals with mange and bots. The frontispiece showing an old white plug horse suffering from mange in an advanced stage is very lifelike. Dr. N. S. Mayo is in charge of the Department of Animal Industry in Cuba.

THE BENEFIT OF CHANGING THE CONSTITUENTS OF THE BLOOD IN CERTAIN DISEASES BY INTRAVENOUS INJECTIONS.

BY DR. G. W. DUNPHY, LANSING, MICH.

Read before the Annual Meeting of the Michigan State V. M. A., at Lansing,
February 7, 1905.

Mr. President and Gentlemen :

In bringing this matter before you it is only with the idea that a field is opened for experimentation along certain lines, from which I believe good results can be obtained in the treatment of those diseases where the blood is charged with toxins or where the bacteria of certain diseases are carried to a considerable extent in the circulation. Reports from veterinarians in many different parts of the country indicate that good results are obtained from intravenous injections of saline solution in various amounts, from two litres in some cases to six in others.

Let us consider for a moment how these results are obtained. In the first place, in many febrile diseases water is badly needed in the tissues; in the second place, advantages are gained by dilution of the toxins and again by the increase of elimination. A special effect of loss of water in the tissues under pathologic conditions is the irritability of the nerve centres which naturally wear out the vitality of the animal. Another important factor in this method of treatment is the fact that saline solution may in this way be made a means of conveying oxygen to the blood directly as well as stimulating the action of the heart in cases where the circulation is weakened. There is little doubt in my own mind in regard to the chance of a change in the constituents of the blood preventing the toleration and probable increase of ptomaines and other toxic elements in the circulation.

We know that certain bacteria grow and flourish in a media of a particular kind, while the least change in the media will either retard the growth to a great extent or prevent any growth whatever. This being the case, may we not reasonably assume that beneficial results may be obtained from changing the con-

dition of the blood? In order to make a change of sufficient importance to dilute the toxin, it would seem to be necessary to draw a portion of the blood from the animal to avoid congestion of the circulatory organs by adding to the volume of fluid carried by the bloodvessels throughout the circulation. By withdrawing from four to six litres of blood from the circulation, you not only avoid any congestion of the heart and blood-vessels, but remove much deleterious matter that may be circulating in the blood, and, by injecting the same quantity of normal saline solution, we have a chance of changing the constituents of the blood, of diluting the toxin if such is present, and changing the media in which the bacteria are produced if any such condition exists. I might mention here a few experiments that we have tried in my practice along these lines.

On Sept. 25th, 1904, horse, which we will designate as No. 1, showed well-marked symptoms of purpura following an attack of influenza. My attention was called to the animal after the symptoms were fairly well marked. The usual abrupt swelling of the limbs had taken place, and the temperature had risen about 104° to 105° F. We decided to try the intravenous injection of normal salt solution, but concluded to first take a reasonable amount of blood, consequently we introduced a trocar and canula into the jugular vein, and, after drawing off about five litres of blood, injected six litres of normal salt solution at a temperature of about 100° F. The temperature remained about stationary for the next four hours, after which there was a gradual decline until it reached 102° —a drop of 2.5° in eighteen hours. We repeated the injection in twenty-four hours, removing about two litres of blood and injecting three litres of saline solution. Mild tonics of *nux vomica*, iron and quinine were given and rapid recovery ensued.

Horse No. 2 showed well-marked symptoms of purpura on the morning of Nov. 4th, 1904, these symptoms having developed quickly, the temperature rising from 101° to 105° during the night. This horse received the same treatment, making a certain and speedy recovery.

These two experiments cannot be considered as convincing evidence that this line of treatment will prove valuable in general practice, but I feel that there is at least a field for experimentation here that shows a possibility of good results.

To illustrate the restorative value of saline solution, we made an experiment on a case, of which I will give a brief report. The subject, a small bay mare weighing about 900 lbs., in good health and fair condition, was bled on September 12th—6 litres; on the 13th the same quantity was withdrawn, and on the 14th thirteen litres were taken. The animal had reached the point where no more blood would flow through the canula from the jugular vein, was lying down in a comatose condition, the eyes perfectly amaurotic and insensible to light and touch; pulse imperceptible and all conditions pointing to a speedy death. We then reversed the direction of the canula, and proceeded to inject normal saline solution, gradually pumping the fluid into the vein until we had given six litres. In twenty minutes after the injection the animal began to show signs of recovery; the pulsation in the submaxillary artery being perceptible to the touch and the breathing more regular. In thirty minutes from the time of injection she had raised her head and rolled up on the sternum. In one hour from the time of operation she had risen to her feet and walked a distance of 300 feet to her stall. She gradually gained strength and appetite until at the end of a week she was in normal condition.

I merely mention this case to show the apparent restorative power of the saline solution, and to emphasize the fact that there is little danger to be feared from withdrawing a limited amount of blood before making the injection, as it removes any danger of congesting the circulation, and no doubt carries away a considerable amount of deleterious matter, which must naturally accumulate in the blood as the waste material from tissue metamorphosis are not readily carried from the system, owing to the inactivity of the excretory organs in many of these cases.

I do not wish it understood that I feel warranted in drawing a definite conclusion in regard to this line of treatment, but my

experiments have been sufficiently encouraging to suggest to my fellow practitioners the advisability of trying out this method of treatment. I hope to be able to carry on these experiments to a greater extent, and trust that I may have the pleasure of comparing notes with some of my brother practitioners who are present this evening, and that our experiments along these lines may be of mutual benefit.

NEWS comes from El Reno, Okla., of the summary destruction of a jack found by the officials to be suffering from mal-adie du coit. It is stated that this one was the third jack to be ordered destroyed for the same reason this year.

THE New York State Legislature has voted down a bill to prohibit docking, or the importation of docked horses, except for temporary exhibition purposes. The *Horse World* denounces the practice of docking horses' tails as barbarous, and says it exists only by the support of the fashionable and wealthy classes.

OUR genial friend, Dr. W. T. Monsarrat, of Honolulu, H. T., is without question the most versatile veterinarian that we know of. Besides doing regular practice, occupying every official veterinary position in the city of Honolulu and territory of Hawaii, a recent copy of the *Pacific Commercial Advertiser* prints the photo of his pleasing face in the rôle and garb of captain of the Punahou Base Ball Club.

TUBERCULOSIS IN THE DAIRY HERDS OF MASSACHUSETTS.—The State Board of Health has just completed its inspection of the milk farms in Acton, Shirley, Carlisle, Billerica, Bedford, Harvard, Maynard, Westford, Concord and Chelmsford. Out of the 414 milk farms inspected in these small towns no less than 307 are under the ban. The proprietors have been told that they must carry out the board's orders if any more milk is to be sold from these places. On these 414 milk farms no less than 100 diseased cattle have been found. In many of the cases the cows are so far gone that they had to be killed at once, for the protection of the community. The showing is so appalling that some of the health officials are staggered. Only a reckless disregard of the public health could induce milk producers to allow such unhealthy and dangerous conditions. The farmers near the border, across in New Hampshire, are already frightened by the raids. They insist that they will not allow an exposure of their practices.—(*Boston Advertiser*, May 5.)

SOME PROBLEMS RELATING TO THE VALUE OF IN-AND-OUT BREEDING.

BY W. R. COOPER, D. V. M., KANSAS CITY, MO.

Read before the Missouri Valley Veterinary Association, Jan. 11-12, 1905.

The question of the practicability of mating closely related individuals or the opposite, has confronted the breeder and student of heredity for centuries, and will continue to be a problem for the succeeding centuries.

That in many instances, phenomenal animals have been produced from closely related parents, is admitted by all students. It is also an admitted fact that many phenomenal animals appear whose parents are very remotely related, or of no traceable relationship. The latter where the pedigree can be traced for eight generations are extremely rare. Of the examples of incestuous breeding the English setter bitch Countess is a remarkable example. Her paternal grandsire, Sting, being the product of four generations of full brothers and sisters mating without an out-cross. Her paternal grandam being produced by two generations of full brothers and sisters names appearing in the pedigree of Sting, her grandsire; in fact Dash I and Belle I are names appearing 42 times, and in no instance more than six generations away. In other words, there is no other name in the pedigree of Countess except as descendants of those two dogs. Stonehenge says "She was an extraordinary animal, both in appearance and at work, a prominent winner in the field trials of England in her time. Her faults were being unsteady when fresh and too keen for her work, but her pace was phenomenal."

A study of the pedigree of most classes of live stock shows a remarkable recurrence of familiar names of famous individuals in the pedigree of every exceptional animal, thus showing relationship in parentage.

A study of the natural habits of all gregarious animals show that incestuous breeding is very common among them. Taking the horse as an example, a vigorous and fleet stallion may

retain his band of mares for several years or perhaps until he is fifteen or more years of age ; driving out all the colts and retaining the fillies, also perhaps capturing a few strange mares ; he will have been practicing incestuous breeding on the younger mares of the band, *i. e.*, his daughters and granddaughters. By that time his infirmities will probably cause his defeat by a younger and more vigorous stallion, perhaps his own son. This will relieve the incestuous breeding with a strong out-cross and arrest the tendency to deterioration, but retain the intensity of blood caused by the inbreeding. Almost a parallel example of this kind is the mating of Betty Leeds and the Darley Arabian who produced Bartlett's Childers, brother to Flying Childers, the most remarkable racer produced in England up to his time, also a remarkable prepotent sire. Betty Leeds, sire Careless, was by Spanker. Her grandam was by Spanker, out of Spanker's own dam. The sister to Old Country Wench, by Lister's Snake, whose dam was by Hautboy, had as a dam a daughter of Hautboy, whose dam was by Hautboy. Here Hautboy bred to one of his own fillies, produced a filly, which bred to a son of one of his fillies, produced the dam of Squirt, by Childers (above mentioned). Squirt was the grandsire of Eclipse. It would seem that with the incestuously bred Betty Leeds as a grandam and the sister to Old Country Wench as a dam, that Squirt was incestuously enough bred. The dam of Marske, sire of Eclipse, was a daughter of Hutton's Blacklegs whose dam was by Coneyskins, by Lister's Turk, sire of Lister's Snake. (See above.) Coneyskin's dam was a daughter of Jig, by The Byerly Turk. Jig's dam was by Spanker. (See above.) Hutton's Blackleg's dam was a maternal granddaughter of Hautboy. The Blackleg mare's dam was by a grandson of Hautboy, and out of Betty Leeds, dam (above), whose dam also was by Coneyskins (above), out of a great granddaughter of Byerly Turk. Such was the inbreeding of Marske, the sire of Eclipse. Spiletta, the dam of Eclipse, was by Regulus, by Godolphin's Barb. Regulus's grandam was Squirt's dam, sister to Old Country Wench (above).

Spiletta has Hautboy only 5 removes away in her sire's pedigree and 4 removes away in her dam's pedigree.

The dam and both grandams of Old Country Wench were by Hautboy; *i. e.*, Hautboy appeared once at 2 removes and twice at 3 removes from Old Country Wench.

Old Country Wench was 3 removes from Eclipse in his sire line and 4 removes away in his dam line. Sister to Leeds, whose dam was by Spanker, bred to his own dam, is 5 removes away from his grandsire Squirt and 6 removes through his sire's (Marske's) dam, and Hautboy also appearing 4 times in other strains than by Old Country Wench at—once 5 removes, twice at 6 removes, and once at 7 removes, while Spanker only appears thrice in other lines than Sister to Leeds; once at 6 removes through his son bred to Sister to Leeds, and once at 9 removes, and once at 11 removes. It would appear that Hautboy exerted a much stronger influence on Eclipse than did Spanker, to credit Eclipse's greatness to Darley Arabian, when he only carried 16.256 of the blood of Darley, while he carried 9.256 of the blood of Spanker intensified by incestuous breeding in Betty Leeds, once on the Sister to Leeds, twice and 31.256 of the blood of Hautboy, twice through the incestuously bred Old Country Wench, lacking but 1.256 of carrying twice as much as Hautboy or Darley and through the incestuously bred O. W. C. at lesser removes than Darley, indicates that Eclipse is more Hautboy than Darley Arabian, and from cuts or engravings Eclipse resembles Hautboy in size and muscular development more than in the light fine form of the imported Arabian, being larger, heavier bodied and much stronger made than the typical Arabian of which Darley was an example.

Such was the inbreeding of Eclipse. The question then arises what manner of horse as a race horse, individual, and sire was Eclipse?

The name Eclipse was and is considered as the most masculine in type, probably second to Gladiateur as a racer, but as a sire the most prominent name in the English stud book and is gradually driving all other names of its time to the wall. Horses

strongly inbred to Eclipse through his strongest lines have always been great sires. He was a direct male descendant of the Darley Arabian, the greatest of all the oriental importations as a male line or sire producing strain.

It must be remembered that all stock is divided into male, or sire lines; and female, dam or running lines, and that because an animal is a male does not necessarily signify that he will be of a masculine type or that a female must be effeminate in type, it often being the reverse, hence such effeminate males will not produce strong males unless mated to very masculine females in type. This condition is often very noticeable in the human species.

The English runner or thoroughbred is a very good animal to study as an example of the effect of in-and-out breeding, originating during the reign of Charles and James II by importation of Arab, Turkish and Barbary horses, including 100 mares and 25 stallions. There are at present represented but about 42 mares and 10 or 12 stallions in the record of the classic winners, of which 9 mares and 3 stallions are considered necessary in a pedigree to get a winner. Out of the mares represented as classic winners, *i. e.*, whose blood was the strongest in the individual, Tregonwell's Natural Barb mare stands first with 75 classic winners, 14 Derbies, 16 Oaks, 12 St. Ledgers and 33 times in the 1000 or 2000 Guineas.

Burton's Barb mare is second with 59 classic races to the credit of her descendants; 9 Derbies, 16 Oaks, 19 St. Ledgers, 15 times in 1000 and 2000 Guineas.

The dam of the Two True Blues is third with 61 classic winners; 15 Derbies, 14 Oaks, 13 St. Ledgers, and 19 1000 and 2000 Guineas.

The three families above named have almost as many classic winners to their credit as all the rest of the 42 found as classic winners.

The first 5 in the list are classed as dam, or running lines, *i. e.*, produce great sprinters or great brood mares, with the exception of No. 3, which is regarded as equally good as male or

female producing lines and is probably the most useful of all the families in the stud book.

The male lines stand out relatively as Nos. 3, 8, 11, 12 and 14 in the record of classic wins and needs to be crossed on the first 5 of the list to produce phenomenal results, especially if the first 5 lines or any part of them have been closely inbred to each other. The other line which will allow inbreeding to itself alone is the line responsible for Eclipse of No. 12, and his best produce were from the first 5 lines mentioned. These numbers refer to mares who were either feminine or masculine in their type.

Of the stallions regarded as indispensable at the present time are Darley Arabian, a strong masculine or sire line to which Eclipse belongs. The Byerly Turk and Godolphin's Barb, both prominent as dam lines or more effeminate than Darley Arabian. They were imported, Byerly Turk 1690, Darley Arabian 1700, and Godolphin's Barb 1704, Eclipse was foaled 1764. The Byerly Turk traces to the present time through Herod as a producing line. Herod was foaled 1758. The Godolphin's Barb was perpetuated by Matchem, foaled 1748.

Herod was a great grandson of Byerly Turk. His dam was by grandson of Darley Arabian through Bartlett's Childers, great grandsire of Eclipse, carrying nearly the same crosses of Hautboy that Eclipse had, through his paternal grandam.

Matchem was a grandson of Godolphin's Barb. His paternal grandam was a granddaughter of the dam of Betty Leeds (Childers' dam). His dam was a great granddaughter of Byerly Turk and a mare by Spanker. Other lines were strongly bred in the 5 running or female lines.

A close study of the blood of the three named horses, Eclipse, Herod and Matchem, the three names that dominated the pedigree of the winners of the English turf of their time and whose blood is still potent, shows, in each of the three, the Sister to Leeds or her daughter Betty Leeds, the incestuously bred Spanker mare, while Eclipse gets the sister to Old Country Wench, a remarkably masculine strain on both sides of his ped-

igree, by his sire at the third remove, and his dam at the fourth, also Clumsy, brother to the grandam of Old Country Wench through his sire.

By a short study of the pedigree of Stockwell, the most successful sire of modern times and considered a necessity in a first class pedigree at the present time, one finds that he traces 14 times to Eclipse, within 7 removes, through Whalebone and Whisker, brothers, and their sister Web; descending through Sir Hercules, Bird Catcher and Glencoe, backed up by Wanderer; inbred to the 3, Eclipse, Herod and Matchem and the No. 3 family or dam of the Two True Blues.

Isonomy, dam by Stockwell, another phenomenal sire of masculine type, has Bird Catcher at 3 and 4 removes. His (Bird Catcher's) sire, Sir Hercules, 4 times at 4 and 5 removes.

Salvator is a great grandson of Stockwell, both of which trace strongly to Eclipse, whom Salvator resembles very much.

A short study of the origin of the American trotting horse reveals very similar conditions and results. Beginning with Messenger, foaled 1780, imported here about 1788, a direct descendant in the male line from the Darley Arabian through Childers, whose exploits sound even fabulous at the present time, whose (Childers') dam was the incestuously bred Betty Leeds. Godolphin's Barb appears in Messenger's pedigree 3 times through Matchem, and Regulus, sire of dam of Eclipse. Messenger was a thoroughbred, a descendant of a line of the best winners on the English turf. He sired the dam of Am. Eclipse, the most successful racer of his day. His strongest lines were those that were capable of learning to trot or to make good roadsters. Abdallah, through his son Mambrino; and Mambrino Chief, by Mambrino Paymaster, by Mambrino.

A question has arisen concerning Sampson, the great grandsire of Messenger, he being a black, very large and coarse. Though able to beat all the crack racers of his day, no black horse of that style could be traced in his pedigree, which has led many to believe that Sampson was sired by a coach horse. The coarse build has descended through Messenger and through

Abdallah, whose dam was undoubtedly by a son or grandson of Messenger, Abdallah being a blood bay with coarse head, ears, and lips, a rat tail and a very positive disposition. His feet and legs were remarkably fine and strong and his gait at the trot very reaching and enduring. His best sons, *i.e.* (Hambletonian's) dam was by old Bellfounder, a Norfolk trotter. The dam known as the Chas. Kent mare was a daughter of Old One Eye, whose dam was Old Silver Tail, by a son of Messenger. One Eye was sired by Bishop's Hambletonian, inbred son of Messenger. Most of the above Messenger's descendants had a reputation of being of bad temper but remarkably enduring as roadsters, Old Silver Tail frequently carrying her owner, Mr. John Seely, of Orange Co., to Albany, 100 miles, in a day under saddle and once carried the owner and son, a lad of 10 years, home from New York, 75 miles, in a day. Such was the inbred maternal line of Hambletonian, son of Abdallah. At the present time Hambletonian blood is the controlling male line of about 95 per cent. of the 2,300 trotters. He sired over 1300 colts, many of which were kept for service, and it is said never sired a sorrel or chestnut colt. Of his sons, about 4 are considered necessarily the predominating element in a high-class pedigree. His best crosses have been with Mambrino Chief mares or descendants through Mambrino Patchen and Henry Clay mares. Hambletonian lines will not bear inbreeding upon themselves. Other lines which mix well with Hambletonian are American Star with Messenger on the dam's side; Clays and Patchens, Messenger on the dam's side; Royal George lines, also a Messenger, Bashaw's, Messenger on dam's side; Ethan Allen, Messenger on dam's side; all of which ancestral blood did not trot until Messenger blood became a part of the pedigree. The combination of blood found in American trotters indicates that Messenger blood would bear strong and even incestuous inbreeding to itself provided it came through Abdallah as a sire line or Mambrino as a dam line, backed up by the minor strains previously mentioned. Many of the strains I have mentioned are not authentically or abso-

lutely proven, but the measurements and other characteristics stamp the individuals so unmistakably that there is very little doubt, and in each instance descendants of Messenger stood for service at the time and place the colts were foaled, while in some instances where the pedigree is officially credited characteristics indicate conditions otherwise. As of Sampson, the question has arisen regarding the sire of Mambrino Patchen in a similar manner. Mambrino Chief, his recorded sire, and Gaines' Denmark were both in the same stable when the dam of Mambrino Patchen was sent for service, her former foal (by Mambrino Chief), Lady Thorn, was a bay not like Mambrino Patchen in any particular, who was black. Mambrino Chief had never sired a black colt until then. Gaines' Denmark was black and Mambrino Patchen was black and in form and gait resembled Gaines' Denmark much more than he did Mambrino Chief. Gaines' Denmark was a favorite of the colored groom, Mambrino Chief was not. The paternity of Mambrino Patchen has thus been raised by one of Kentucky's most prominent breeders recently.

The history of turf performances and pedigrees indicate that all horses are somewhat inbred, some incestuously, others remotely, but that the inbreeding must be from two to four or five removes away to cause the best results and should be on the dam's side with a cross of the same blood in the dam of the sire to nick well in the offspring, or if the dam being of a strong masculine strain and the sire of a feminine strain the opposite, or, in short, outbred sires to inbred dams, and that but approximately, two horses or families in the turf history will stand incestuous inbreeding to themselves and not suffer from weakened constitution as sires or become effeminate, viz.: English Eclipse and Messenger, both direct male descendants of Darley Arabian and both intensely masculine and vigorous, even their daughters having a masculine disposition. Eclipse, the greatest name in the English stud book; Messenger, the greatest horse from point of value to the public ever landed on American soil. An anecdote of Messenger which records that when imported with

three others, all of which had to be supported from the ship to the dock on account of exhaustion incident to a rough voyage, Messenger raced down the gang plank with a groom on each side who were unable to check him until he had run nearly a quarter of a mile, is sufficient indication of his vigor and courage.

DR. J. R. MITCHELL, Evansville, Ind., recommends the swinging stall partition to cure horses of kicking in the stable.

DR. WILLIAM DIMOND, of Newark, N. J., at one time an Inspector of the Bureau of Animal Industry, is now warden of the Essex County Prison at Newark.

A RECENT LAW of Pennsylvania is that requiring veterinary surgeons to report all cases of contagious diseases in animals to the State Live Stock Sanitary Board.

AT the annual meeting of the Colorado Kennel Club, held May 6th, Dr. Mark White, Jr. (U. P., '04), of Denver, was elected to act as veterinarian at the coming dog show.

ONE of the handsomest publications which comes to the REVIEW office is the *Quarterly Bulletin of the San Francisco Veterinary College*, the number for March being a fine example of high art in printing.

BESIDES his many duties in his profession Dr. T. Earle Budd, of Orange, N. J., finds time to give attention to the important duties of a member of the Board of Education of his city. Dr. John B. Hopper serves the public in a similar capacity at Ridgewood, N. J.

THE report of the Government Entomologist of the Cape of Good Hope, for the half-year ended June 30, 1904, is a very neat document containing much valuable information concerning the African diseases of live stock. We have also received some special reports from the same source, of interest to veterinarians.

EXAMINATION FOR LICENSE TO PRACTICE IN NEW JERSEY.—The New Jersey State Board of Veterinary Medical Examiners will meet at the State House, Trenton, N. J., June 27th and 28th for the examination of veterinarians for license to practice veterinary medicine, surgery and dentistry in that State. Applications may now be made to President William Herbert Lowe in writing and mailed to the office of the Board, 169 Paterson Street, Paterson, N. J.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

STRONGYLUS PARADOXUS OR LUNG WORM IN SWINE.*

By J. HARVEY SLATER, V. S., Richmond, Mo.

September 6th, 1904, I was called to see a herd of sick hogs (Chester White). The owner stated that the neighbors had lost nearly all their hogs from apparently the same disease and supposed it was cholera. Mr. Barker (my client), being a close observer, thought it different from any case of cholera he had ever seen; therefore he called me to investigate the malady.

The following symptoms were evident: spasmodic cough, after a few days' refusal of food, elevation of temperature, dyspnoea, anæmia, animal gaunt very suddenly, great weakness especially of hind parts, frequent discolorization of the skin, especially of the ears and over the ventral surface.

Post-mortem examination revealed pneumonia due to the presence of a worm in the lungs, which proved to be *Strongylus paradoxus*. I sent a sample of these worms to Dr. B. F. Kaupp, of Kansas City, who is recognized as authority on parasitology. He verified my diagnosis.

I shall quote freely from Mehlis, Law, and others in giving a description of this little ravager which bears so pretentious a name. It is a delicate filiform worm, white or brownish. Mouth terminal, round, with six papillæ. Male $\frac{1}{2}$ to $\frac{3}{4}$ inch; female 1 to $1\frac{1}{4}$ inch long; caudal bursa of male deeply bilobed, each lobe supported by five rays. Two long, delicate spicula. Tail of female curved with sharp point; vulva on a pre-oval tubercle. Oviparous or ovoviviparous. Ova elliptical with contained embryo folded several times.

In fatal cases of young pigs I found balls of worms coated with mucus and pus in the bronchia; in older ones they are found in the air sacules. The development of the parasite has not been traced but is probably similar to that of the *Strongylus filaria* and is favored by similar local conditions, allowance being made for the fact that the ravages of the worm are confined to swine only.

Symptoms are often obscure; unthriftiness, lack of condi-

* Read before the Missouri Valley Veterinary Association, Jan. 11-12, 1905.

tion, anaemia and emaciation are shown especially in young pigs and if associated with a paroxysmal cough—hard at first and later moist and rattling or even suffocating—and if this shows in a large proportion of the herd independently of any change of weather, damp bed, or other cause, there is a strong presumption of lung worms. This worm was found more than a hundred years ago in different parts of Southern Europe. In the beginning of the nineteenth century Bellingham and others found it in the abattoirs of Paris and Dublin. Law has frequently found them in unthrifty pigs and shoats in Central New York. However, it is rare in this section of the country. Several authors claim that in the majority of cases the disease subsides and the patient recovers so that its true nature is never discovered. Death may be from suffocation or from progressive emaciation or marasmus. The lesions are essentially the same as those of verminous bronchitis in sheep, a number of parasites determining the extent and violence of the morbid process.

In the outbreak I have chronicled here the disease proved fatal to 80 per cent. of the herd. Duration being from a few days to four or five weeks. Among the farmers and fancy hog breeders in the vicinity of my client the average loss in each herd was about 85 per cent. If no one in the infected neighborhood had consulted a veterinarian the heavy loss sustained would have been attributed to cholera, and the real mischief-maker, *Strongylus paradoxus*, would thus have escaped suspicion.

I recommended dipping, change of pig pen and range, also careful avoidance of pond, running or well water which might have become contaminated by the affected herd; or better still to boil all water before it was supplied to the hogs. Such measures are very necessary in the case of young pigs, which almost always furnish fatal cases; or if the sows are affected the food should be moderately salted and the pigs should be removed from the sow and all mature swine as soon as they are weaned. After taking precautionary measures to prevent the spread of the disease to the unaffected herd I turned my attention to the sick hogs. I was ambitious to save them if possible. Black recommends intratracheal injections of benzine or oil turpentine. Owing to the inaccessibility of the trachea in the pig I administered oil turpentine and oil eucalyptus by inhalation. I secured a pig by means of a crate and over its head I slipped a noose-bag which was connected by means of a rubber hose with a large tin vessel shaped like an inverted funnel.

The vessel was filled with medicated water and placed upon a gasoline stove. Each pig was steamed five minutes, then dipped and turned into an orchard 150 yards from the regular feed lot. The steaming was continued four consecutive days, but the method was unsatisfactory for the reason that too much time was consumed in medicating a large herd, and, besides, it seemed necessary to put more medicine in the steaming can each time after steaming a pig, as the first pig seemed to get the benefit of all the medicine. There is no doubt but that this treatment was beneficial, as far as it was carried. We lacked proper apparatus to carry out treatment as I wished, thus I can report only partial success. With suitable facilities the steaming process undoubtedly would be entirely satisfactory.

[An interesting discussion followed, which was participated in by Drs. Brown, Goode, Kaupp, Norton and Stewart. Dr. Goode stated that he had treated a bunch of calves by placing them in a closed building and burning alcohol and sulphur, remaining in the building as long as possible, then opening the doors. This was repeated several times with curative effect.]

A TUBERCULAR CASE.*

By L. U. SHIPLEY, V. S., Sheldon, Iowa.

On July 15, 1904, I was requested to examine a Shorthorn cow, property of a stockman of Inwood, Iowa. The history as given by the owner was that this cow had been apparently in the best of health and had given birth to a fine calf in April and had given a plentiful flow of milk, much more than the calf could take care of, but for about a month previous to my visit had not acted as lively as usual, although her appetite and digestion were perfect. She showed lack of coördination of the posterior extremities, especially when assuming a standing position after being down. After moving off a few steps, to all appearance the movements were normal. Pulse and temperature were normal. Auscultation and percussion revealed nothing abnormal. Without making any definite diagnosis, prescribed a tonic. On Oct. 3, 1904, or 78 days after my first visit, was again called to see this cow. Found her down, unable to rise, the owner stating that she had been in this condition for about one week. When in a natural position upon the sternum she ate and drank heartily, but if she got down upon her side she evinced much distress and moaned until helped back upon the sternum. Found temperature and pulse normal, and as before

* Presented to the Meeting of the Iowa State V. M. A., Jan. 25-26, 1905.

percussion and auscultation revealed nothing abnormal, having previously expressed the belief of some tubercular lesion. It was the owner's intention to have the tuberculin test applied, but not being prepared to do so and the apparent indications of a fatal termination caused me to advise destruction and a post-mortem, which was consented to. The village butcher was sent for, who did the killing and removed the hide, and who volunteered the information that the carcass was a perfectly healthy one; in fact, it was a fatter looking beef than one often sees upon the average country butcher block.

The above information and appearance caused the owner to regret destruction, remarking that he would bet we could not find anything. After removing the digestive organs found them in a normal condition excepting a few slight tubercular nodules in the liver; kidneys and genital organs normal; then proceeded to the thoracic organs; found lungs and heart normal, excepting a few milliary tubercles in the superior border of the right lung, but found several large tubercular nodules in the anterior mediastinum and thymus glands, from the size of a hen's egg to as large as a base ball, but irregular and nodulated. After removing the contents of the thorax, observed a soft swelling protruding from between the articulating ends of the right fifth and sixth ribs. Upon incision a large quantity of creamy pus escaped. Further inspection showed this abscess extended between the transverse processes and articular facets through the posterior notch of the fifth vertebra into the spinal foramen. The character of this irregular fistulous tract and its contents showed its existence for a considerable length of time and that it was without doubt the original tubercular lesion. The history and symptoms of this case also proved this lesion had existed for at least three months, and no doubt the pressure of the pus upon the spinal cord when lying upon the side caused the distress, which was relieved when in an upright position and the pressure was downward or away from the cord.

AMPUTATION OF THE PENIS.*

By C. E. STEWART, Chariton, Iowa.

About one year ago I was called to see a ten-year-old Hambletonian gelding affected with phimosis, and the penis greatly swollen and painful to the touch, but animal was in good health in other ways.

* Presented to the Meeting of the Iowa State V. M. A., Jan. 25-26, 1905.

The ordinary treatment was used to reduce the swelling, which slowly disappeared, but the animal was never able to retract his penis. However, he was used a little on a dray, but was too obscene to be driven only after night.

About three months ago the organ was again injured, supposed to be due to another horse stepping on it, as it bore the mark of a toe-calk, and as the animal was not of much value he was turned out in a pasture to struggle for himself and the penis swelled to enormous size and was very painful, followed by a gangrenous condition, with considerable sloughing and such rapid emaciation of the animal that it was seen he would survive only a few days, and the animal was brought to me for treatment. I advised the owner that the only thing to do was to amputate the organ, which he readily consented to, saying he had gotten tired of seeing it and he said he had thought for a long time that he was troubled with an over-production of penis.

Operation.—The animal was cast and tied as we would for castrating a ridgling, the penis was withdrawn as far as possible and the parts thoroughly washed with a solution of creolin, 1 to 100.

A catheter was then passed and a stitch taken in the distal end of the penis and tied to the catheter to prevent it from coming out during the operation. An incision was then made with the scalpel through the skin and about three-fourths of the circumference of the penis and about four inches above the end of the prepuce, then other incisions were made in a transverse manner until the dorsal artery was severed, which was then twisted with haemostatic forceps. The urethra was then dissected out and severed about an inch and a half from the stump, and the mass that was removed weighed five pounds.

By severing the urethra about an inch and a half from the stump makes the stump very similar to the natural apex of the penis, aside from the fact that the meatus urinarius does not project into the natural deep fossa at the apex of the penis.

The animal did not resist the operation very much, and when released got up and went to eating. After-treatment consisted of flushing the sheath once a day for a few days with a solution of creolin, 1 to 150, and allowing the animal to run at pasture.

Animal did not lose more than three gills of blood, and but little swelling followed, and he gained in flesh every day after the operation until he was well, which was but a short time.

By this way of operating there is the least possible surface to heal, and I am inclined to the opinion that we are prone to consider this a far more difficult and dangerous operation than we should.

A PELVIC HERNIA WITH POSTERIOR DISPLACEMENT OF THE CÆCUM.*

By L. U. SHIPLEY, V. S., Sheldon, Iowa.

Was called to attend a small gray mare with the following history and symptoms: Had been bred to a heavy draft stallion, two or three days previous and immediately turned out to pasture. The day following she was found lying down with symptoms of abdominal pains. She was taken up and placed in the barn and as her condition did not improve I was called. Found her lying down on her side. When made to arise would immediately lie down again, but did not seem to suffer acute pain. Pulse 72, strong and vibrating, temperature normal; auscultation of abdomen denoted the usual borborigmi. Then resorted to rectal and vaginal exploration. After passing the hand through the vulva, felt a tense body superiorly, which I thought was the rectum filled with faecal matter, but when the hand was inserted into the rectum was surprised to find it empty, this tense body inferior to it. Then with one hand per rectum and the other per vagina made a careful manipulation. From the tense rebounding character of the body concluded that I had an abscess to deal with, so procured a trocar and canula and carefully inserting per rectum punctured the body, and instead of pus or serum, the contents of the cæcum flowed out through the canula. This gave immediate relief and the mare resumed standing position and began eating, and further exploration that I was able to make led me to believe that the cæcum had returned into the abdominal cavity. Had the animal placed in a narrow stall, elevating the posterior extremities as much as possible with instructions to keep her in this position for some days, but two days later was called again and found her in the same condition as upon the first arrival. Repeating the puncturing operation seemed to give temporary relief as before, but the condition soon recurred and as the animal was of little value was allowed to die with no further attention, not even giving me an opportunity for P. M. My theory is that the broad ligament must have been lacerated by coition.

* Presented to the Meeting of the Iowa State V. M. A., Jan. 25-26, 1905.

A RADICAL OPERATION FOR STRANGULATED SCROTAL HERNIA.*

By L. U. SHIPLEY, V. S., Sheldon, Iowa.

In August of 1903, during my temporary absence, Dr. H. Shipley was called to treat an Irish hunter stallion which had been driven in from the country about five miles and upon arrival showed colicky pains. Was given the ordinary colic treatment, which appeared to give some relief for a short time. Upon my arrival home visited the case and found him in considerable pain, but exhibiting no other symptoms other than those ordinarily observed in a case of spasmodic colic, but after some reflection suspected inguinal or scrotal hernia and examination verified my suspicion. Found that the intestine was not only in the inguinal canal, but the right scrotal sac was considerably distended with intestine. I advised the owner of the condition and that a radical operation was necessary and that immediately. The owner remarked that I would have to castrate to operate successfully and that he would as soon have the horse die as have him castrated. As "necessity is the father of invention," after some reflection I informed the owner that I thought that I could operate successfully without castrating, or at least try, as the case would surely terminate fatally without an operation, so consent was given. After procuring Dr. Henry Shipley to assist, the horse was cast and properly secured upon the back, with the hind limbs drawn well back and spread in a similar manner as for cryptorchid castration. Rectal taxis was first tried without success. We then proceeded with an operation as follows: The scrotal and inguinal regions were disinfected with a creolin solution. The testicle was grasped, tensing the cord, and with the small hook blade of a Zigler castrating knife, an incision was made near the inguinal ring downward and parallel with the spermatic cord about five inches long through the skin and peritoneal tunic, being careful to avoid injury to the intestines. The hand being well disinfected was passed into the incision and the intestines carefully pressed back through the inguinal ring. The wound was then cleansed with a creolin solution and packed with absorbent cotton and two or three stitches applied in the skin to retain the packing in position. The horse was then released and assumed a standing position and seemed to be relieved of pain. He was placed in a box-stall and given a stimulant. The next morning the temperature was 104 and some pain present. Drank

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water freely, but refused food. Was given febrifuge and tonic treatment. On the second day temperature was 102 and the bowels moved for the first time. The faeces were coated with mucus. He ate green grass with some relish. On the morning of the first day the stitches were removed and part of the cotton taken out, leaving a small portion up next the inguinal ring. The latter was removed on the second day. The wound was left open and treated as a simple wound. Treatment consisted of washing with creolin solution and dressing with dusting powder; there was some suppuration for a few days, but the wound healed rapidly. The case made good recovery. There was never any extensive swelling of the testicle. It was carried drawn up a little higher than its mate for a time, but soon was carried in a normal position. This horse has been in stud service throughout the season of 1904.

CHRONIC CRURAL PARALYSIS FOLLOWING AZOTURIA.*

By JOHN THOMPSON, Iowa.

It has been my lot every year for the past eight or nine years to meet with a few of the above cases, and while they are without doubt familiar to nearly every practitioner, it has never been my good fortune to learn as to experience and views of others in the matter.

With various methods of treatment I have employed so far, all cases treated, with three receiving no treatment, have terminated alike—an apparent spontaneous recovery at the end of from seven to ten months following time of attack, and in no case has my interference seemed able to shorten the period.

When the time for recovery has arrived the muscle structure apparently develops fully, or nearly so, within about six weeks. The improvement, though of course gradual, is rapid and recovery complete.

Among the agents I have used are such irritants as tinct. iodine, strong soda chloride solution, turpentine, etc., injected intramuscularly, or rather in and around muscle sheath, over affected parts, at intervals of a couple of weeks. Slight tumefaction would follow such injections, but within a few days the region would resume its characteristic hollow appearance, with limb as useless as ever. Deep puncture firing, using thermo-cautery, along course of atrophied muscles, repeated every month, has given the same results.

* Read before the Iowa State V. M. A., Jan. 25-26, 1905.

LUXATIO SUPRA COTYLOIDEA.

By E. M. WESTON, G. M. V. C., Launceston, Tasmania.

The accompanying photos may prove of interest to you, as they illustrate a somewhat unusual condition, *i. e.*, luxation of the femur. The cow was very restless and got a bit out of focus, which renders one of the photos a trifle misty, while I also happened to snap the camera just when her tail was curling over her back. The second photo shows her in motion, when the upward displacement of the trochantor major is most marked.

T. M. in normal position.

Trochantor Major displaced upwards.



Cow in motion. Trochantor Major nearly on a level with point of hip.

The history of the case is as follows: The cow had calved away in the bush and was being brought home when she fell into a deep ditch, from which she was extracted only after considerable trouble. When put on her feet she was seen to be very lame, and on endeavoring to turn fell heavily. She was taken home, placed in a sling, and a day or two after I was sent for. On arrival I found the trochantor major of the femur very prominent on the affected side, but the joint could be freely flexed and extended, and weight placed on the limb, which did

not appear to be shortened. My diagnosis was strain and rupture of the deep adductors and stretching of ligaments of the articulation, but I did not think the head of the femur had left the acetabular cavity. I applied a good stiff pitch plaster over the region of the joint, the cow remained in the slings eating, and milking well for about two months. When let out slight shortening of the leg, with upward displacement of the head of the femur was evident. The forward stride was shortened, and the leg swung outwards as in human patients recovering from a paralytic stroke. I have in my employ an old partially paralyzed sailor, and the resemblance between his gait and that of the cow was so conspicuous as to immediately attract the attention of the children on the farm. For some time after being let out of the slings the cow required a lift when getting up, but now she gets up and down herself, and hobbles about without much trouble. In anatomical language the luxation would be classified as "Luxatio Supra Cotyloidea."

A CURIOUS CASE OF BROKEN BACK.

By E. A. WESTON, G. M. V. C., Launceston, Tasmania.

The subject was an old grey trotting mare, who had staked her hoof. Upon examining it I decided to throw and chloroform her before operating. Accordingly she was taken onto a level patch of grass and thrown with the neck-collar and sidelines. I had plenty of strength, and she went down easily without trouble, coming first onto her haunches, and then rolling over onto her side. She groaned, however, as though in pain, but took the chloroform well and lay quietly during the operation. Upon coming round she proved unable to either sit up or stand, and I was reluctantly compelled to tell her owner that I feared she had broken her back. He could not credit my statement, as he had been present during the throwing; so to satisfy him I rigged a triangle, and sent away for the slings. When we slung her she was quite unable to use the hind-quarters, and subsequently she was let down and shot. Post-mortem revealed melanosis (which I had previously noticed round the anus) of the sublumbar prepectoral, bronchial, and small glands lying under the longissimus dorsi; extensive rupture of the diaphragm, probably due to lying in the slings with the bowels full of grass and fracture of the tenth dorsal vertebra. The spine of this bone was intact, but the body and pillars were shattered into fifteen separate pieces, which I have vainly endeavored to put together. Unfortunately it was boiled previous to examination,

but there is no doubt that the cancellated tissue was affected with melanosis, only the outside shell being left. When the spine was bent in throwing, the bone was crushed between the two adjoining vertebrae like an egg between two boards. This is proved by the weight, the broken bone weighing 2 ounces 5 drachms, and a healthy adjoining vertebra 4 ounces. The cancellated tissue which remains is softened, and open in structure, having evidently been the seat of a rarefying osteitis. Melanotic growths are usually classified as sarcomata, but a sarcoma is stated by pathologists to have no lymphatics, and to be spread by the bloodvessels. Now in this case the secondary infection seemed to be confined to the lymphatic glands, which would probably be infected from the lymphatic vessels, so that the growth approximated more nearly to the carcinomata in that respect.

A CASE OF TETANUS AS A SEQUEL TO PARTURITION.*

By L. U. SHIPLEY, V. S., Sheldon, Iowa.

On April 30, 1904, was called to attend a mare that had foaled about one week or ten days previous. Found a well-marked case of tetanus with tonic spasms of all the muscles, but this mare was able to masticate and continued so throughout the course of the disease, but when she laid down had to be helped up. As the disease was so well marked did not consider there would be any benefit derived from antitetanic serum, so advised isolation and good care. The colt was left with her and suckled and apparently obtained sufficient nourishment. The case made a good recovery and the foal remained healthy. The two interesting features of this case were, first, the probable source of infection per the genital tract, and, second, the non-transmissibility of the disease to the foal.

DR. JOSEPH HUGHES, Chicago, Ill., spent the last week of April in Nashville, Tenn., attending the race meeting at Cumberland Park and visiting professional friends in that section of the South.

DR. JOHN B. HOPPER, of Ridgewood, N. J., is a man who puts his scientific knowledge to serve practical ends. He is the proprietor of the Ridgewood Veterinary Forge, where horseshoeing, pathological or otherwise, is scientifically done.

* Presented to the Meeting of the Iowa State V. M. A., Jan. 25-26, 1905.

ARMY VETERINARY DEPARTMENT.

EPIZOÖTIC LYMPHANGITIS.

There has just been published a "Treatise on Epizoötic Lymphangitis," by Captain W. A. Pallin, F. R. C. V. S., of the Veterinary Department, British Army,* which comes in good time and renders the first comprehensive account of this recently recognized disease. While primarily intended for the veterinary officers of the English Army and Civil Department, it is none the less interesting, instructive and valuable for American veterinarians, particularly those of the Army. As the subject is of such importance we shall review the book more fully, invite attention to our own experiences, and make some suggestions which will enhance the international value of the book in its next edition.

In the "*literature of the disease*" the author records fully the English contributions, but only those of Nocard and Leclainche in French, and that of Tokishige, Japan. Yet, Mosselman and Liénaux in their "Manuel de Microbiologie Vétérinaire," give a very accurate description of the "cryptococcus of Rivolta," with other valuable notes, and "Joly," in "Les Maladies du Cheval de troupe," devotes a whole chapter to this disease, giving entertainingly its history, cause, symptoms, diagnosis, differential diagnosis, treatment, and the statistics of the disease in the French army since 1887. He mentions as early writers such known names as Tixier and Delamotte, Chénier, Jacoulet and Froissard, Wiart, Auiclet, Barrier and others, and altogether it is apparent that the early literature on this disease must be found in France. As to other countries there is no doubt that the Italian and Russian veterinarians have extensively written on the disease, although their accounts are only known to me from references and reports in German veterinary journals. The Germans themselves have no experience with the disease. Finally several of our American veterinarians have published articles on the disease as observed in the Philippine Islands, to which we shall allude later on. In a monograph of a disease like this the "*literature*" is an important part, not because it records names of authors, but because it greatly helps to comprehend its history, geographical distribution, variety of symptoms observed, experiments conducted, different methods of treatment applied, mortality recorded, etc.

* William R. Jenkins, 851 Sixth Ave., New York. Price, \$1.25.

The "*nature of the disease*" is thus defined by the author : "Epizoötic lymphangitis is a virulent inoculable disease, characterized by suppuration of the superficial and subcutaneous lymphatic vessels, due to the presence of a specific organism." From our observation in the Philippines we would define it as "an infectious disease of solipeds, caused by the cryptococcus of Rivolta, characterized by the formation of specific ulcers of the skin, more rarely of the mucous membranes, and complicated in severe cases by suppurative inflammation of the superficial lymphatic vessels." There are ample reasons for this wording of the definition. The spread of the disease is ordinarily maintained by infection with grooming brushes, etc., its *primary symptom surely is the formation of ulcers*, lymphangitis rarely develops if the case is promptly taken under treatment, and suppuration of lymphatic vessels takes place only in exceptionally severe cases. At least this was our experience in the Philippines. It is also proper that the specific organism should be named irrespective of whether future researches will confirm it to be *saccharomyces* or *cryptococcus*.

The "*history and geographical distribution*" of the disease are most interesting and well compiled, and give a vivid picture of the struggles in observation and investigation during two decades which were needed to have the disease finally recognized as specific. Of this the author says : "The disease has from time immemorial been invariably confounded with glanders-farcy and ulcerative lymphangitis, in whatever part of the world it has appeared, and even with the assistance of mallein and modern science, veterinarians of nearly every nationality still continue to make the same mistakes." There is little doubt that this is true, but the reasons for confounding the true farcy and this pseudo-farcy, as the disease has been formerly called, are near at hand and amply explained by its newness and scanty literature. As far as American veterinarians in the Philippines were concerned they were quick to recognize the specific nature of the disease, and myself and a few others have only blundered as regards the correct name, which is by no means a happy choice. The author seems to believe that when glanders-farcy and epizoötic lymphangitis are co-existing, the danger of confounding the two diseases is great (page 25), but our experience in the Philippines leads us to think that this very co-existence of the two diseases saved us from error and greatly helped us to differentiate the two.

A most interesting retrospect is opened up before us if we scan the short history of epizoötic lymphangitis and then let it

glide into the remote history of glanders. Both the author of the treatise and our French army colleague Joly, come to the conclusion that the prolonged and heated differences of opinion about the malign or benign nature of glanders-farcy of the early French veterinary authors can now be explained by the presence of epizoötic lymphangitis in France as early as 1860 and before. To the student of the history of glanders, outside of France, these fierce combats of our historic French confrères were always fascinating, but unexplainable. The older German veterinarians, for instance, who only knew the true farcy, never ceased to wonder how their French colleagues could have invented such terms as "benign farcy, curable farcy, river-farcy," etc. We can now see that these few oftentimes were not and could not have been ripe for a finer differential diagnosis, and it needed not only the advent of the microscope but the advanced knowledge of bacteriology of our last decade to finally distinguish these two diseases one from the other.

Most of us will be surprised to learn that the disease extends over many widely scattered countries. It has longest been known in Algiers, France and Italy, but is now known to exist in Egypt, Turkey, Russia, Sweden, and recently imported into England and Ireland. It has long existed in Japan, also presumably long in India, Java and Bali, to which we must now add the Philippines. It is unknown in the United States, Germany, Austria. That a disease of such wide geographical distribution is threatening to those countries that do not as yet harbor it is evident, and we shall be lucky if we can keep this annoying newcomer from our shores.

The "*bacteriology*" of the disease, including the different methods of staining and the developing of cultures, constitutes a highly instructive chapter, brought together with diligence and apparent practical acquaintance with the subjects treated. These chapters must be studied, and while perhaps our army colleagues at present stationed in the Philippines have had more time and better opportunities to study the cryptococcus of Rivolta than we had during the war-time, yet I feel certain that the information given in the treatise will be a welcome guide to them.

The "*incubative period*" of the disease is given by the author as "varying from three weeks to three months, and even to six, eight or ten months or more." These observations made from experimental inoculations of the author are new to us, as we have not noticed any reference to this important point in the publications of our own army veterinarians. The author records



PLATE I.
Pseudo-farcy, Vigan P. I. 1901. (O. Schw.)

PLATE II.



1. Dr. Gelston's Case. Philippines, 1901.



2. One of Major B. Mills' Cases. India, 1901.

also a case in which the disease recurred after being apparently cured. I can confirm the recurrence in a case that greatly tried the patience of Dr. Gelston, 3d Cavalry, (see photograph, Plate II, No. 1) which finally came under my treatment by change of horses and which was apparently cured after months of treatment. But in about one month ulcers appeared anew and the horse was destroyed, having been rendered unserviceable. The whole right hind-leg was dotted with cicatrices between which new ulcers appeared and the entire skin of the leg had become indurated, resembling a case of elephantiasis.

The "*symptoms*" of the disease are very fully described in a chapter of twelve pages. The author divides the symptoms into the "cutaneous variety" which more resemble farcy, and into the "mucous-membrane variety" which more resemble glanders. This classification of symptoms is quite practical for purposes of differential diagnosis. In describing the "cutaneous variety" the author goes over the regions of the head, neck, trunk, fore and hind limbs, giving the favored and more common parts of affection, calling attention to the fact that the disease is "most frequently associated with those parts which are most exposed to wounds from kicks, contusions, and harness-galls.

The careful description of the "pustules or nodules," from which later on form the "ulcers or sores, which very much resemble farcy-buds," agrees in the main with that given by our own army veterinarians. That "the disease is commonest in the limbs," is surely our observation also. But when the author says: "If a limb is the seat of the disease the whole leg may suddenly swell up like an ordinary case of lymphangitis, and cording and knotting of the adjacent lymphatic vessels may also usually be felt so clearly that even from the beginning they may be frequently seen from a distance," we wonder if he has not had to deal with severer outbreaks of the disease than we had in the Philippines. We have had such cases, but they were not as ordinary as the author seems to wish to impress upon us, and although the treatise contains thirteen photographs of the typical ulcers, just as we have seen them, he fails to give a picture of a case with cording and knotting of the lymphatic vessels, "which radiate toward the nearest lymphatic gland." We take the liberty to reproduce one such case of Major Mills, Bombay, India (*Veterinary Journal*, London, January, 1904), on the shoulder of a horse (see Plate II, No. 2), where we have never seen it in the Philippines.

In describing the "mucous membrane variety" of the symptoms, the author states "that it has been noticed by him in some seven to ten per cent. of cases," which is unusually large according to our observation. He found the lesions on the conjunctiva, on the membranes lining the alæ of the nostrils, septum nasi, sinuses of the head, pharynx, larynx and upper third of trachea, and he bears out his claim by two exceedingly interesting photographs of sections of the skull of horses. We have only observed ulcers in the lower nostrils from autoinfection of animals nosing their affected legs. There was no time for us to make searching post-mortem examination, but it seems as if there is a general scarcity of post-mortem records of this disease. This is evidenced in the chapter on "Post-mortem lesions," which only covers one and one-half pages, and yet it is only by a thorough study of the pathological anatomy of the disease that the various dark points, which the author himself points out throughout the treatise, can be explained and accurate knowledge be obtained.

In the "differential diagnosis," the author enumerates as diseases likely to be confounded with epizoötic lymphangitis: (1) glanders-farcy, (2) ulcerative lymphangitis (Nocard), (3) simple lymphangitis and its sequelæ, i. e., suppurative lymphangitis, (4) tubercular lymphangitis, (5) bursatti, (6) botryomycosis, and (7) a number of other diseases ordinarily named in the differential diagnosis of glanders in text-books. There can be no doubt that the similarity of this disease with the several other diseases mentioned above can be close. But it seems rather unfortunate that we must sharply distinguish between such like names as epizoötic, ulcerative, suppurative and tubercular lymphangitis, and we fear that the danger of confounding these diseases lies not so much in the diseases themselves as in the similarity of their names. Perhaps the author has felt this himself when he particularly mentions that Marcone was anxious to change the name of epizoötic lymphangitis to "Saccharomyces farciminosus (Rivolta)." This latter term may not be a phonetic improvement over the former, but it will certainly be more appropriate if investigators can only agree on the question whether the cryptococcus of Rivolta is a saccharomyces. The author of the treatise has already adopted this nomenclature in presenting the pictures of the vegetable parasite. Moreover, as far as the clinical symptoms of the disease ordinarily have shown themselves to us, it is hardly an epizoötic and seldom a lymphangitis, but an infection carried around in ordinary ways, resulting in

the formation of *specific ulcers* as the common symptom. It is only in neglected cases and in those aggravated cases which have a tendency to run beyond control under treatment, that we see the development of lymphangitis, of cording and knotting of lymphatic vessels, etc. I think it would be wise, from the reasons indicated, to officially adopt the term "Saccharomycosis farciminosis," retaining as synonyms: epizoötic lymphangitis, African farcy, pseudo-fancy, the names under which the disease became first known.

This would leave us free to distinguish more easily the "*ulcerative lymphangitis of Nocard*," which, according to our author, "is due to a *bacillus* discovered by Nocard in 1899. It is an ordinary saprophyte, easily stained by Gram's method. As far as the author could gather from the literature on the subject, it is a disease that has only been recognized in France." But even in France this disease cannot be much known, because Joly* does not mention it anywhere. This disease also "*resembles very much farcy, but there is an absence of the induration of the lymphatic glands, and the ulcers and sores easily yield to treatment.*" I regret that the author makes here the mistake to conclude that the "*tropical ulcers*" described by me (AMERICAN VETERINARY REVIEW, May, 1902,) may be nothing but "*bursatti or a vesicular eruption as seen amongst horses running at grass during the rainy season in India.*" Of course, we know bursatti in America, and as our horses were daily under saddle chasing insurrectos, they had no time to run at grass. I admit that my description is not as readable as I could write it to-day in my comfortable study, and my failure to recognize the cryptococcus of Rivolta is explained by the conditions under which I was working; a field-microscope, badly battered by transport in wagon or on a pack-mule, and an upturned cracker-box serving as a table. However, I gave a good photograph (see Plate I) and even if this first account of the disease from the Philippines was inadequate, there have been since other articles published by our army veterinarians. Dr. Nockolds, 1st Cavalry, contributed two descriptions of the disease (A. V. REVIEW, November, 1902, and May, 1903), and Dr. Jewell, 13th Cavalry, one article in the A. V. REVIEW, (April, 1904), with two good photographs of an affected Filipino pony, and a second article in the "Proceedings of the A. V. M. Association, 1904.) Both veterinarians describe the symptoms of the disease, varying only inconsiderably, and while they used the terms

* Joly, Les maladies du cheval de troupe.

"ulcerative lymphangitis" (Nockolds) and "Contagious ulcerative lymphangitis" (Jewell), and while Dr. Jewell even suggests that the disease would be more properly termed "*Contagious ulcerative dermatitis*," yet there is unfortunately no doubt that the disease present in the Philippines is the epizoötic lymphangitis as described by the author. These vacillations in naming the disease and describing its symptoms, lead one to think that there may be differences in the character of the disease at different times and in different localities. The author of the treatise himself generously admits that during his stay "in China in 1900 he observed cases of so-called glanders, but there was no submaxillary glandular enlargement, no reaction of mallein, and no glanders lesions could be detected in the lungs or other internal organs on post-mortem examination, and that for want of a better name he considered that they were a form of pseudo-glanders. Whatever the disease was, it caused many differences of opinion, especially amongst the German veterinary officers. Mallein was blamed for so-called unsatisfactory results, but few seem to have considered the possibility of two diseases being present and co-existing in many cases." Thus it is clear that we do not as yet stand on firm ground as regards the best name and the true characteristics of the disease, but time, continued study and publications of veterinarians from different countries affected will ultimately straighten out all these discrepancies.

In the chapter on "*Experimental inoculation and susceptible species*," the author states that according to "Tokishige's experiments the disease may also affect cattle, but that he is inclined to think that this requires further corroboration." Nocard and the author reproduced the disease by inoculation in horses, mules, and donkeys, but failed in cattle, goats, and guinea-pigs. Dr. Jewell, 13th Cavalry, states that the disease does not affect cattle in the Philippines, and my own experience is that we used many hundreds of native trotting oxen for light transportation, which mingled with affected horses, but I never observed infection of cattle during two years. The author further mentions that a man inoculated himself with the disease in Bangalore, India, in 1899, numerous bubos forming along the course of the lymphatics, right up to the armpit, but that after suffering severely for several weeks a cure was effected.

Under "*Immunity*" Tokishige is quoted as stating that the popular idea among farmers in Japan is that one attack reduces the predisposition of the animal to the disease, but that this

appears as questionable. Other writers on the subject have seldom omitted to point out the likelihood of the disease recurring.

The chapter on "Treatment," which is divided by the author into external and internal treatment, enumerates different drugs applied and the results obtained, and recommends "the complete extirpation of the tissues invaded, followed by the actual cautery and antiseptic dressing." Our own treatment, particularly during the earlier Philippine campaign, consisted only of the use of Creolin (Pearson) with dressings, which is all we had, and the results obtained were generally satisfactory if the disease could be taken under treatment at once. There were several obstinaceous cases that tried one's patience, and I particularly remember two cases that ran beyond control, in spite of treatment and the condition of the horses became such that they had to be destroyed. As internal treatment the author recommends "administering compounds of iodine and mercury, both of which seem to have more or less specific effect on the disease, particularly mercury."

The treatise finishes in considering the "Prophylaxis," in which are given fifteen rules for preventing the spread of the disease. These rules are thoughtfully brought together and are evidently the result of an extended practical acquaintance with the disease.

Altogether the treatise on "Epizoötic lymphangitis" is a very valuable contribution to our knowledge of this disease, and Captain Pallin should be thanked for its laborious preparation and publication.

OLOF SCHWARZKOPF.

VETERINARY HISTORY.—Dr. A. S. Alexander, replying to an inquiry by a correspondent of the *Breeder's Gazette* of May 24, as to the "Origin of Veterinary Science," dates its inception back to the writings of Homer and Xenophon, but says the true founder was Vegetius, who wrote "De Arte Veterinaria," 300 A. D. Coming down to more modern data, he credits the first veterinary school to France, where the Lyons School was established under royal patronage in 1761, quickly followed by Alfort in 1766. Then the Veterinary College of London, Eng., was opened in 1791. Bringing the history to America, he asserts that the first school to open its doors in this country was the Ontario Veterinary College (Toronto) in 1863. Dr. Alexander in this last statement has failed to observe that the New York College of Veterinary Surgeons had been in operation six years when Prof. Smith started his school.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Great Bend, Kansas.

SALIVATION IN A HORSE—CURE WITH PILOCARPIN.—The horse salivated to such a degree that the saliva flowed in great quantities from the mouth; the appetite remained good; in general condition, however, the animal has somewhat fallen off. Parotid hard and swollen. The duration of this condition about three months. After numerous and unsuccessful treatments, the author injected the horse with pilocarpin hydrochlorate, to irritate the gland; at first 0.3 gm., which was followed by a diminishing in the flow of saliva. On the following day, 0.4 gm., and on the next day 0.5 gm. were injected. Further diminishing of salivation was noticeable. This treatment was followed by the application of iodine and iodide of potassium ointment to the gland. Recovery took place.—(*Wochen-schr. f. Thierheilk.*)

TWO CASES OF UTERINE RUPTURES IN COWS [*J. Kukuljevic*].—*Case I.*—A five-year-old cow manifested great labor pains, at the same time gradually the abdomen became greatly enlarged. After two days, the cow was found lying on the left side, without any labor pains. In palpating the greatly distended abdomen on the right side the foetus and its movements were felt. The right half of the perineal region was greatly distended. The outside of the thigh, and anteriorly to this the parts of the abdomen, were considerably swollen, and inside of this swelling the foetus was palpable with its head in the region of the stifle; also the edges of the rupture of the abdominal muscles were felt. Efforts to bring the foetus into the birth passage were fruitless. The cow was slaughtered, and at the same time Cæsarean section was performed, so that the calf was saved and brought up. On the right abdominal wall a rupture of about 60 cm. was present, also a rupture of the right horn of the uterus was found. *Case II.*—Clinically this was just the same as the previously described case. As here also the efforts to bring the calf into the right passage remained unsuccessful, the cow was slaughtered, and the calf saved by performing Cæsarean section at the right time. The author believes

that the uterine ruptures during the act of parturition were caused by the extraordinary size of the calves, as traumatic interference could positively be excluded. — (*Allatorvosi Capok.*)

A CASE OF CARCINOMA OF THE CÆCUM IN A DOG [*Prof. de Meis and Prof. Parascandolo*]. — A bull dog refuses all nourishment, becomes noticeably emaciated and vomits bile constantly and violently, writhes from pain, and passes fæces only every 3 or 4 days. Collapse, general debility, complete cessation of defecation and urination. Meteorism of the abdomen, especially so on the sides. The cause of the constipation is established through laparotomy. After isolating and removing the head of the cæcum, a large portion of this was found to be covered with a tough new formation, which was removed by resecting the head of the cæcum. The distal end of the cæcum and the end of the small intestines were united with the aid of a Murphy button, the peritoneum and the wound closed with sutures. Antiseptically bandaged. The tumor qualified itself as a carcinoma annulare. The pulse increased in two hours from 78 to 120; temperature after 6 hours 36°C . The patient complains and passes a small quantity of urine, receives caffein, camphor, tinct. valerian, æther. The temperature rises in two days to 39° ; pulse unchanged, high. Endovenous injections of artificial serum was given. Cessation of vomiting; milk and egg is retained by the stomach. After four days the pulse is thready and hardly perceptible; respiration is accelerated. On the fifth day *exitus letalis*. At the autopsy no sign of bleeding can be noticed. The serous covering of the intestines at the place where brought together was found completely united. No signs of peritonitis. As the cause of death the authors suspect an autointoxication. — (*Arch. f. Wissen. u. prakt. Thierh.*)

CONTRIBUTION TO THE KNOWLEDGE OF THE HISTOLOGICAL CHANGES OF THE PANCREAS, IN PANCREATIC DIABETES [*A. Halasz*]. — Although the connection between the affections of the pancreas and diabetes mellitus was brought to attention by Cowley as early as 1788, and also mentions were made of this possibility by Bright, Lloyd, Fredrichs and Lanceraux, the teaching of pancreatic diabetes, however, had not won a sound basis until Mehring and Munkowski succeeded in producing a severe pronounced diabetes through extirpation of the pancreas in dogs. However, positive pathological conditions were not recorded, as on one side the pancreas failed to reveal lesions in

men succumbed from severe diabetes, or were only present to a very slight extent, and on the other, severe affections of the pancreas were found without the accompaniment of diabetes. The pathology of pancreatic diabetes was not based on positive grounds until the attention was directed to the conditions of the islands of Langerhan in diabetes. Said islands are present in every pancreas and are representing 0.07.-0.03 mm. large, round masses of cells of irregular formations. They remain intact in case of ligation of the pancreatic duct, and also in diseased conditions of the pancreas; however, in cases of diabetes mellitus, will show an affection by themselves or in a preponderating degree. Ebner was the first who attributed carbohydrate changes to these islands of Langerhan; their diseased condition in diabetes mellitus was first proved by Scobelen, then Opic, Weichselbaum, Stangel, etc. Weichselbaum and Stangel differentiated three forms of affections, namely, the simple atrophy, the vacuol formations, and the hydropic degeneration, also the new formation of the connective tissue. The author examined histologically the pancreas in 15 cases of diabetes mellitus, and found in every case the changes in the islands of Langerhan. The changes were not the same in every case; they showed sometimes simple atrophy, while in other cases sclerosis, still in others they transformed in a homogenous colloidal mass, sometimes again showed a change in the walls of the vessels or of the epithelial cells. The atrophied islands are in most cases elongated, the cells contain little plasma and are irregular; their nucleus takes stain intensely; the islands are sometimes surrounded by a capsule of strong connective tissue. In other cases a swelling, and in every case a colloidal degeneration of the epithelial cells was noticeable. In several cases, the vessels of the islands proved a hyaline degeneration. In the majority of cases, the changes of the islands caused a primary diseased condition of the vessels, through which the connection of arterial sclerosis in diabetes mellitus can be explained.—(*Orvosi hetilap.*)

ARSENIC-CANTHARIDES OINTMENT FOR THE REMOVAL OF SKIN WARTS [*Pecus*].—The author recommends the following formula: R Arsenici albi, pulveris cantharidum, aa 1.0; olei terebinthinae venalis, 2.0; olei lini, cerae flavae, aa 5.0. M. ft. unguentum. Sig. Externally. The warts to be rubbed twice with this ointment at intervals of several days. The ointment is of a somewhat hard consistence, and should be warmed on the fire before use.—(*Schweitz. Arch. f. Thierh.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

OSSEOUS AND CARTILAGINOUS MELANOSIS [*Proj. J. Nicollis*.].—This affection has not been frequently observed. With the exception of Bru, Spooner, Lenat, Fröhner, Cadeac, and Cunningham, who related cases of it, the literature is poor. The following case adds to the history: At an abattoir the carcass of a white horse was seized because of generalized melanosis and the following were observed: it existed principally in the bony marrow and the bony tissue itself. There were melanotic infiltrations and tumors. The pericardium was slightly affected. The myocardium and vascular trunks were not. All the lymphatic glands were diseased, although not extensively. The lungs had a few blackish spots, the pleura also. There were deposits in the trachea; the liver contained many, the spleen very few. If the general mass of the organism showed only slight lesions, it was not so with the skeleton. In the head, the maxillaries presented in the spongy structure melanotic deposits; they were small. There were some also in the occipital and the temporal. In the trunk all the bones were more or less affected. The vertebræ, cervical, dorsal, lumbar, and even caudal, presented in their spongy structure marks of melanosis, very extensive in the cervical, somewhat less in the dorsal and gradually diminishing in the others. The sternum was extensively affected. The ribs more or less. It was noticed that for the bones of the trunk, those of the anterior part were less affected than the posterior. In the extremities also all the bones were extensively diseased. In the scapula the spongy tissue was black, the periosteum slightly diseased, the cartilages of prolongation free from it. The humerus, radius and cubitus, the coxæ, the femur, the patella, the tibias were also more or less affected, not only in the spongy tissue, but on the periosteum and on the articular cartilages. In the digital regions no trace of pigment was found; from the carpus and tarsus down every one was normal.—(*Journ. de Zoötechnie, Jan., 1905.*)

TORSION OF THE UTERUS—ABNORMAL RETENTION OF FœTUSES IN A SLUT [*Mr. Bonnet*.].—This slut was seven years old. For three days she had been dull, refusing her food. Some two weeks previous she acted as if she was going to have pups,

although she was not suspected to be pregnant. The genital organs examined revealed nothing; the os uteri was well contracted and the vaginal walls felt perfectly normal. However, in examining the abdomen, her condition was readily made out; several foetuses were felt in the uterus. Surgical interference was decided upon and the Cæsarean operation adopted as the one indicated. The animal well prepared with all precautions of anaesthesia, asepsy and antisepsy, the abdomen was opened. A large quantity of rosy, semi-purulent fluid escaped. It was useless to continue the operation; the animal was killed. At the post-mortem five dead foetuses, in an advanced state of putrefaction were found; one floating among the intestinal mass and surrounded by its placenta, one engaged in a laceration of the right horn; the others were still attached to the walls of the uterus in the left horn. The uterus was entirely twisted, the right horn having turned round the left, which acted as an axis while the other was going round it. The borders of the uterine wound were thickened and purple in color. The bladder had also been displaced, was largely distended and filled with fluid having a strong odor of fermentation. All the other organs were sound.—(*Journ. de Zoötechnie, Jan., 1905.*)

TUBERCULOUS PERICARDITIS IN A DOG [*Prof. G. Leblanc*]. A large sized Danish slut has lately acted sick, and gets large. She still eats well. She shows evidence of ascites, the abdomen contains an enormous quantity of liquid. She has no cough and has no indications of having been exposed to tuberculosis. However, this is suspected. On percussion of the chest, when the animal is lying, dullness is perceived in the cardiac region. When she is standing, there is also dullness, but on both sides and not horizontal, as in case of pleurisy or hydrothorax. On auscultation the respiratory murmur is not heard on either side, except near the vertebral groove and a little on the middle and superior part on the right. The beatings of the heart are entirely unheard on either side. Pulse is accelerated and strong. An intra-pericardiac collection is suspected. After a few days of treatment, the animal is destroyed. Post-mortem: about 10 litres of serosity are taken from the abdomen; the liver is enlarged, a true cardiac liver; kidneys congested. In the chest a large quantity of fluid in the pleural cavity, no inflammation of the pleura; lungs pushed upwards; pericardium forms an enormous sac, filling the three quarters of the thoracic cavity; the serous coat is thick and fibrous, and contains two litres of serosity. In opening the pericardial sac, the dilated heart is ex-

posed and numerous tuberculiform growths are found on the surface of the pericardium and in the structure of the heart. The endocardium and the valves are sound. No tuberculosis in the lungs; lymphatic glands are healthy.—(*Journ. de Zoötechnie, Feb., 1905.*)

PARALYSIS OF THE LOWER JAW IN A DOG—SLOW RECOVERY [*J. Nicolas*].—This affection is considered in dogs as one of the most characteristic of dumb rabies; however, it is not pathognomonic of this disease. It has indeed been observed with other affections and numerous are cases on record, such as those of Möller, Galtier, Waltrup, Caussé, Youatt, and many others. Whatever may be the causes, which are sometimes difficult to demonstrate, there are cases of recovery of the paralysis which seem to exclude the idea of its being essentially a symptom of rabies. The following is another. For four days this dog is dull, has lost his appetite, has paralysis of the lower jaw, saliva escapes from the mouth. "Evidently," says the owner, who has had other dogs affected with rabies, "this dog has the same trouble." Besides this, the dog walks staggering. During three days that he is under observation, he does not become aggressive, not even excited; he remains always laying down and refuses all food. On the fourth day, it was expected that he would be found dead; he is not, but is next to it, as he is so thin and has lost so much flesh that he has the aspect of a dog in the advanced stage of paralytic rabies. But it is observed that when the dogkeeper is to take hold of him, the dog wags his tail. Is he suffering with rabies? is the question. An examination of the mouth, which was not made at first, is carried out without result. The next day the dog begins to eat; meat placed in his mouth is swallowed. He digs his whole nose in the pail containing his food and succeeds in taking most of his meal. From this day, he becomes more gay, more coaxing; by degrees the general symptoms subside; locomotion becomes firmer; in a week he is returned to his master in good health. He had received no treatment whatsoever.—(*Journ. de Zoötechnie, Feb., 1905.*)

UMBILICAL HERNIA IN A FILLY—RADICAL OPERATION—RECOVERY [*Prof. Coquot*].—This filly is thoroughbred and two-and-a-half years old. Born with the hernia, this has grown gradually and is now as big as the fist. She has been submitted to several treatments. Not liking nitric acid applications, the use of the clamp was resorted to, but failed, as two months after the tumor was as large as before. The use of the forceps of Benaud

was not any more successful. Finally, as the hernia was enlarging, as the animal was becoming subject to repeated attacks of colics, from failure of the alimentary masses to pass, and finally as there was danger of strangulation, it was decided to resort to the operation for radical recovery, viz., the surgical closing of the umbilical ring with sutures. After preparation, the animal was secured and the parts thoroughly aseptized. An incision of the skin made on the median line exposed the hernial sac. The hernial tract was found cylindrical, six centimetres long and with the walls indurated. The edges of the ring were excised slightly and scraped with the bistoury and brought together with four strong sutures of silk. The flaps of skin were trimmed and sutured with Florence hair. Salol dressing was put on and kept with adhesive plaster. The whole was covered with a pad of pasteboard held in place by a bandage. There were no serious complications.—(*Rec. de Med. Vet.*, March 15, 1905.)

A SURPRISE OF POST-MORTEM [*H. Benjamin*].—Calling at a stable to visit a lame animal, the author had his attention called to a ten-year-old horse which has been ailing for a week. There is nothing particular, except that he refuses his oats, eating only hay and mashes. For better opportunity to examine him, he is sent to the hospital of Mr. B., where it is proposed to purge him; but as he eats that day some six litres of oats, the purgation is not given. During the night the horse is heard kicking in his stall and when looked at he is found suffering with paralysis of the right hind-leg. His urine is clear and normal in appearance. The next day he is put in slings, but hangs down in them; he is let down and dies during the night. At the post-mortem lesions of very acute peritonitis are found, and (here is the surprise): "The left kidney is the seat and the centre of an enormous tumor, extending to the right beyond the median line, and which is filled with white grumulous pus. Both kidneys were enlarged. On section, their parenchyma is purplish and wine colored." It is regrettable that rectal examination had not been made, as it might have given some indication of the condition, which during life had never been manifested by the animal.—(*Bullet. de la Soc. Cent.*, March, 1905.)

STRANGLES—ABSCESS OF THE SUPERIOR MOLAR GLAND EXTENDING TO THE MENINGES [*J. M. Augustin*].—Aged four years, this mare is ailing. She is dull, is rather feverish. The next day she is found with an enormous swelling of the entire

left side of the head. It has invaded all the region of the masseter, spreading to the parotid, and the eyelids are kept closed. The whole region is warm, painful, hard ; mastication is difficult ; no appetite ; abundant diarrhoea. Temperature 40° C. The diagnosis of purpura is set aside, and a deep abscess is suspected. Treatment is prescribed accordingly. No improvement is shown. Slight deep fluctuation is detected and puncture made with the thermo-cautery, but without result. General weakness becomes more and more marked. The animal can scarcely stand up. Another puncture is made and bloody reddish pus with the typical aspect of salivary pus, escapes in small quantity. The condition continues to get worse ; the weakness is more marked ; diarrhoea continues ; hepatized spots are discovered on auscultation of the lungs. Death occurred on the fourth day. Post-mortem : The masseter, removed by slices, covers a small abscess, which in the deep layer communicates with a larger accumulation in the molar gland. The pus macerated the surrounding tissues of the masseter muscles, the alveolo-labialis and the pterygoideus. Not collected into one pouch, it runs backwards, deeply inwards, round the temporo-maxillary joint, which is the seat of inflammation. A larger collection of pus exists in the spterygoideus muscles, which extends upwards under the sphenoid, and finally enters the cranial cavity through the occipito-spheno-temporal hiatus. The meninges are gorged with blood, inflamed, thickened. In the abdominal cavity there were lesions of enteritis and in the thorax those of diffused pulmonary gangrene.—(*Rev. Gener. de Med. Vet., March, 1905.*)

THE chairman of the Army Legislation Committee of the American Veterinary Medical Association, Dr. William Herbert Lowe, of New Jersey, attended a conference in Philadelphia on May 13 relative to proposed army legislation.

PLAQUE IN CATS.—W. Hunter's conclusions as to the occurrence of plague in cats, are as follows : 1. Cats suffer from plague. 2. The disease may be acute or chronic. 3. The type of the disease is septicæmic. 4. These animals may occasionally play a part in the dissemination of plague. 5. In plague infected districts possible plague infection in cats is of great importance from a domestic point of view. 6. In plague infected areas cats probably become infected through plague rats and mice which they devour as food.—(*London Lancet, April 22.*)

CORRESPONDENCE.

VETERINARY INTERESTS IN CUBA—SOME NATIVE CHARACTERISTICS.

SANTIAGO DE LAS VEGAS, CUBA, May 3, 1905.

Editors American Veterinary Review:

DEAR SIRS:—Possibly some notes from a "tenderfoot" in this tropical country may be of interest to American veterinarians.

In the investigation of animal diseases very little original work has been done in the Latin American countries, and there is very little modern veterinary literature in the Spanish language.

One of the first difficulties to be overcome in the study of animal diseases here is to recognize the well-known diseases from the common Spanish names. I have found a number of familiar diseases and some that are new to me.

As would be expected, parasitic diseases are common and quite serious. Cattle are troubled a great deal with ticks (*B. Australis*), and other varieties are found on other domestic animals. A remedy used here for ticks and one of the most efficient I have ever tried is a drug called *Cebadilla*, evidently the ground seeds and leaves of one or more species of *Schizonecaudon*, which is imported from Mexico. One pound of *Cebadilla* is put in five gallons of strong alcohol (*Aguardiente*) and allowed to stand a few days. It is applied by hand dressing with a rag. It is also a much more efficient insecticide than the emulsions that are commonly used. As alcohol can be purchased for twelve cents per gallon it is not a very expensive remedy. Calves and sometimes older cattle suffer seriously in some localities from lung worms (*S. micrurus*) and also from liver flukes (*F. hepatica*). Scabies is occasionally seen in horses, but I have not seen it in cattle. Black-leg is common in calves, and outbreaks of anthrax also occur in cattle. Bovine tuberculosis is rare, although human tuberculosis is common. Tetanus is very frequent, and wounds must be carefully treated to guard against this infection and to prevent invasion of "screw flies."

There are very few qualified veterinarians in Cuba, and most of them are graduates of Spanish or French veterinary schools. In the country districts most of the veterinary work is performed by farmers and blacksmiths, and as most of them

can neither read nor write their work is very crude. Actual cauterity in a severe form is common. Bulls are castrated by twisting the scrotum over a forked stick and striking the "cord" several times with another stick until it is severed, no incision being made in the skin. Many ridiculous superstitious forms are also practiced for curing diseases in animals. The writer prescribed for a case of acute indigestion, only to learn later that the horse was cured by getting a small twin girl to make the sign of the cross over it—a remedy that is believed to be infallible.

N. S. MAYO.

TO REGULATE THE PUBLIC SERVICE OF STALLIONS IN WISCONSIN.

MADISON, Wis., May 9, 1905.

Editors American Veterinary Review:

DEAR SIRS:—Please find enclosed copy of our new stallion service act, which should prove of great interest to veterinarians as well as horse-breeders.

The bill was drafted by me and is the first step in a propaganda we have started for the advancement of horse-breeding in Wisconsin.

Note the clause relative to soundness of stallions. We could not compel the owners to employ a veterinarian to make examination of stallions—or could not get such a provision through the legislature, but the clause as it stands will practically make it certain that veterinarians will be called in to examine the stallions, for I conclude that an owner will be afraid to make affidavit as to soundness of his horse without having a veterinarian's opinion on the matter.

Sincerely yours,

A. S. ALEXANDER, M. D. C.,

Prof. Vet. Science and Horse breeding, Wis. Agrl. College,

Prof. Vet. Hygiene, Breeding, etc., C. V. C.

* * *

Senate Bill No. 216, approved April 22, 1905.

A BILL TO REGULATE THE PUBLIC SERVICE OF STALLIONS IN WISCONSIN.

The people of the State of Wisconsin, represented in Senate and Assembly, do enact as follows:

SECTION 1. Every person, firm or company standing or traveling any stallion for profit or gain in this state shall cause the name, description, and pedigree of such stallion to be enroled by the department of horse breeding of the college of

agriculture, university of Wisconsin, and procure a certificate of such enrolment, from said department, which shall therenpon be presented to and recorded by the register of deeds of the county in which said stallion is used for public service.

SECTION 2. In order to obtain the license certificate herein provided for, the owner of each stallion shall make oath before a notary public that such stallion is, to the best of his knowledge, free from hereditary, contagious or transmissible unsoundness or disease, or, in lieu thereof, may file a certificate of soundness signed by a duly qualified veterinarian, who shall be a regular graduate of a recognized veterinary college, and shall forward this affidavit, or veterinarian's certificate, together with the stud book certificate of registry of the pedigree of the said stallion and other necessary papers relating to his breeding and ownership to the department of horse breeding of the college of agriculture.

SECTION 3. The officers of the department of horse breeding of the said college of agriculture, whose duty it shall be to examine and pass upon the merits of each pedigree submitted, shall use as their standard for action the stud books and signatures of the duly authorized presidents and secretaries respectively of the various horse pedigree registry associations, societies or companies recognized by the department of agriculture, Washington, D. C., and shall accept as pure-bred, and entitled to a license certificate as such, each stallion for which a pedigree registry certificate is furnished bearing the signature of the president and secretary of a government-recognized and approved stud book.

* * *

SECTION 4. The owner of any stallion standing for public service in this state shall post and keep affixed, during the entire breeding season, copies of the license certificate of such stallion, issued under the provisions of the next succeeding section, in a conspicuous place both within and upon the outside of the main door leading into every stable or building where the said stallion stands for public service.

SECTION 5. The license certificate issued for a stallion whose sire and dam are of pure breeding and the pedigree of which is registered in a stud book recognized by the government department of agriculture, shall be in following form:

University of Wisconsin,
College of Agriculture,
Department of Horse Breeding.

CERTIFICATE OF PURE-BRED STALLION NO. ——.

The pedigree of the stallion (name)

Owned by

Described as follows :

(Color) (Breed)

Foaled in the year ——, has been examined at the College of Agriculture, and it is hereby certified that the said stallion is of pure breeding and is registered in a stud book recognized by the Department of Agriculture, Washington, D. C.

(Signature)

Dean of the College of Agriculture.

The license certificate issued for a stallion whose sire or dam is not of pure breeding shall be in the following form :

University of Wisconsin,
College of Agriculture,
Department of Horse Breeding.

CERTIFICATE OF GRADE STALLION NO. ——.

The pedigree of the stallion (name)

Owned by

Described as follows :

(Color)

Foaled in the year ——, has been examined at the College of Agriculture, and it is found that the said stallion is not of pure breeding and is, therefore, not eligible for registration in any stud book recognized by the Department of Agriculture, Washington, D. C.

(Signature)

Dean of the College of Agriculture.

The license certificate issued for a stallion whose sire and dam are pure bred, but not of the same breed, shall be in the following form :

University of Wisconsin,
College of Agriculture,
Department of Horse Breeding.

CERTIFICATE OF CROSS-BRED STALLION NO. ——.

The pedigree of the stallion (name)

Owned by

Described as follows :

Color

Foaled in the year ——, has been examined at the college of agriculture, and it is found that his sire is registered in the and his dam in the

Such being the case, the said stallion is not eligible for reg-

istration in any stud book recognized by the Department of Agriculture, Washington, D. C.

(Signature)

Dean of the College of Agriculture.

SECTION 6. Every bill, poster, or advertisement issued by the owner of any stallion enroled under this act, or used by him for advertising such stallion, shall contain a copy of its certificate of enrolment.

SECTION 7. A fee of \$2.00 shall be paid to the horse breeding department of the college of agriculture, university of Wisconsin, for the examination and enrolment of each pedigree and for the issuance of a license certificate in accordance with the breeding of the stallion, as above provided.

SECTION 8. Upon a transfer of the ownership of any stallion enroled under the provisions of this act, the certificate of enrolment may be transferred to the transferee by the department of horse breeding of the college of agriculture upon submittal of satisfactory proof of such transfer and upon payment of the fee of 50 cents.

SECTION 9. Violation of any of the provisions of this act shall be punished by a fine of not exceeding fifty dollars.

SECTION 10. This act shall take effect and be in force from and after January 1, 1906.

LAUREL AS A POISON FOR DOMESTICATED ANIMALS.

The following letter from the Bureau of Plant Industry, Department of Agriculture, in reply to a private inquiry by Dr. Bell, is published, as it is deemed of importance to the profession at large :

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,

WASHINGTON, D. C., May 9, 1905.

Dr. Roscoe R. Bell, Brooklyn, N. Y.:

DEAR SIR :—Your letter of the 4th inst., addressed to Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, making inquiry relative to the poisonous properties of the laurel, has been referred to this office for attention.

In reply I beg to state that in the latter part of the eighteenth century, Peter Kalm described cases of poisoning in animals—horses, sheep, and cattle—from eating the laurel, and since then at intervals cases have been reported in the literature. It seems that these animals will eat laurel leaves, especially if they have

been deprived of green food for some time. The symptoms produced by laurel poisoning are nausea, frothing at the mouth, dullness, inability to stand, drowsiness, stupor, disinclination to move, irregularity in breathing, and even paralysis and death. In one case of poisoning of a sheep which occurred under our observation, the symptoms were marked, but it is thought that the animal was probably saved by the persistent diarrhoea, so that it would seem advisable to aid nature by the administration of saline purgatives. In 1802 Thomas published some experiments in which he mixed lard with the laurel preparation, and he found that these preparations were very much less poisonous than controls in which no lard was used. The administration of lard in cases of poisoning by laurel is still popular among the farmers.

We would certainly advise against pasturing animals in a field in which laurel is present. The subject of laurel poisoning is now under investigation in this laboratory, and it is hoped that more detailed information concerning the active principle and physiological action of this plant will be available in the near future.

Very truly yours,

ALBERT C. CRAWFORD, *Pharmacologist.*

APPRECIATION OF TIMELY HELP.

NASHVILLE, TENN., May 4, 1905.

Editors American Veterinary Review:

DEAR SIRS:—State Senator H. E. Howse, a prominent merchant-politician of Nashville, championed the cause of the veterinary profession of Tennessee at the last session of the legislature of that State by introducing and having successfully passed Senate Bill No. 38. This legislative act regulates the practice of veterinary medicine by creating a Board of Veterinary Medical Examiners, etc.

After the Senate had passed the Bill it was introduced in the Lower House by Hon. W. P. McClure and successfully passed that body. These two law-makers deserve the plaudits not only of the veterinarians of Tennessee and the South, but of the United States and America; in fact, each and every veterinarian should appreciate to the fullest extent the interest that a layman and friend takes in the development and protection of our profession.

Senator Howse and Representative McClure enjoy the unique distinction and honor of fathering the first veterinary

practice act which adorns the statute books of a Southern State.

Yours very truly,

GEORGE R. WHITE.

[NOTE.—In the statement that the recent law secured in Tennessee is the first practice act passed by a Southern State, our correspondent overlooks the fact that Virginia has had such a statute law for about ten years and North Carolina for at least three years.—R. R. B.]

WANTED—SOME INFORMATION.

LAUNCESTON, TASMANIA, April 3, 1905.

Editors American Veterinary Review :

DEAR SIRS :—While writing I would like to know if any of your readers, who have had a large practical experience of metritis, septic metritis, retention of the placenta, and peritonitis following parturition in the mare, can give me any hints regarding the successful treatment of these affections. I have met with them a good deal in my practice, but cannot say that they have brought me much credit or satisfaction. Another point I would like some light on is the hypodermic dose of citrate of ergotine for the mare, and the toxic dose of liquor extractum ergotae B. P. The doses advised in most works on therapeutics are quite useless. I am yours, etc.,

E. A. WESTON, G. M. V. C.

UNIVERSITY OF PENNSYLVANIA GETS \$100,000 MORE—APPROPRIATION FOR AN EXPERIMENT FARM FOR PENNSYLVANIA.

PHILADELPHIA, May 15, 1905.

Editors American Veterinary Review :

DEAR SIRS :—I hasten to inform you that the Governor has approved the act passed by the legislature of Pennsylvania appropriating \$100,000 to the Veterinary Department of the University of Pennsylvania. This, together with the gift of \$100,000 received last fall, and other contributions in prospect, will enable us to establish the sort of institution that we have for many years been working and longing for.

I am sure that the veterinary profession will also be interested to know that the Governor has approved another act of assembly under which funds will be furnished for purchasing a farm and for providing equipment for the study of infectious diseases of animals. We will probably purchase a farm of 150 acres in Delaware County that we have been using for the past year and a half in connection with our investigations in rela-

tion to the vaccination of cattle against tuberculosis. Dr. Gil-liland and I have 128 cattle in experiments on this subject. Ample funds are also provided for meeting the expenses incident to the management of this work.

While the Bureau of Animal Industry has a nice piece of ground in the country near Washington, for use in connection with its experimental work, and while some very good research work has been carried on at some of the agricultural experiment stations, this is the first instance in America, of which I have knowledge, in which a State has purchased and set aside a fairly well-equipped farm for use as an experiment station for the study of infectious diseases of animals.

In Germany there are a few *Seuchen Versuchsstationen*, and there are some in other countries of Europe. It is strange that the States of the United States with their vastly greater live-stock possessions have not before this made more ample provision for investigations concerning diseases of animals and for veterinary education.

The veterinary profession of Pennsylvania has, as usual, worked as a unit for the attainment of these objects and is to be congratulated on its success in this, its greatest undertaking. A very heavy responsibility has been placed on those who have to plan and execute the work thus provided for and it is a source of great satisfaction to them to know that they may depend on having the help and coöperation of the veterinarians of the State.

Very sincerely yours,

LEONARD PEARSON.

BECAUSE a horse is blind does not seem to be any reason why owners of good trotting-bred mares should not mate them with him at a high fee. There is a blind stallion now in the blue-grass district, which is getting all the stud business he can do at a fee of \$100.

FOR a long time it was popularly supposed that to obtain a large yield of rich milk from the cow was only a question of feeding. That idea is now very properly discredited by all who have studied the matter, and it is generally admitted that we cannot, under normal conditions, feed fat into milk to any appreciable extent, or for any length of time. The quality of richness of milk in butter-fat depends almost entirely on the breed and individuality of the cow, and no amount of feeding will ever convert a three-per-cent. cow into a four-per-cent. one.
—(Robb.)

COLLEGE COMMENCEMENTS.

GRAND RAPIDS VETERINARY COLLEGE.

The eighth annual commencement was held in the College Auditorium at 8 o'clock on the evening of March 30, 1905, when the following gentlemen received the degree of Doctor of Veterinary Science: Charles H. Bay, Cambridge, Ohio; Levi P. Bailey, McBride, Mich.; N. D. Baldwin, Ludington, Mich.; Amma Biddison, Viroqua, Wis.; N. L. Boilore, Alpena, Mich.; A. C. Branson, West Branch, Iowa; L. P. Conkey, Prairie Depot, Ohio; T. F. Curtin, Pittsfield, Mass.; J. A. Culbert, Grand Rapids, Mich.; R. G. Dingman, Prophetstown, Ill.; A. F. Elkin, Rossmoyne, Pa.; J. H. Elkin, Smicksburg, Pa.; E. L. Ferguson, Lyons, Mich.; Wm. H. Ferguson, Ionia, Mich.; E. H. Fletcher, Belding, Mich.; W. D. Garratt, Marietta, Ohio; P. S. Kingston, Madison, Wis.; C. C. Lane, Unadilla, Mich.; George H. Lape, Albany, N. Y.; J. M. McMichael, Dowagiac, Mich.; Kenneth A. Miller, Kynston, Victoria, Australia; V. P. Norton, Grand Rapids, Wis.; Emmitt Otto, Clarksville, Mich.; E. A. Pettit, Ionia, Mich.; Wm. E. Price, Milford, Ind.; L. B. Rinehart, Ludington, Mich.; August F. Sauer, Grand Rapids, Mich.; F. D. Seed, Wallaceburg, Ont., Canada; C. E. Steinburg, Benton Harbor, Mich.; A. B. Warrener, Portsmouth, Ohio; R. E. Wise, Royal Center, Ind.; James P. Young, Pewee, W. Va.

Dr. A. F. Elkin of Rossmoyne, Pa., received the gold medal, having passed the best general examination on all branches of the profession; Dr. Emmitt Otto, of Lansing, Mich., received the silver medal for second place, and Dr. J. H. Elkin of Smicksburg, Pa., was awarded the third prize. The special prize offered by Dr. Armstrong for the best paper on *materia medica* went to Dr. R. E. Wise, of Royal City, Ind.

MAN'S NOBLE FRIEND.—The barking of a Scotch terrier belonging to John McCarthy, of No. 66 South 2d St., Williamsburg, led to the discovery of a fire and was probably responsible for the saving of many of the lives of the sixteen persons asleep in the house at the time. Shortly before 5 o'clock McCarthy was awakened by the barking of the dog, which then jumped on the bed and began to paw at the bed covering. McCarthy found, when fully aroused, that the room was filled with smoke, and quickly warned the inmates of the house, who reached the street in safety.—(*N. Y. Tribune.*)

SOCIETY MEETINGS.

THE REVIEW presents its compliments to Secretaries of Veterinary Medical Associations throughout the United States and Canada, and begs to again remind them that this journal earnestly desires to publish the transactions of every meeting held within that large territory. It points with pride to this department in Volume XXVIII, which include *most* of them; but two or three have failed to avail themselves of our oft-repeated invitation to give the profession at large the benefit of their deliberations. We want a closed volume of the REVIEW to constitute a complete record of everything of interest and value in a veterinary sense occurring in all the Americas during that period.

MASSACHUSETTS VETERINARY ASSOCIATION.

The twenty-first annual meeting and banquet of this Association was held at Young's Hotel, Boston, Wednesday evening, April 26. Members present were Drs. Beckett, Burr, Blackwood, Bunker, Babson, Babbitt, Cleaves, Emerson, Frothingham, Howard, Lee, Lewis, May, Maloney, Peters, Perry, Pierce, Playdon, Peterson, Winchester, Winslow and White.

Dr. J. F. Ryder, of the Bureau of Animal Industry, was the guest of the evening.

On motion of Dr. Perry, seconded by Dr. Thayer, the minutes of the previous meeting were accepted as read.

The name of Dr. Daniel D. Lee was read, to be voted upon for membership.

On motion of Dr. Howard, seconded by Dr. Winslow, No. 5 on the order of business was deferred to the next meeting. It was a tie vote and decided by the Chair that the motion should not prevail.

On motion of Dr. Frothingham, seconded by Dr. Thayer, it was voted that the Secretary cast one ballot for the election of Dr. Lee. Dr. Daniel D. Lee was thereby elected a member.

Dr. Winchester moved that the meetings of the ensuing year be held at Young's Hotel or some central location agreeable to the Executive Committee. Seconded by Dr. Winslow. Carried.

The applications of Dr. John H. Meaney, of Athol, and Dr. Jacob G. Pfersick, of Greenfield, were received and were referred to the Executive Committee to be acted upon.

On motion of Dr. Winchester, seconded by Dr. Bunker, it was voted to appoint a committee of three to submit a list of names for officers for the ensuing year. The committee then retired and in a short time returned, submitting their report. Dr. Winchester moved that the report be accepted, seconded by Dr. Lewis. Carried.

On motion of Dr. Winchester, seconded by Dr. Babson, it was voted that the Secretary cast one ballot for the election of names submitted.

The following were the officers chosen for the year 1905-1906:

President—Daniel Emerson, M. D. V.

First Vice-President—Aug. S. Cleaves, D. V. S. (reëlected).

Second Vice-President—Calvert H. Playdon, M. D. V.

Secretary-Treasurer—Frank J. Babbitt, M. D. V. (reëlected.)

Executive Committee—Edward C. Beckett, M. D. V., Benj. D. Pierce, D. V. S. (reëlected), L. H. Howard, D. V. S., Charles Winslow, D. V. S., and Chas. H. Perry, M. D. V.

On motion of Dr. Bunker, seconded by Dr. Lewis, it was voted to adjourn the meeting, *pro tem.* Next in order was the banquet, which was enjoyed by all. After dinner President Beckett again called the meeting to order.

The report of the Secretary-Treasurer was then read.

Dr. Frothingham moved that the report be accepted as read, seconded by Dr. Perry. Carried.

Dr. Howard acted as toastmaster. Dr. Beckett was first called upon and responded in a genial manner, and at the conclusion of his remarks surrendered the chair to President-elect Dr. Emerson. Dr. Emerson was then called upon and responded in a fitting manner, thanking the members for the honor bestowed upon him.

Dr. Ryder, of the B. A. I., was next called upon and spoke in an interesting manner, also having some statistics which were food for thought.

Dr. Daniel D. Lee was next called upon as representing the B. A. I. at this port in former years and told some interesting experiences.

Dr. Frothingham was called upon as representative of the State Board of Registration and gave an interesting account of the work done by the board since its being established.

Dr. Maloney was then called upon as a representative of the New York College of Veterinary Surgeons, and responded in a fitting manner.

Dr. Aug. S. Cleaves responded as a graduate of McGill University.

Dr. Babson was next called upon as a representative of the Harvard Medical Alumni Association and State Board of Registration, the toastmaster laying stress on the fact that he is one of our best workers for the advancement of the veterinary profession. Dr. Babson responded in a fitting manner and answered many questions regarding registration.

Dr. Winchester was last called upon as a representative of the American Veterinary College, and replied in a genial manner.

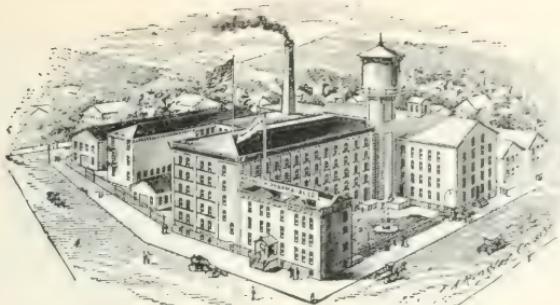
Adjourned at 11 o'clock P. M.

FRANK J. BABBITT, *Secretary.*

THE Alumni Association of the Veterinary Department of the University of Pennsylvania will hold its annual banquet at Boothby's, 1235 Chestnut Street, Philadelphia, on the evening of June 14th. It will this year embrace the celebration of the Department's recent good fortune in being the recipient of a princely endowment and a generous appropriation from the State, and a number of prominent veterinarians of the country have been invited to attend and aid in the festivities of the joyous occasion.

THE TENNESSEE STATE BOARD OF VETERINARY MEDICAL EXAMINERS held their first meeting in Knoxville, May 13th, at which time they organized and adopted rules and regulations for the government of the Board. The following officers were elected : President, Dr. Geo. R. White, Nashville ; Vice-President, Dr. J. W. Scheibler, Memphis ; Secretary, Dr. M. Jacob, Knoxville ; Treasurer, Dr. G. B. Blackman, Chattanooga. The above members hold commissions of appointment by Governor John I. Cox.

PREPARATIONS are well under way for the semi-annual meeting of the Veterinary Medical Association of New Jersey, to be held at Washington Park, N. J., July 13th and 14th. Veterinarians, sanitarians and others interested are invited to attend.



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WITH AN INTRODUCTION BY

John R. Mohler, A.M., V.M.D., Chief of Pathological Division U. S. Bureau Animal Industry.
One vol., cloth, 6 $\frac{1}{4}$ x 9 $\frac{3}{4}$, 920 pages, 260 illustrations and one colored plate, \$7.50.

It describes minutely the normal appearances of parts and organs, and contains an elaborate account of all pathological conditions and processes with which the meat inspector comes in contact. This work contains not only the common conditions, but the unusual and puzzling as well.

The discussion of the best methods of procedure with the meat of diseased animals is thorough, scientific and conservative. The chapters on methods of preservation and sterilization of meat are up-to-date and of great value to packers and meat-dealers; and the chapters on meat poisoning and adulteration are of special interest to food chemists and Boards of Health.

The work is exhaustive and authoritative because of Dr. Ostertag's extended and exceptional experience. It is a book greatly needed. The illustrations are very fine and the book altogether handsomely printed.

By far the best work yet published on the subject, and is, I believe, destined to occupy an important place in veterinary literature.—George Lytle, M.D., Local Office of the Bureau of Animal Industry of the U. S. Dept. of Agriculture, Chicago, Ill.

The work is a monumental one, and we are confident will hold its own in years to come.—*The Veterinary Journal*, London.

Catechism of the Principles of Veterinary Surgery.

By W. E. A. WYMAN, M.D.V., V.S., author of "The Clinical Diagnosis of Lameness in the Horse," "Tibio-Pero-neal Neurectomy," translator of DeBruin's "Bovine Obstetrics," etc. Cloth, size 6 x 9, 317 pages, \$3.50. Concerning this new work attention is called to the following points: 1.—It discusses the subject upon the basis of veterinary investigations. 2.—It does away with works on human pathology, histology, etc. 3.—It explains each question thoroughly both from a scientific as well as a practical point of view. 4.—It is written by one knowing the needs of the student. 5.—It deals exhaustively with a chapter on tumors, heretofore utterly neglected in veterinary pathology. 6.—The only work in English specializing the subject. 7.—The only work thoroughly taking into consideration American as well as European investigations. 8—Offering practical hints which have not appeared in print, the result of large city and country practice.

A Treatise on Epizootic Lymphangitis. By Captain W. A. PALLIN, F.R.C.V.S. Cloth, 5 $\frac{3}{4}$ x 8 $\frac{1}{2}$, 90 pages, with 17 fine full page illustrations, \$1.25 postpaid. The author has endeavored to combine his own experience with that of other writers and so attempts to give a clear and complete account of a subject about which there is little at present in English veterinary literature.

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AMERICAN VETERINARY REVIEW.

JULY, 1905.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, May 15, 1905.

TICKS SURELY TRANSMITTERS OF PIROPLASMOSES.—I am in hope that what I wrote on the etiology of Texas fever in my last chronicle, and on the biology of the causal transmitter, have not been misunderstood, as advanced to upset the tick theory and to substantiate the objections presented by Mr. Megnin. The subject did appear to me interesting, and as a chronicler I ventured to use it for my purpose, reserving to myself the right to call the attention of my readers to anything that might come under my notice in relation to the subject. My chronicle for June was scarcely mailed when the *Archiva Veterinara*, of Bucharest, comes to me with an article from Prof. C. S. Motas on the subject, and which relates to *experimental transmission of bovine piroplasmoses by ticks*.

To begin, Prof. Motas gives credit to the experiments made first of all in America by Smith, Kilborne and others, and then by Pound in Australia, Koch in Africa, Lignierés in Argentine, and which demonstrated the undoubted part played by ticks in the etiology of the disease, and proved also that the larvæ are capable of transmitting the infection.

Later on, said Motas, Weber, Kossel, Schultz and Miesner demonstrated also that unsexually mature nymphæ were also capable of infecting bovines. Therefore, it is to-day admitted by all and all over the world that ticks under their various stages of evolution are the means of transmitting bovine piroplasmose.

Prof. Motas then remarks that in Roumania the disease is also propagated by ticks, and his experiments prove it. The bovine piroplasmose of Roumania is absolutely identical to that of other countries, to the point of view of the parasite as well as to that of the clinical aspect of the disease. The ticks that are intermediate belong to the gender *Rhipicephalus annulatus*. The experiments were carried on three animals, two belonging to the grey breed, the third a Schwitz cow.

Larvæ were obtained from female adult ticks, taken from diseased animals, in various parts of the country. 50 were placed on the Schwitz cow, between 250 and 300 on the others. The experiment was made in summer; the blood of the animals had been examined several days before the experiment. The result was the same on the three animals. The disease appeared between 12 and 14 days after the infection by the larvæ, and then hæmatozoa could be found in the blood, although they were then rare. The animals recovered quickly. The *Rhipicephalus annulatus* goes through all its stages of development on the same animal. The first stage of the larvæ takes place in four days; in these conditions it is not very probable that the larvæ would be able to produce the infection, and as long as hæmatozoa cannot be found in the blood unless after 12 or 14 days. The experiments made by Prof. Motas on sheep, those of Loungsbury on dogs, in the piroplasmoses of those animals demonstrate obviously that sexually matured ticks only are able to produce infection. It is then natural that the same condition occurs in bovine piroplasmose.

* * *

DOG DISTEMPER.—For some time back I have been writing much on dog distemper and the prevention of that troublesome scourge of one of the most interesting among our domestic animals. In fact, several of my colleagues in journalism have done the same. The question which occupies their attention is that of prophylaxy by the vaccination of Dr. Physalix. For one among others I recorded the trials through which the vaccine had passed—first the experiments made at the suggestion of

the Société de Médecine Vétérinaire Pratique, which ended by the sudden withdrawing of the interested party ; then came the report of a prospective extensive test in England, followed after a long time by the report of Prof. McFadyean, a majority report which was unfavorable, and finally the minority appeal, which, without endorsing the prophylactic test, did not reject it, and recommended other experiments.

It is certain that under such circumstances, those who are looking for news will feel rather tired of seeing so much said and written and so little accomplished. But unfortunately the question, I fear, is not yet near solution. It is true the gentlemen who first worked on distemper, Lignières and Physalix, are men of high authority, and the advance that they have made of their discovery of the germ cause of the disease is one that cannot be ignored. And yet others disbelieved them. And as long as this state of affairs exists, the question of the preparation of a true vaccine remains doubtful !

* * *

Prof. Carré, the worthy assistant of Prof. Vallée, has lately given the publication of some researches which he has made on dog distemper, and which are likely to give a new direction to what has been done already.

I may be here allowed to resume the communication of Prof. Carré as he made it to the Société Centrale.

The reading of the numerous works relating to the etiology of dog distemper, the negative or unsatisfactory results of the inoculation of the various microbes described as specific agents of the disease, the comparisons of some of the lesions of this affection with those that are sometimes observed during diseases produced by ultra-microscopical microbes passing through filters, all these have decided Mr. Carré to take back again the bacteriological study of dog distemper.

At the beginning of the disease, the nasal discharge is often virulent, sometimes very much so ; inoculated in doses of two drops to a young dog, it kills him in five or six days without lesions at the point of inoculation.

Filtration through a very porous filter of discharge diluted in sterilized water, gives a liquid which, inoculated in several media, fails to cultivate, and yet if inoculated to young dogs this liquid gives rise to the development of very interesting manifestations.

After four days the temperature rises ; rapidly it reaches 40° and 40.5° and remains high for two or three days. Soon the animal has coryza, more or less severe, the eyes are running tears and pus. Inflammation spreads more or less rapidly to the dog's respiratory organs. Finally after six to ten days, handsome pustules appear on the abdomen, in the groins, the thighs, the axillæ. The discharge, first serous, becomes sero-purulent and muco-purulent. The animal looses flesh rapidly and dies with broncho-pneumonia.

* * *

This experiment has been repeated several times and always with the same results. According to the age and the breed of the dog and probably, also, according to the quantity of the virus inoculated, the progress of the disease is more or less rapid and severe and the reaction more or less active.

The rising of the temperature is never missing ; the coryza and the eruption of the pustules are frequently observed ; the fatal termination is exceptional.

If at the time of the elevation of temperature blood is taken from the animal infected with the filtrated fluid and this blood defibrinated is injected into a healthy animal, the same symptoms will be observed, viz.: elevation of temperature, coryza, pustules. But this same blood sown in various media fails to give any culture.

The conclusions of those experiments made with the greatest care by Prof. Carré, justify him in classifying the virus of dog distemper among the filtering microbes. [So far among the invisibles and as yet undiscovered.] These conclusions have since been confirmed by another biologist, Mr. F. J. Bose, who says that "the viruses which pass through filters are minimal forms of protozoa, and by its symptomatology and the charac-

ters of its lesions, distemper must be placed among the bryocytic diseases, protozoar diseases, with acute evolution, alongside variola, aphthous fever and rabies.

* * *

A NEW GENERAL ANÆSTHETIC.—While the use of general anaesthesia is not as extensive in veterinary as in human surgery, it is certain that in our day, ether and chloroform are more frequently resorted to than some years ago, and it is probable that general anaesthesia would be used still more generally if great improvements were applied in the technique of the administration of the preparations which produce it; in other words, if a method of general anaesthesia, less difficult to obtain, less dangerous and as sure of success, was found.

Rachicocainization was recently tried in human medicine, and at first seemed to realize the desired object. But some failures of importance soon set it aside. I do not know of its having been tried in veterinary medicine.

In a journal of therapeutics I find, however, the announcement of a new preparation, which, if all that is said of it is true, will replace with advantage old ether and chloroform. *Scopolamine* is of German discovery and was used as an anaesthetic in 1900 in Germany.

With it, it is claimed, no more alarming preparations, no more anxiety about respiratory or cardiac troubles. Three injections of one milligramme of scopolamine and of one centigramme of its antidote, *morphine*, are made in succession four, two, and one hour before the operation. An irresistible, very calm sleep follows which resembles in every point natural sound sleep. The patient may be awakened by shaking him, by loud talking to him, but the analgesy is complete and remains such, even a long time after awakening.

* * *

Evidently all those qualities are very tempting, and surgeons of both branches of medicine will no doubt set to work to try it.

In Germany, where nearly 1500 injections have already

been done, there are some advocates which, while acknowledging the advantages, point out also its inconveniences.

First of all, it seems that scopolamine alters very rapidly at the contact of air and light; it must be thoroughly pure and recently prepared. There are individual cases where its mode of action has shown itself variable, and on that account studies are required to establish the correct dose to use. In some cases, again, it has been necessary to assist the complete anæsthesia by the use of a few inhalations of chloroform.

Unfortunately the use of scopolamine has not been without serious danger, as 12 cases of death have been recorded: if such prove frequent, it is certain that the old methods will have to be considered as the best, even with their objections.

* * *

PROFESSIONAL ADVERTISING.—In that little sheet, known as the *Veterinary News*, which, only in its second year of life, yet seems to have accepted for motto of its publication, "better and better," I find a leading article on the "Gentle Art of Advertising," where with much spirit the rules of the Royal College of Veterinary Surgeons in relation to advertising are the object of mild criticism. Indeed, the article says: "The by-laws of the R. C. of V. S. contain some alarming restrictions as to advertising, strung together in a loose manner, and are applied at the sweet will of the powers that be, or rather put in force on occasions when it is thought safe to do so"—and so on does the article continue in showing the restrictions as scarecrows, that only "the poor trembling creature who has been hauled up before the august tribunal for advertising his penny-worth of physic has bowed down before the bogey and promised to be a good boy and not do it again;" and, again, that "summonses to answer are only sent to those offenders who, from ignorance or timidity, are likely to obey." Consequently I may infer that those who are not ignorant or timid continue to advertise, notwithstanding the regulations.

Then the writer tells how things are done in France, where "veterinarians are scientific and are recognized by the

Republic." There they advertise freely. For instance :

(1) Percheron Horses and Mares.—M. * * *, veterinary surgeon, Chevalier of the Order of Agricultural Merit, Saint Calais (Sarthe), will purchase direct from the breeder Percheron horses and mares for all purposes. Description and photographs sent on application.

(2) M. * * *, veterinary surgeon of Lusignan (Vienne), breeder of donkeys for mule breeding purposes, will purchase on commission male and female donkeys for all purposes, milch donkeys and mules.

(3) Breton Cows. Morbihan and Finistere cows and bulls, heifers and steers. Genuine Bretons. Special terms to veterinary surgeons and purchasers introduced by them. Stock warranted, payment on delivery. * * *, veterinary surgeon and professor, Agricultural School, Hennebont, Morbihan.

(4) Wether Ewes and Rams. M. * * *, veterinary surgeon, Chateau Roux (Indre), offers his services to his confrères to purchase pure-bred stud sheep.

(5) Sporting dogs, pointers, setters, laveracks and cockers, well-bred, and by well-known sires, for sale. Address M. * * *, veterinary surgeon, Saint Leonard (Haute Vienne).

(6) Do you require natural and pure Chablis? If so, apply to M. * * *, veterinary surgeon and wine grower, Chablis, Yonne.

(7) Olive Oil. M. * * *, veterinary surgeon and olive garden proprietor, Draguignan (Var), will send free to railway station, olive oil, warranted pure, at 1 franc 90 the litre. Samples sent free on application.

(8) Coffee and Rum. M. * * *, Government veterinary surgeon, Saint Denis (Island of Réunion), offers to his confrères Réunion coffee and rum at moderate prices.

All these are correct. The conclusions are evident. Advertising exists more or less in France and also in England, perhaps also in other countries. But if my memory is not wrong and unless things are changed very much, advertising as it is considered here, from a professional man, is not admitted in America, which is the country of advertising; or, if it is done by some, you can be sure that he will soon have to account for it or stop all connection with the profession and its representative, the National Association. It is certainly to be regretted

that members of an honorable profession should take advantage of their scientific title, of their honorary or governmental situation, to ask patronage. I believe that those who do join trade to their profession have a right to do it; that they can sell horses, mares, donkeys, mules, cows, ewes and rams, dogs or even wine, oil, coffee and rum, but I hold that in due respect to their profession they have no right to advertise their professional capacity. There is certainly in the laws of professional deontology an important point which in Europe remains to be reconsidered.

* * *

"MANUALE DI ANATOMIA DESCRITTIVA COMPARATA DEGLI ANIMALI DOMESTICI" is the title of a little work on the comparative descriptive anatomy of the domestic animals, which was sent to me by the author, Doctor Teresio Mongiardino, Professor of that branch at the Royal Superior Veterinary School of Turin. This is the first volume only. It gives first in an introduction a general and concise review of embryology and then enters into the consideration of the whole work. In the first part, the apparatus of locomotion, osteology, arthrolody, and myology occupy the greatest part of the book. In the second part splanchnology presents to the reader the apparatus of digestion and its annexes. The entire subject is illustrated with 210 plates, many of which are original.

Taking in consideration that probably *the* work of veterinary anatomy all over the world is Chauveau, and that it is found in all French and English speaking countries, and therefore probably also in Italian veterinary schools, it may seem that there is no necessity for such a manual as that of Dr. Mongiardino. That is a question of appreciation. But knowing as I do how students appreciate *résumé*, manual and *vade mecum*, and knowing also the good such little books do, when they are well written and correct, I must say that the "Manuale di Anatomia descrittiva" is one which I believe will render great services to the students of veterinary medicine, those of agricultural schools and also practitioners.

"DISEASES OF CATTLE."—As I entered the hall where the Société Centrale de Médecine Vétérinaire was to hold one of its last meetings, I noticed several members gathered together and looking with exclamations over a work which had been sent by one of the foreign corresponding members, my friend, Dr. D. E. Salmon. The book was the revised edition of "Diseases of Cattle," published by the Department of Agriculture. I cannot say how the whole work was praised, but only repeat what has already been told so often by those who notice those books here: "When will we have such publications?" That says much about the revised American work.

To conclude my acknowledgments of the receipt of American works, I will mention the excellent report on health of animals in Canada by Dr. J. G. Rutherford, Veterinary Director General, and the annual report of Dr. L. Van Es, State Veterinarian of North Dakota.

A. L.

THE PRACTICAL VALUE OF MALLEIN.

The REVIEW is beginning to feel satisfied with its efforts to precipitate a "row" among the members of the veterinary profession over the much mooted question as to the reliability of the glandorous serum for the various purposes for which it is employed in connection with that most insidious, loathsome, and persistent bane of our principal patient, glanders-farcy of the horse: as a diagnostic, prophylactic and curative. The striking absence of unity in professional judgment upon these points, as expressed by veterinarians through the journals, in theses presented at meetings of medical associations, and in debate, is a standing menace to our scientific progress. We are certain that it is possible to arrive at more definite conclusions concerning the value of the serum for these purposes if the men who mould professional sentiment will but take the question up in an intelligent manner, and pursue it until its irregularities are smoothed out, exaggerated claims modified, irrational condemnations displaced, and its merits and demerits made to stand boldly out by indisputable evidence and

records. One of the REVIEW'S most versatile and gifted collaborators, Dr. Schwarzkopf, in the present number, strikes a good many large nails squarely upon their heads in his reply to an article republished in a recent number of this journal from our Western contemporary. His plea for rationality in the use of mallein is characteristic and commendable. He lays particular stress upon "the man behind the syringe," claiming that he must pursue his investigations in a scientific manner, must have education, discernment, and discretion to give him the power to make reliable deductions. Medicine is an inexact science, and there are modifying circumstances in each individual case where the serum may be used; in the rôle of a diagnostic, for instance, what might be regarded as confirmative symptoms in one individual would not be considered as such in another. This, then, is where the scientific veterinarian may utilize his greater attainments and demonstrate his superiority over persons lacking such qualifications.

Without here entering into a discussion of the many-sidedness of the question, we jump to the object of these remarks, which is to impress REVIEW readers with our conviction that it is only through a liberal interchange of opinions among those who have had large experience and who have been ardent students of the investigations of the veterinary authorities of all lands, that we may hope to attain a rational guide to the exact truth. We have no other desire than to serve the profession as a means to that end, and to accomplish that object we reiterate our invitation to the profession to make this journal the medium through which the present chaotic state of the subject may receive the brightening influence of intelligent discussion.

CONNECTICUT IN LINE.

After a most persistent and stubborn fight by the Connecticut Veterinary Medical Association, a bill regulating the practice of veterinary medicine has passed both houses of the Connecticut Legislature, received the signature of the Governor, and thus become a statute law. The bill, while not all that was

asked for, nor entirely satisfactory to the profession, yet, in view of the great opposition which had to be overcome, it is a great victory for our colleagues in the Nutmeg State, and we heartily congratulate them. It is expected that the *personnel* of the Board of Examiners will be known in a few days, and the REVIEW will in the August number publish the text of the bill and the names of the veterinarians appointed to carry out its provisions.

ERRATUM.—In last month's REVIEW the statement was made on page 246, that the dates of the coming meeting of the American Veterinary Medical Association at Cleveland are August 18 to 21, which of course is an error. While we have no doubt that no one will be misled by this misstatement, since the date has been and is being constantly advertised through this journal and otherwise, we wish to impress every reader with the correct days—Tuesday, Wednesday, Thursday and Friday, August 15, 16, 17 and 18—that no one may suffer disappointment.

APROPOS of the discussion recently indulged in through the REVIEW as to the advisability of the veterinarian forming closer relationship with the stockman and agriculturist, the paper by Prof. Charles E. Marshall, of Michigan, which was read at the last annual meeting of the Michigan State Veterinary Medical Association, at Lansing, and published elsewhere in this number, is a valuable contribution to the subject, and we commend it to our readers.

AN ORIGINAL CONTRIBUTION TO THE REVIEW, entitled "The Medical Man and Who He Is: A plea as to whether the man that practices veterinary medicine is a medical man and physician, or does the term belong exclusively to the man that practices human medicine." By Ernest I. Smith, D. V. M., Cornell University, Cherry Creek, N. Y., will appear in the August number.

ORIGINAL ARTICLES.

RUPTURE OF THE PREPUBIAN TENDON IN THE PREGNANT MARE.

BY W. L. WILLIAMS, PROFESSOR OF SURGERY IN THE NEW YORK STATE VETERINARY COLLEGE, ITHACA, N. Y.

Writers on veterinary surgery and obstetrics generally include rupture of the prepubian tendon among the ventral herniae without directing special attention to this characteristic and very serious lesion.

Because of its surgical importance as well as its essential difference from other ruptures in its etiology, symptoms and morbid anatomy we venture to describe it separately, hoping thereby to direct to it the attention which we feel it deserves.

The lesion consists of a transverse rupture of the prepubian tendon immediately in front of the pubis, between the two abdominal rings, both of which are involved and, when the rupture becomes complete, obliterated, all tissues between the two openings being torn asunder.

The accident is practically confined to the mare; we have seen one instance in the cow, and have found no record of its occurrence in other animals.

So far as known the rupture takes place only in advanced pregnancy, rarely prior to the close of the tenth, usually during, or after the completion of the eleventh month.

The causes so far as determined are:

1. The increased strain upon the abdominal floor from the presence of the gravid uterus, which represents at the close of pregnancy probably 30 to 40 per cent. of the total weight of the abdominal contents.

2. Degenerative changes in the tissues of the abdominal floor, including the prepubian tendon, and closely associated with, or expressed externally by, profuse oedema of this region.

3. Very rarely, the author having known but one case, unaccompanied by oedema, there is a definite history of violence,

consisting in this one instance of the mare becoming mired in deep mud with her hind-feet, and over-exerting herself in gaining the bank of the stream, thus pulling the hind limbs forcibly backwards, and with them the pelvis, causing its chief anterior stay, the prepubian tendon, to give way.

Almost always there can be no reasonable presumption of accident, the rupture being what we may rather designate as spontaneous and is usually comparatively gradual, frequently being preceded for days by premonitory warnings.

It may be more common in draft mares than in those of lighter breed, but our experience having been largely with the former class the grounds for comparison are not conclusive. We have observed the lesion more frequently in idle mares which were well fed, and have not seen it in badly nourished animals.

The first symptom usually noticed is an extensive œdema beginning just in front of the mammary gland and extending thence forwards and backwards until it reaches from anterior pectoral region to the perineum covering the entire floor of the body for a depth of 2 to 4 inches. The œdema presents the usual clinical characters except it is possibly somewhat firmer than generally seen and somewhat more painful to the touch.

The exact relationship of the œdema to the rupture of the tendon is undetermined, our observations leading us to believe that it is an expression of serious degenerative changes which are taking place in the deeper parts. The œdema, probably affects the tendon itself at the same time and diminishes the resisting powers by forcing the fibres apart as well as weakening them directly.

The movements of the patient soon become restricted to such locomotion as is essential and this is marked by care and deliberation. The restriction of movement may be partly due to the mechanical impediment of the œdema but it appears rather to result from pain and a premonition of injury were rapid motion attempted.

This restriction of motion precedes the rupture of the tendon and is increased as the rupture proceeds.

Should the tendon remain intact until relieved of its great load through parturition the œdema quickly disappears and the parts become normal, but in many cases the tendon gives way before the foal is born and the mare succumbs, or recovering, is ruined in value and the foal generally perishes.

As the tendon begins to part between the two abdominal rings characteristic symptoms arise which serve to distinguish this from all other lesions, not alone as a rupture, but differentiating it from all other ruptures by the displacement of parts

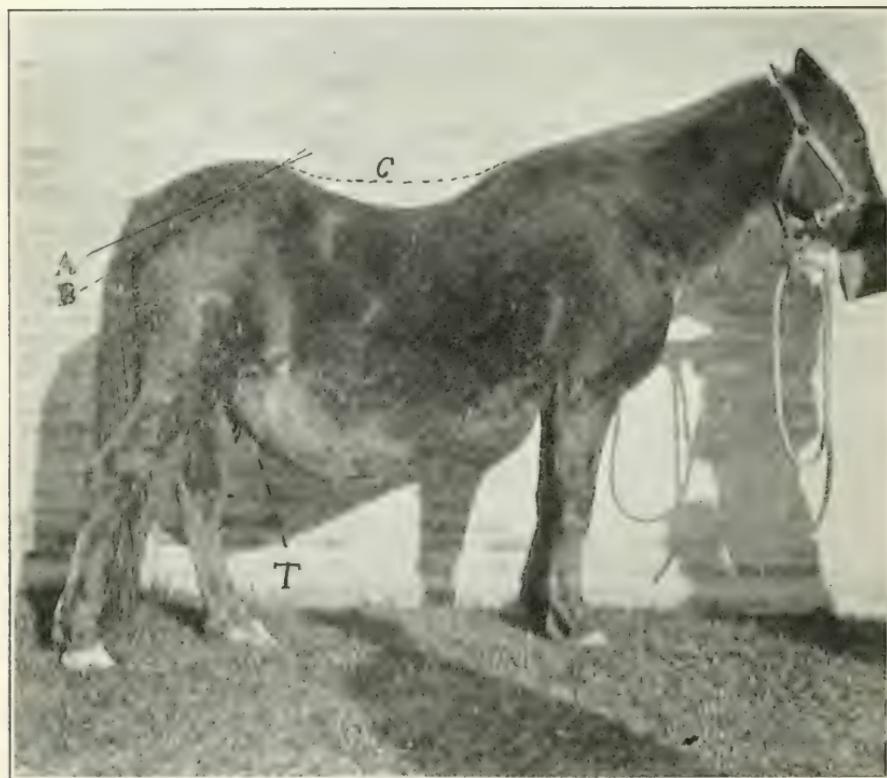


FIG. 1.—RUPTURED PREPUBIAN TENDON, "RECOVERED" CASE.

A. Line drawn through the ilial and ischial tuberosities. B Estimated position of line prior to rupture of the prepubian tendon. C. Estimated normal line of the back. T. Teat displaced downwards and forwards

or organs. The spinal column of the horse forms an arch from the first dorsal vertebra to the sacrum which is chiefly maintained by the linea alba, ending on the pubis in the prepubian tendon behind and on the sternal cartilage in front, thus acting as a powerful tie. If the prepubian tendon parts at the abdominal rings, the arch of the spine can be no longer maintained

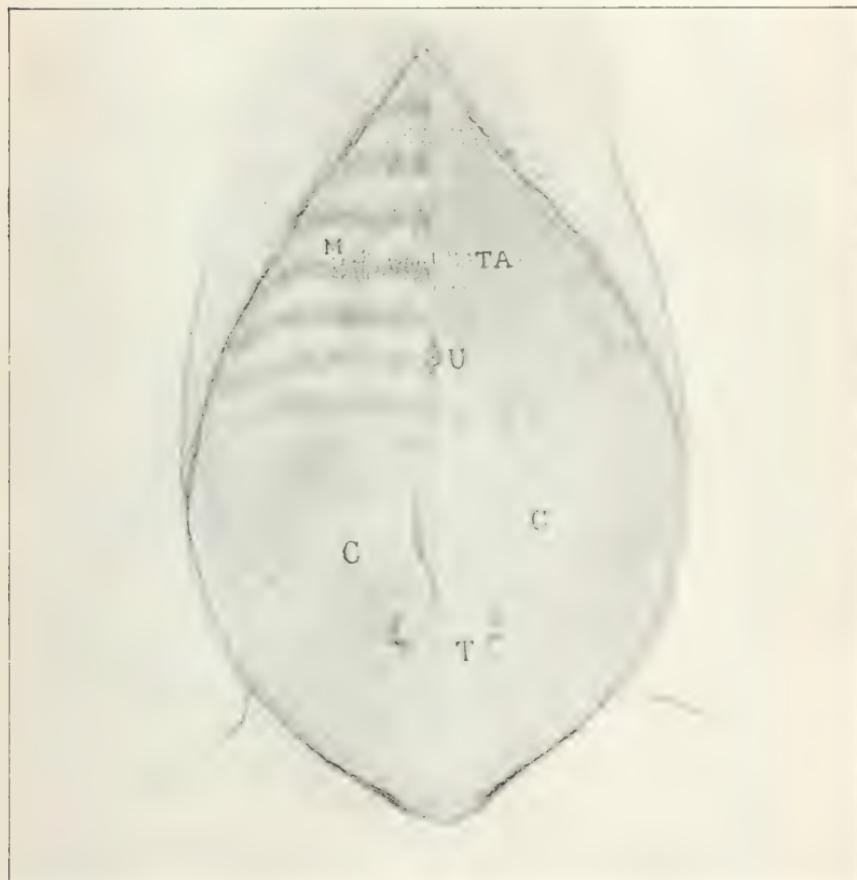


FIG. 2.—DISSECTION OF THE ABDOMINAL FLOOR OF FIG. 1, THE SKIN AND SKIN MUSCLE HAVING BEEN REMOVED.

TA. Tunica abdominalis extending barely half way from the sternum towards the pubis, having parted with the tendon and become displaced forwards. M. Straight muscle of the abdomen after the removal of the abdominal tunic. C. New formed connective tissue serving to reinforce the weakened abdominal walls where the abdominal tunic and rectus muscles are wanting. C'. Ditto, the anterior portions of which have been partly cut away, affording some suggestion of thickness. U. Umbilicus displaced forwards approximately one-half the distance from its normal position to the sternal cartilage. T. Teats displaced forwards.

and the back drops downwards, as is shown at C in Fig. 1, producing lordosis or "sway back," while the pubis becomes displaced backwards, causing the external ilial tuberosity to descend and the ischial tuberosity to become displaced upwards, decreasing the normal slant of the hip which we have estimated in Fig. 1 as B to the abnormal slant as found at A.

The rupture occurring between the abdominal rings, obliterates these and relaxes the fixation of the mammae in them, and the abdominal tunic being ruptured on the same level, while the skin becomes greatly stretched, the milk glands become greatly displaced downwards and forwards as indicated by the position of the teat at T in Figs. 1, 2 and 3, and the glands themselves become less conspicuous because of the compression upon them from the stretching of their capsule derived from the ruptured abdominal tunic.

In the illustration the displacement is comparatively mild and is usually greater, somewhat like the illustration of this condition as copied from St. Cyr by Fleming in his "Text-Book of Veterinary Obstetrics." No other form of rupture could well cause such displacement of the mammary gland, as it is firmly fixed to the abdominal ring so long as that remains intact.

The umbilicus is also necessarily displaced forwards and downwards as shown at U in Figs. 2 and 3. The rupture having involved the entire diameter of the prepubian tendon, and the abdominal tunic having given way, the rupture may extend on either side outwardly from the external side of the abdominal ring until it includes the entire abdominal floor. Through this great rent the gravid uterus and other viscera drop down upon the skin and skin muscle and pushing the abdominal tunic and musculo-tendinous abdominal floor forwards, bears the skin and skin muscle downwards until it may reach the hocks or even lower. Early in the progress of the lesion firm upward pressure in the premammary region with the hand, discloses a tense hernial touch without a distinct boundary; as the rupture progresses the hernial touch becomes more pronounced.

The downward displacement of the abdominal viscera with the backward displacement of the pubis, causes the flanks to sink in and greatly reduces the transverse diameter of the body at this point.

The skin and skin muscle tend by their elasticity to check or stop the progress of the rupture, in which they are aided somewhat by the resistance of the uterine ligaments and the mesentery, which support much of the visceral weight when the organs have become displaced downwards. In some cases in

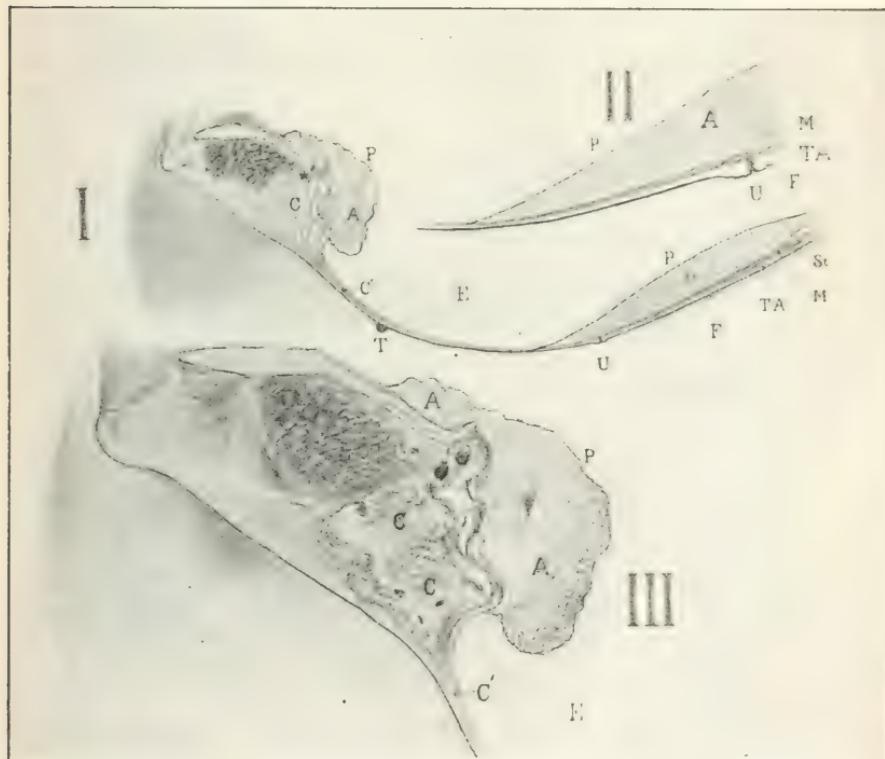


FIG. 3.

I. Sagittal section of the abdominal floor of Fig. I. II. Enlarged anterior portion of I to show detail. III. Posterior portion of I to show detail.

A. Adipose tissue. C. Fragments of the prepubic tendon extending from the os pubis to the region of the inguinal ring. C'. New formed connective tissue taking the place of the rectus abdominis muscles and abdominal tunic. P. Peritoneum resting upon a thick layer of adipose tissue, A. E. Area devoid of peritoneum, adipose tissue, rectus abdominis muscle and abdominal tunic and representing the extent of separation between the margins of the ruptured parts. St. Sternal cartilage. M. Rectus abdominis muscle. TA. Tunica abdominalis. F. Skin and skin muscle. U. Displaced umbilicus. T. Displaced teat.

our practice, the skin and its muscle did not suffice to stay the progress of the rupture, but gave way, causing eventration and necessitating immediate destruction of the patient.

In those very rare instances where violence has played an essential part there need be no premonitory œdema, the symptoms appear very suddenly, the tumor is large, the pain intense, the expression anxious, the body bedewed with cold sweat, the respiration hurried, the pulse rapid and weak and the patient tends to quickly collapse from shock or hæmorrhage.

The character and extent of the lesions, with the reparative efforts in a surviving case, are well shown in Figs. 2 and 3, in which it is seen that the peritoneum, prepubian tendon and abdominal tunic have all parted just anterior to the pubis and passed forwards about half way to the sternum, dragging with them for a part of the way the teats. Posterior to these and occupying the area previously filled by them, is an extensive expansion of dense connective tissue, C', which has served instead of the ruptured parts.

In Fig. 3 it is shown that the subperitoneal fat, A, does not invade the ruptured area, E, but seems to depend for its formation upon the presence of the peritoneum itself.

The prognosis of complete rupture of the prepubian tendon is very grave, most mares, along with their foals, perishing before the conclusion of the pregnancy during which the rupture occurred.

If parturition is safely passed the animal is likely thereafter to breed without danger or difficulty, but is so unsightly that her value for this purpose is seriously diminished, or she may do ordinary slow work, but here the unsightliness becomes still more serious and few persons are willing to use such an animal. The foal in the uterus at the time of the rupture usually perishes, but if the mare survive, succeeding foals are born with the same safety as though the lesion did not exist.

When a threatened or beginning rupture is promptly recognized and appropriate measures for prevention or relief applied, the prognosis is highly favorable.

The opinion of Fleming that extensive œdema of the abdominal floor in pregnant mares is unimportant and will quickly disappear after parturition with little or no attention, has led to serious disaster in our hands, when followed.

Œdema in advanced pregnancy in the mare is a serious condition, and should be regarded as a precursor of rupture of the prepubian tendon, which calls for prompt and energetic handling. If left without attention many of the mares will succumb from rupture; if proper attention is rendered the danger will be almost wholly averted.

In the handling of threatened rupture of the prepubian tendon, mechanical support of the greatly overloaded and weakened abdominal floor should receive our first consideration. When-



FIG. 4.

Emergency bandage for rupture of the prepubian tendon, illustrating method of so crossing the bandage tails as to secure adaptation to the form of the abdomen.

ever extensive œdema along the floor of the abdomen occurs in a mare far advanced in pregnancy, and which cannot clearly be referred to other causes, we advise the immediate application of an abdominal bandage of canvas or other strong material. The bandage should be constructed with 8 or 10 strong buckles and billets and fitted to the oval form of the abdomen by means of a gore placed in the centre of the canvas. We do not at all times have the required time for properly constructing the bandage, but in order to avert immediately threatening disaster an emergency, many-tailed bandage should be quickly applied. In order to adapt this to the oval of the abdomen the tails should be crossed so that the most posterior lower tail shall be tied to one of the most anterior upper tails, as is shown in Fig. 4, and the remaining tails united upon a similar plan as indicated in Fig. 4. The spine and the position where the ends of the bandages meet should be amply padded to avoid pressure necrosis of the skin from the buckles or knots, and should be carefully readjusted daily or as often as conditions may dictate.

In applying the emergency bandage to cases where the tendon has already parted or seems very imminent, it is important to get it quite tight, and in order to facilitate this it is best to tie a solid loop on each upper tail through which the lower tails may run as through a pulley. A given tail cannot be properly tightened at the first effort, but one after another tightened as well as convenient at the first tying, and as soon as all are fastened go back to the first ones and tie them over again and continue the process until the desired support for the abdominal floor is secured, and the great weight of the viscera lifted from the abdominal floor and largely transferred to the spine through the bandage. The decrease of the weight of the abdominal viscera is also of very great importance. We should lessen the weight of the digestive viscera by withdrawing all bulky food and replacing it with limited quantities of concentrated aliment. We might hurry the unloading of the intestinal tract by the aid of small doses of eserine sulphate, half grain every half hour.

If the tendon has parted the induction of premature labor should receive careful consideration.

As a rule the foal perishes unless aid is given. Even under close watching the uterine contractions go on unobserved and cause the death of the foal through separation of the placentæ before adequate expulsive force is brought into play, most of which was destroyed when the abdominal floor gave way, leaving the uterus almost alone to expel the fœtus. It therefore seems desirable to anticipate this danger to the fœtus by bringing about artificial delivery not later than the completion of the 11th month and by close attention bring about a prompt delivery in a way to best safeguard the life of the fœtus. The premature delivery is best effected by carefully dilating the os uteri with the hand, grasping, and, if necessary, cording the parts presenting, and applying moderate traction to compensate for the lost expulsive power of the abdominal muscles. It is to be remembered that it is best to have the patient in lateral recumbency during delivery as this raises the fœtus approximately to a level with the pelvic inlet, while in the standing position the fœtus drops down below the pelvis and rests upon inert parts.

If premature delivery is not decided upon the mare should be closely watched and prompt aid given on the first sign of labor.

After delivery the bandage may be removed at once and the case dismissed if the tendon has not ruptured ; if it has ruptured the bandage should be readjusted and retained until such time as we may believe that the ruptured tissues have healed and the weakened abdominal floor has been reënforced by the new formation of connective tissue as indicated at C' in Fig. 3.

The mare may be retained merely until the foal is ready to wean, if she is not desired in her condition ; but she may readily be retained permanently as a brood mare with reasonable assurance that thereafter she will foal unaided, or she may be used at moderate work without noticeable discomfort.

In the very severe cases, where the skin and skin muscles are giving way so that eventration is imminent, or where accompanied by shock and serious internal haemorrhages, the mare should be promptly destroyed, after performing Cæsarian section.

THE VETERINARIAN IN HIS RELATION TO THE HYGIENE AND SANITATION OF THE FARM.

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A Paper presented to the Annual Meeting of the Michigan State Veterinary Medical Association, Lansing, February, 1905.

It may not be in my province to appear before you this evening for the purpose of advocating greater attention or a closer relationship to those conditions existing on the farm, which make for health and soundness in domestic animals. The position which I occupy brings me, on the one hand, in intimate relation with the veterinarian, and on the other, with the farmer. I serve both, and from my point of view, am able to detect a manifest need of a unity of these two factors, both of whom have many common interests. In a recent review of the literature covering the hygienic phase of breeding, I have been able to note how, elsewhere, the veterinarians have united with breeders and stockmen in the studies of various questions important to both. Such united effort and harmonious coöperation in this country, so far as I am able to ascertain, is wanting, and veterinarians find it difficult to define and establish very definitely their rights and privileges. They seem constantly beset with troubles and obstacles, which are apparently sometimes insurmountable in our present condition of organized society. The stockman assumes the attitude of antagonism toward the veterinarian, thinking, I suppose, that his is a professional graft, without allowing the farmer his due. I am led to think, therefore, that this state of affairs is in no small part brought about by an unsympathetic relation existing between the veterinarian and his agricultural patron.

An apology perhaps may be necessary in raising this subject, but I assure you that I find my excuses in the fact that I have heard so much from both sides; I have considered it so often; and I have seen the need of coöoperative sympathy so

many times. Accordingly, it is not strange that I am led to suggest some adjustment in hygienic and similar matters; and, further, to state that it is my opinion that the veterinarian is in a better position, or may put himself in a better position, to offer necessary advice and counsel than any one else, in all of those relations which he may bear towards the farmer, and especially those matters which pertain to stock-raising. It is a common matter to hear that the practice of the veterinarian will be interferred with by a too close relationship existing between the farmer and himself concerning hygiene and sanitary practices, but this seems chimerical. The veterinarian, on the one hand, contends that if certain procedures could be simplified sufficiently for the farmer, the former would suffer professionally and financially because the farmer would not call upon him for his aid; and, on the other hand, the farmer contends that all the veterinarian seeks is his professional fee.

It is patent that the veterinarian is not sufficiently foresighted in this matter, and the farmer is altogether too suspicious, to avoid this state of affairs. There can be no doubt that before the veterinarian lies a very broad field in action and influence. By giving simple facts and treatment to the farmer, the veterinarian, in return for his services, secures the confidence and good-will of the farmer, which will return many-fold to him. Physicians have learned this, for they are not so zealous about professional rights, and they maintain that diseases are better handled from the standpoint of prevention or prophylaxis than from that of cure, and that simple remedies and treatment belong to the home and not necessarily to the professional class. They believe, too, that they are progressing more rapidly by so viewing the situation in a broad and charitable manner, than by urging professional claims or technicalities to that extent which will necessitate a call from a physician. As an illustration, it does not seem that veterinarians would suffer in the least if they could recommend the use of the simple device for milk fever, which has already come before your notice, rather than to attempt to confuse the farmer to the extent that professional treatment be

required. Professional trickery is practiced in good faith, but the layman, although conscious of it, never knows when it applies to him. The farmer, however, is shrewd enough to ascertain sooner or later whether the veterinarian has been working for his interests or simply making a professional bluff. It is advisable to be honest at all times, perfectly frank when it is possible, for in the end benefits will accrue. Therefore, instead of trying to hoodwink the farmer into the necessity of treatment for his animals, it appears that it would be far better to make the veterinarian so essential to success that the matter of treatment of animals will come naturally and satisfactorily, for treatment will always be required, whether desirable or not.

It must be said for the veterinarian that he has much to contend with in the matter of treatment of domestic animals, because it is not a financial gain to the farmer to pay fifteen dollars for treatment of a ten dollar pig. On the other hand, the farmer would learn to utilize professional services in such a manner as to place his relation with the veterinarian upon a business basis, the same as he has learned to assume in treating with an architect whom he has engaged in the construction of some building. In the architect he recognizes skilled services, which he himself does not possess, and he has learned by experience that what the architect gives him he is obliged to pay for. The sooner, therefore, that the farmer learns that in the veterinarian he is securing services which stand for so much money value, and that he is simply doing his part in enabling society to maintain a professional man of this character, the sooner he will be in a position to fully appreciate the services rendered. He should further realize that every professional man has expended much time and money in acquiring his professional skill, and that after securing the skill, he should not be asked to give it to society without proper remuneration. When each party is able to see the correct position of the other, then it will be possible to get together in closer union. It is not this relationship, however, that I wish to dwell upon to such an extent as to consume all my time, but, rather, to delineate a scheme and

the factors of a scheme which will help to establish harmony.

The field that I should like to emphasize, and one in which I believe the veterinarian can be made very useful, and, in fact, as time goes on, can become indispensable to the farmer, is that of farm hygiene and sanitation, as they pertain to the management and health of domestic animals. It extends farther, because the management of health is fundamental to financial success on the part of the farmer. This means that the veterinarian should be conversant in matters of breeding, rearing, and feeding animals, as he is conversant with diseases and their treatment. He should not only be able to approach it from the veterinarian's standpoint, which should be thoroughly scientific, but should be well posted from the standpoint of a successful stock-grower. These two sides exist, and will always exist, because what the scientist advocates is not always the most desirable thing for the farmer to practice. This is neither the fault of the scientist nor the fault of the farmer; it is the failure of both to provide a middle man, and this middle man should be the veterinarian who can take the middle ground and make himself a necessary and useful consultant. In addition to the studies already mentioned, in which the veterinarian can post himself, and keep thoroughly posted, there are the questions of water supply, stabling, ventilation, drainage, and various other factors which enter in the handling of livestock. So far as I have been able to ascertain, at the present time the veterinarian and the farmer do not come together in these matters, and if the farmer asks advice of the veterinarian, he never feels certain that the latter's advice is wholesome and desirable; or, in other words, founded upon up-to-date practices. This comes from a lack of preparation on the part of the veterinarian who would doubtless be in a better position to handle the farmer with reference to diseases, sanitation and hygiene if he could make an early start from the side of prevention in the foregoing matters of breeding, rearing, and feeding, rather than from the side of cure, and also would be just as able to secure his fees in consultation over the proper location for a well, as

he would to secure them after an animal has died from drinking the water from the well.

Let us look at the matter a little more closely, and by more detailed analysis of the situation. Not one farmer in ten knows the ins-and-outs in breeding. What knowledge he has is that which has been picked up haphazard from his neighbors, who know little more, and probably less than he does, but possess more positive notions about things. He little realizes that in the matter of breeding there is a hygienic transmission of points, as well as a physical contour transmission, in which he is so much interested. He has been unable to study the methods in detail of great breeders. He either omits one essential in breeding in order to arrive at another, or falls flat by failing in both. The results, therefore, are usually disastrous. If the farmer knows that a certain veterinarian is a man of repute, is scientifically and practically familiar with breeding, can give him knowledge where he fails, can advise him in a useful, intelligent manner, he will not hesitate to pay that veterinarian a fee which he could not possibly secure by the treatment of one or two animals, when the farmer is discouraged and almost ready to go out of business. The farmer, in seeking advice, will soon learn whether this advice is wholesome, or not, and whether he is getting anything from it. If such advice is proving satisfactory, has won money for him, and improved his conditions, that farmer will recommend the veterinarian to his neighbors, who, in turn, will be willing to seek in detail the counsel which has served so beneficially in one case. It is true, that in the matter of breeding, this advice may be peddled from one neighbor to another, and the veterinarian would receive nothing from what he has given so freely to one stock-grower, yet the conditions of one farmer are not the conditions of another, and the advice to one man will not necessarily be that which should be given to the next. There are always new questions arising concerning developments in breeding processes, which must be answered, and answered by an expert. This expert may be the veterinarian. There is just as much danger in scattering methods of

treatment and diagnosis as anything pertaining to breeding. Many farmers need and want an overseer. It will not do for the veterinarian to pose for a breeder or an expert in breeding unless he can back it up with evidence so overwhelming that the farmer is obliged to accept it. This means study and persistence on the part of the veterinarian. In other words, it is the advice of a family physician. This should be the function of the veterinarian.

Rearing of animals also means more than the ordinary mechanical handling which is so commonly indulged in by the ignorant farmer. Of five men put in charge of animals, it would be exceptional to find one capable of handling them. In short, the experiences of farmers who raise many animals demonstrate that herdsman true to their calling are rare. The veterinarian who is making a success of his profession knows, or should know, how to handle animals; for although he is not actually engaged in the management of sound animals, he is constantly brought in contact with sick animals as patients, and these demand more of his skill in handling than would sound ones; consequently, if he is able to successfully handle sick animals, he should be sufficiently familiar with sound ones to give good advice, and advice that may be applied.

Feeding is a large subject to treat. It is one that is discussed to a great extent at the present time at our institute colleges, and universities, and it requires close study to keep in actual touch with its progress. The farmer usually does not. Many a man who has attempted to raise animals, has failed largely because of his inability to handle the feeding question. He may have the material on the farm, raise it successfully, provide it in abundance, but when it comes to giving it to the animals, he is a complete failure. To feed successfully, one must be familiar with the values of every crop grown, and the bearing of each crop upon the food ration, as well as the cost of the crop produced. He must be able to use rations which yield good results, not only to the herd as a whole, but be actually competent to adapt rations to suit individual idiosyncrasies. He must be

able to run over a list of animal foods, select those which will be least expensive to the farmer, and if the farmer does not possess them, know where to procure them, how much they will cost, and how much they will return to the purchaser in the end. Inasmuch as our animal foods keep increasing year by year, in varieties, and inasmuch as chemical analyses of these foods are made, it means that the veterinarian, if he is to be posted, not by mere whim or fancy regarding food, but upon actual values of foods as they are represented, must work hard. While he may not be possessed of much experience in the raising of crops, it would not come amiss if he should be able to indicate at times what crops are adapted to certain soils. The family physician does this; the veterinarian could occupy a wider range.

Again there is the subject of stable construction,—what the floor should be, the character of the lighting, what should be the nature of the stalls, and the system of ventilation. Sound advice concerning these matters will always be welcome, because no farmer is desirous of spending hundreds of dollars without some knowledge of what he is doing or trying to do. Usually he would feel better satisfied if he could talk the new building over with some one, its arrangements, its contents, etc., provided he had the utmost faith in that person, and he would be perfectly willing to pay a fair price for this service.

The water supply, the location of the barn, elevation of the ground, the drainage, the handling of contagious diseases, isolation, etc., all should aim at control, rather than at treatment. The farmer who has succeeded in securing good counsel from his veterinarian concerning proper rearing, stabling, feeding, and other matters, will be not only willing, but anxious to have the same veterinarian on hand if there is any treating in sickness. He has learned to have confidence in his opinions, he has learned to depend upon him, and when it comes to sickness, it is the same man that he seeks to help him out. If he fails to restore health, he rests assured that the veterinarian has done all in his power to help him; he has stood by him in every

other respect, even if he has failed in bringing health out of sickness.

It is this field, so crudely indicated, it seems possible to open up; and the veterinarian, if he can in one way or another secure the coöperation of the farmer, can do more good by warding off disease than by treating it, in the case of domestic animals. A competent veterinarian will be able to produce more satisfaction, will establish himself more firmly in the heart of the farmer through such efforts than through any efforts in treatment of diseased animals. It is this confidence that makes one veterinarian better than another. Of course, veterinarians who live in cities will not be interested in the discussion of the relationships existing between farmers and veterinarians, but those living in small towns or in country places, depend largely upon the farmer for their practice. The pertinency of what I have said may be illustrated by considering many of our old quack horse-doctors, without diplomas, without training, who have maintained the confidence of the farmers by their common sense, by their interest, and by their help; who have increased their sphere of influence, if it may be so called, in their efforts to do their best for the farmers. I do not refer to the ordinary quack, who is a parasite on society, but to those good old souls who are willing to go miles to help their neighbor in an emergency because their neighbor may want them to go, without remuneration, unless this neighbor is willing to repay them in some way or other. It is such men who win out, who gain the confidence of the farmers, and, without diplomas, without training, have a firmer hold upon the farmers than a host of veterinarians, well trained, and some of them experienced, could possibly have.

IT is announced in the press dispatches from the West that Japan intends to send several representatives to study closely the horses shown at the Lewis and Clark Exposition in Portland this fall. It is also stated that China will be officially represented in this regard. Much hope is held out that the Island Empire may make large purchases of breeding animals.

DISEASES PREVALENT IN THE PHILIPPINE ARCHIPELAGO.

BY M. J. MYERS, VETERINARIAN, BOARD OF HEALTH, MANILA, P. I.

We have in these islands almost every known disease that animals are heir to.

Many obstacles that exist at present will have to be overcome before a successful campaign can be conducted against them. The native is not much in favor of reforms, especially when it becomes necessary to destroy animals that he may possess. My experience of two years has been that instead of help from them they will do everything in their power to hinder our work. During the Spanish days when an animal was found affected with some communicable disease it was sent to the country and usually turned at large, thereby coming in contact with the animals of that section. By such methods it is only reasonable to expect that infection of the whole Archipelago will follow.

The diseases below enumerated are found in every section of the islands.

Glanders—farcy.

Surra.

Rinderpest.

Foot-and-mouth disease.

Hæmorrhagic septicæmia.

Hog cholera and swine plague.

Measles of the pig.

Lymphangitis contagioso.

Cholera of fowls, etc.

We also have other infectious diseases common in the United States, viz.: Tetanus, strangles, pneumonias, anthrax, Texas fever, etc.

Practically all of the energy that has been expended toward eradicating them has been directed against rinderpest, while the others received but passing notice. To me, at

least, some of them are equally as destructive as rinderpest.

The cases of surra, glanders, foot-and-mouth disease, and lymphangitis contagioso can be counted in the thousands.

Glanders in these islands is so common that one would not speak of how many cases are to be found in a certain locality, but of what percentage of the whole equine race is affected. Under the present conditions this disease is becoming more prevalent from year to year; it will require energetic and systematic measures to ever suppress or control it. Glanders in man is not an uncommon happening here.

Surra is also very prevalent, and now has such a foothold that I am of the opinion that all animals (wild and domestic) would have to be destroyed in order to eradicate it entirely. I have had several lots of horses and mules under observation in which the mortality reached 100 per cent. Imported animals appear to be more susceptible to surra than those that are natives of this country. In some few cases among the equine race there is a spontaneous healing, but they are very rare after they have become infected. Cattle and carabao do not seem to be inconvenienced a great deal on account of the trypanosoma in the circulation, for they will work every day and thrive as if under normal conditions; for this reason cattle and carabao are especially dangerous, as they can spread the infection to a large number of animals and themselves not even be suspected.

Rinderpest is present at all times, but the outbreaks since the epizoötic one of 1900 have been of an enzoötic nature. The serum treatment has been used for the purpose of producing an immunity in animals that have been only exposed to the disease, and also in animals that are actually diseased (showing clinical symptoms) as a curative agent; in the latter case it is given in large doses of 200 or 300 c.c. The serum inoculations have been but partially successful, so it is difficult to say just what amount of benefit has been obtained from the serum treatment towards producing an immunity. Rinderpest is very prevalent in China, and as nearly all of the cattle consumed in these islands are imported from that country,

rinderpest is introduced with nearly every ship-load of animals.

Foot-and-mouth disease is of little importance here when compared with some of the other diseases, so very little attention is given to it.

Hog cholera, swine plague and measles are found on a post-mortem examination daily at the abattoir in Manila, all of which are condemned and cremated. There have been a few reports from the provinces where hogs were dying in large numbers. An investigation was made and the disease found to be cholera. Hog cholera here seems to be of a sporadic nature.

Lymphangitis contagioso, is very prevalent, but usually yields to proper treatment, although some cases persist for months. The rate of mortality is very low if the animal receives treatment. This disease may be mistaken for the cutaneous form of glanders (farcy), but one soon learns to differentiate one from the other. Surgical treatment is usually all that is required.

Texas fever made its appearance in a small shipment of cattle coming from the United States, which originated from north of the Federal Quarantine Line; all died with but one exception a few days after landing, as a result of an inoculation of 1 c.c. of blood from a China steer (Texas fever immune). All importations of cattle to these islands should come from a country that is infested with ticks (*Boophilus annulatus* or *Boophilus australis*), as all of this country is infested with the *Boophilus australis*.

Tuberculosis is practically unknown among animals in these islands, but is very common in man. The animals here are not kept confined in close stables as in the States. If I remember correctly, there was but one case of tuberculosis found on post-mortem at the abattoir since American occupation.

Actinomycosis was found in a bull imported from the United States for breeding purposes, and died shortly after arrival.

Anthrax has been reported from the north central portion of the Island of Luzon.

FOOT ROT IN SHEEP.

By S. H. BAUMAN, V. S., SHELDON, IOWA.

Read before the Meeting of the Iowa State V. M. A., Jan. 25-26, 1905.

In selecting this subject my object is simply to give you a few observations I have made in actual practice on a very troublesome disease among sheep, and one that when it makes its appearance on the farms under the methods that have usually been in vogue, seems very difficult to eradicate, much more so than scab, owing to its persistency to keep recurring where the farmers are positive they have fully gotten rid of it, and a farm once infected seems to retain this infection for years.

There seems to be a great tendency to confuse it with thrush, mud fever, closing of biflex gland, bruises, punctures, due to pricks from hedge thorns, especially after trimming the hedge, and punctures from closely trimmed brushland are all classed as foot rot by some writers in the agricultural papers, but they are simply mistaken.

Low and swampy ground has nothing to do with true foot rot, as some of the worst cases seem to be on the dryest and most rolling ground, where water was procured from tanks. The first symptom noticed is lameness in one front foot, at first not very marked, but gradually increasing and in many cases extending to all the feet, but usually the front feet are the ones most seriously affected. It is very common to see half or even a larger percentage of a flock affected in many stages, some only slightly lame, others grazing while on their knees, and keeping this position much, if not all the time. One peculiar thing is the severity of the case and the remarkably good condition the affected animal will keep in while in the worst stages of the disease. I do not mean to say that there is no shrinkage of flesh, but what surprises me is that there is not more. The disease will continue in a flock during one entire season, and from one year to another, with little or no abatement. Warm and damp weather seem the most favorable for its development, but think this is due to the action of magots and other parasites that prey

on the diseased parts during the time that flies are prevalent.

There is a very offensive and characteristic odor that is a true diagnostic symptom in recognizing this disease. A person can easily detect this odor without examination, and can pronounce with safety cause of trouble in flock.

In the earlier stages there is moisture between the toes, extending from heel up into the hair in front of foot, and to a casual observer resembles quite closely thrush in a horse. The microorganism that causes the trouble seems to burrow through the sole and forms cells between the sensitive portion and bottom of the hoof, leaving in some cases quite pronounced chambers of broken loose sole. It much resembles the action of a borer in a fruit tree in the work it does.

After the disease runs for a time the foot very often swells around the coronary zone. The moisture disappears and in its place we have a discharge of a thin starchy fluid, evidently pus. The appearance and discharge seem to be of a fistulous nature, somewhat resembling the condition we find in a quittor, and indicates a necrotic area of considerable extent, and when not treated seems to keep on burrowing without any disposition to abate.

Foot rot is contagious by inoculation and the germ is very tenacious and hard to get rid of, and lives quite a long time when protected from severe weather. What the germ is I do not pretend to say, but think it is of the same nature as fistula or poll-evil or perhaps the *Bacillus necrosis*. The disease is readily transmissible from one animal to another, by coming in contact with an affected animal, by being driven over a public road where affected sheep have been driven, by an affected sheep getting through fence into a neighboring pasture, or by buying a ram that had been affected and supposed to have been cured, and probably the worst outbreak that came under my observation was by using a pair of hoof trimmers that had been used on affected sheep, which were then used on a healthy flock. In a very short time every sheep in the flock contracted the disease. Many owners become frightened or do not care to take

chances, so they treat the sheep until they show no lameness, and then sell or ship them where they are almost sure to break out again, and in this manner the disease is spread into new fields and innocent parties suffer. The tendency among farmers is to unload on someone else and handle other stock for a time. There is practically no danger from death, but loss is due to shrinkage. Farmers are very much inclined to say nothing about having the disease, so a person in practice has very little chance to investigate, but it would surprise many of us were we to know the extent of the disease. Were our laws different so that a veterinary inspector could have the power to investigate and order proper treatment, it would be but a short time until foot rot and many other contagious diseases could be eradicated. The main trouble is with the "don't care" farmers. They will do nothing unless they are compelled, and must be watched until they follow instructions or it will not be done.

As to treatment, the only sure way to eradicate the disease in my experience is hand dipping. Do not rely on tank dipping. The first step is to go over the whole flock and trim the feet of every sheep quite closely, and the diseased ones in particular; cut out the sole until you find every sinew and particle of detached sole or wall. Use heroic measures, and never mind a little blood should it be necessary to cut into the sensitive tissues. Almost any antiseptic will cure if all the diseased parts are exposed and properly treated. I have known parties to use undiluted muriatic acid, 90 per cent., solution carbolic acid, turpentine, coal oil or a saturated solution of sulphate of copper, without proper trimming, with practically no results. My method is to trim very close, as advised above, hand dip with quite a strong antiseptic and repeat every day for several days. Separate the diseased from the well ones in a pasture not contaminated and watch closely. The diseased ones should be gone over every day until all signs of lameness and disease have disappeared. In these cases think I have had best success with a 20 per cent. solution of formalin, then covering the feet with tar and placing a pack of cotton and a bandage over the feet.

To eradicate the disease the owner must give up everything else and tend to the sheep, and he will succeed. I would also prohibit turning sheep into pastures where diseased sheep had run for ten months or even one year. Haul out all manure and some of the clay from the yards and scatter over the farm land. Keep out all sheep and scatter quicklime and other antiseptics over the lots. Be sure to have the ends of wool clipped from sides where feet come in contact while they lie down, and use a good dip over these parts. Burn all clippings of wool and hoofs. Commence early and persist and you will succeed. The period of incubation seems to be very short. I know of one case reported to me in which parties claim disease developed in five days after exposure. In talking with a sheep man from the West he said he had seen the disease in the highest altitudes of the Rocky Mountains, so location and climate seem to have nothing to do with true foot rot.

"A veterinary surgeon cannot practice without the REVIEW."—(*J. T. Nattress, V. S., Delavan, Illinois.*)

WHAT WILL NOT A COW SWALLOW.—The following newspaper clipping is forwarded to the REVIEW by Dr. H. J. Herrington, Dunlap, Iowa, who vouches for the facts stated in it: "A cow belonging to Ed Lehan and Ben Rose, who occupy the Lehan farm north of town, exhibited signs of sickness about the first of March. In a short time Dr. Herrington, the veterinarian, was called, and after a diagnosis of the case, pronounced the animal suffering with some foreign substance in the stomach. A short time ago the cow died, and at the request of Dr. Herrington, who was unable to be present, Mr. Rose made an examination of the stomach, which disclosed a miniature rolling mill. The following articles were preserved for exhibition and turned over to Dr. Herrington: Five rivets ranging in size from one-fourth of an inch to an inch and one-fourth, three rivet washers, four shingle nails, one small screw-eye, four ordinary carpet tacks, and two fence staples averaging about one and one-fourth inches in length. In addition to this Mr. Rose found a quantity of solder which had been melted from tin cans and which the cow had lapped up with ashes and salt, and this accounts for the other articles in the stomach, as well."

NOTES ON STRONGYLUS CONTORTUS.

BY LOUIS A. KLEIN, V. M. D., PROFESSOR OF VETERINARY SCIENCE IN
CLEMSON COLLEGE, S. C., AND STATE VETERINARIAN OF
SOUTH CAROLINA.

In the course of an investigation into several outbreaks of verminous gastritis in calves and young cattle, one case was met with in which the parasites (*Strongylus contortus*) were discovered in an unusual location. In this animal, a heifer 18 months old, only a few of the worms were found in the abomasum and a few in the duodenum, but in the cæcum there were a large number. None of the worms were attached to the mucous membrane. Those in the abomasum and duodenum were lying in the thick, tenacious mucus which covered the surface of the membrane, while those in the cæcum were floating in the dark-brown watery fluid with which that reservoir was filled. The abomasum and small intestines were entirely empty. The animal had been too weak to stand for four days previous to death, and during this time there had prevailed a severe diarrhoea. From these circumstances, it would appear that the animal had reached such a low condition that the blood did not afford sufficient nourishment for the worms and they were leaving the body—those in the cæcum and duodenum being on their way out, and those in the abomasum having detached themselves from the mucous membrane preparatory to leaving.

This case shows that it is not always sufficient to look in the abomasum for the worms. It also shows that it is not always safe to exclude the worms as the cause of the diseased condition merely because they are few in number.

Friedberger and Fröhner¹ say that unless the autopsy is made soon after death the worms may not be found, as they are quickly destroyed by digestion in the stomach of the cadaver. In the case referred to above the animal had been dead 30 hours when the examination was made, and yet numerous worms were found unharmed by the digestive fluids. The circumstances in this case would seem to justify the conclusion that had the life

functions continued a little while longer, the worms would have all passed out of the stomach and intestines and this hypothesis would also explain the absence of the worms from animals that had apparently died of the disease.

Friedberger and Fröhner¹ and Neumann², referring especially to the disease in sheep, and Law³, writing of *Strongylus contortus* in ruminants in general, state that the disease usually appears in the spring and summer, but in all the cases observed by the writer in South Carolina the first symptoms did not appear until late in August and early in September and the deaths occurred in October, November and December. The cases reported by Falsetter, Knight⁴ and Stiles⁵ in Texas also occurred in the same seasons of the year.

Only the young cattle suffered from the parasite—those under $1\frac{1}{2}$ years old which were not suckling or being fed by hand. None of the grown cattle exhibited any of the symptoms of the disease, although on most of the infested farms, they used the same pastures during the day and, in some cases, the same stalls at night. This absence of visible symptoms, however, can not be accepted as positive evidence that the adult cattle are not infested with the worms, for there is reason to believe that grown cattle can carry the parasite in considerable numbers without apparently suffering from its presence. This point must always be considered in treating an infested herd.

The coal-tar creosote treatment recommended by Stiles⁵ was advised and proved quite efficacious. The drug was prescribed in the following doses, shaken up in a pint of water: calves 3 to 8 months old, 25 to 50 minims; yearlings, 75 minims; 1 to $1\frac{1}{2}$ years old, 2 drachms. The owners were advised to give the medicine to all the young cattle, the exposed as well as the sick, and to withhold feed for 12 hours before and water for 6 hours after giving the dose. The treatment was to be given once a week for 3 or 4 weeks and the animals were to be kept out of the infected pastures and to have clean drinking water.

On one farm, where all the young cattle but one had been

lost for three years and where ten had died last fall, the medicine was given to twelve "long-yearlings" which had been in the infected pasture since spring. They were in poor condition, thin and hide-bound, but all improved rapidly after the treatment was given four times.

On another farm, where eleven calves had died during the fall, the treatment was given to twenty-one calves, several of which exhibited pronounced symptoms of the disease—œdematous swelling in the sublingual region and diarrhoea—and all showed loss of condition. All recovered, the treatment being given four times.

Three affected heifers on another farm, where two yearlings had been lost from the disease, also received the treatment and recovered.

The treatment was recommended to the owners of two other herds of cattle in which the presence of the parasite was established by post-mortem examination, but no report as to the application of the treatment or the results obtained has been received from them.

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1. Friedberger and Fröhner. Pathology and Therapeutics of the Domestic Animals (Zuill's translation), Vol. I, pp. 269-270.
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3. Law, Prof. J. Text-Book of Veterinary Medicine, Vol. V, p. 254.
4. Knight, Dr. W. A. AMERICAN VETERINARY REVIEW, Vol. XXVII, pp. 522-525.
5. Stiles, Dr. Ch. Wardell. Seventeenth Annual Report, Bureau of Animal Industry, p. 371.

PRESIDENT KNOWLES, of the A. V. M. A., is quite sanguine that the attendance at the Cleveland meeting will be the largest in the history of the Association. More members and visitors were present at St. Louis than at any former meeting, many of them being attracted, no doubt, by the added interest of the World's Fair. Should this year's gathering exceed that of 1904 it will indeed mean interest and progress. The programme justifies the best attendance ever.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

OUTBREAK IN SHEEP.

By A. W. WHITEHOUSE, V. S., Laramie, Wyoming.

I send some notes of work done on a disease which attacked a band of sheep running near Laramie. The investigation resulted negatively, and I forward the description in the hope that some one may have seen a similar outbreak and have succeeded in determining the cause.

The band affected numbered about 2,500, all very good ewes, mostly two and three years old, with a sprinkling of old ones; they were in capital condition. They had wintered on the range about seven miles northwest of Laramie, getting snow most of the time instead of water, and being fed baled hay during storms. This range is covered with grass, there being very few weeds, a little greasewood, and very little other brush.

During the whole of March the weather was mild (for this climate), light snow storms alternating with thaws, the frost was out of the ground, and on the 15th there was grass from one to two inches high, and a few early spring weeds peeping up.

On March 15 7 sheep died, on March 16 6, on March 17 1, on March 18 3; total, 17. After this there were no more deaths or sickness, though the sheep were not moved.

I only saw one sick one alive, and with the exception of the herder, an unusually intelligent Mexican, no one had the opportunity of observing the others during life.

This herder stated that when he first noticed them they would be dropping back from the bunch as the rest fed along, and that they would seldom live many minutes after he reached them. He said that they acted like a man with pneumonia, and also described convulsions. All were fat, and those he had opened were pregnant two-year-olds, the lungs being affected, the bronchi and trachea full of mucus, and the other organs, particularly the kidneys, apparently healthy.

I was called in on March 17, together with Dr. A. L. Bailey, the Federal stock inspector. On arrival at the camp we found about 10 skinned carcasses there. The pelts and external mus-

cular appearances were in all cases normal. Opened three.

No. 1.—Ewe, two years old, very fat, pregnant. Lungs, dark purplish red; appeared consolidated through entire area—one slight adhesion on right side. Bronchi, bright scarlet, and contained white frothy mucus. Trachea, scarlet and inflamed, gradually improving towards larynx, which was normal; much of the white frothy mucus. Pericardium filled with dark red fluid. Small intestines, one or two slight areas of inflammation. Kidneys broken down; acute nephritis; air under capsule of one; urine tubes dry and white, probably occluded, in this one. Bladder empty and slightly inflamed. Spleen, dark reddish brown externally, grumous. Gall-bladder empty, orange colored, distended with gas. Faeces normal to soft. Paunch normal. Blood coagulates normally. From this case we preserved part of a lung, the heart, kidneys and spleen.

No. 2.—Ewe, two years old, fat, pregnant. Lungs, small areas of hepatization; areas of scarlet congestion, shading to purple; areas apparently healthy. Both lungs about equally affected. Bronchi filled with white frothy mucus, scarlet. Kidneys apparently normal. Bladder empty. Spleen normal. Digestive tract normal. Gall-bladder empty, gaseous, yellowish. From this case we preserved the kidneys.

No. 3.—Ewe, two years old, very fat, pregnant. Both lungs severely congested, but not extensively hepatized. Bronchi scarlet and full of white frothy mucus. Some nephritis. Gall-bladder full and normal. From this case we preserved the paunch.

We then drove to where the bunch was feeding and were fortunate enough to see one alive. When at some little distance we saw a sheep separated by about a quarter of a mile from the bunch and coughing most violently, with its whole body. Before we reached it it was lying down, and did not cough again while we observed it. It proved to be a two-year-old fat ewe, and went into convulsions as we arrived, having a most violent spasm of the diaphragm, shaking the whole body, and audible at a distance of several feet. This spasm accompanied expiration, and occurred about 25 to the minute. The ewe very nearly died at this time. Heart fluttering and irregular. Crowing sound in upper third of lungs, bubbling râle in middle third, silence in lower third; great bubbling in larynx, considerable in trachea. Bled her at nose and ear. Left her to drive through the bunch. On our return in, say, half an hour she seemed much better, but on laying her down the spasm re-

turned, though less violently than before. Temperature 104° F. Her breathing in the intervals of spasm was distressed, but not markedly so.

This sheep never rejoined the herd, but her carcass was not found. No doubt she died that night. The herder stated that when we saw her she had been sick two hours, longer than any of the others had lived.

On March 19 I again went to camp and opened all the other carcasses. All showed frothy mucus in the bronchi except one, which was full of clear mucus. All showed scarlet stain of bronchi and most showed scarlet stain of lower third of trachea. All bladders were empty. Found no more diseased kidneys. The brains of two appeared healthy. Examined no other brains. All gall-bladders contained bile, but they were not full. Took blood from the heart of one, and mucus mixed with blood from the bronchi of another, and forwarded these to the Bureau of Animal Industry for microscopic and bacterial examination.

Dr. Bailey forwarded to the Kansas City Veterinary College the heart, part of the lung, the kidneys and spleen of No. 1 and the kidneys of No. 2. These were preserved in a 40 per cent. formaldehyde solution. The results were as follows:

"Dr. Kinsley has completed examination of specimens received from you and finds the blood free from any known pathogenic microorganisms, neither did he find any such organisms in the solid tissues. The tissues from case No. 1 showed most marked lesions, the kidney and spleen being in a state of acute inflammation, the heart only showing cloudy swelling. The kidney in case No. 2 showed very little modification other than some congestion. Specimens from the solid tissues as well as the blood specimens were carefully examined for microbes and, as stated before, no pathogenic organisms were found."

The paunch of No. 3 was chemically examined by Prof. H. S. Knight, Chemist of the University of Wyoming. He reports:

"Examination and analysis of contents of a sheep's stomach received March 19.—Stomach seems to be normal. Arsenic, no test. Saltpetre, no test. Alkaloids, no test. Made a life test with a guinea-pig, also for alkaloids, and got negative results. HENRY S. KNIGHT, *Chemist.*"

Profs. B. C. Buffum, of the Experiment Station, and Aven Nelson, State Botanist, examined the balance of the contents of this paunch and found only grasses and harmless weeds.

The blood and mucus sent to Washington also yielded negative results. Dr. Salmon reports:

"A bacteriological examination and cultural test of this blood revealed the presence of numerous bacilli, cocci and saprophytic bacteria, which were plated and obtained in pure culture. Inoculations were made with these cultures into various experimental animals, but with negative results, indicating that the cause of the disease was not located in the blood. From the symptoms and post-mortem lesions you have described it seems probable that the sheep died of cerebritis, which is not infrequently observed in very fat ewes at the lambing season. It may result from food of a too stimulating nature, or an excess of coarse innutritious foodstuffs. Grazing the flock early in the morning while hoarfrost is still on the ground, is also said to be a cause, and accounts for this affection usually breaking out among sheep in the early spring and late fall, when they are thriving and in good condition."

The common factors in the disease appear to be the short duration (about two hours), the invariable fatality, the bronchitis with frothy mucus, the fact that though the appearance of the lungs vary in different cases each lung in the same case is equally affected, and the empty bladders. These last are accounted for by the convulsions.

A curious feature is that the sheep died for four days, after which no cases occurred, though the band remained on the same grazing ground till two weeks ago. There are no reports of similar losses from other camps.

In poisoning by the Death Camas (*Zygadenus venenosus*), as described in Bulletin 26, U. S. Dept. of Ag., Div. of Botany, "The Stock Poisoning Plants of Montana," the spasms and labored breathing are described, and also the congestion and hepatization of the lungs, but the Death Camas does not appear above ground here till the first or second week in May, and the bulbs are four or five inches underground. The stem is very weak, and it seems incredible that the sheep should be able to pull them up at that time of year.

Every trail when followed up seems to lead into a *cul-de-sac*.

AZOTURIA.

By ROBERT DICKSON, D. V. S., Seabright, N. J.

On Thursday, March 23, at 7 A. M., a gray mare, 15.2 hands high, five years old, was working in a team, and on their way to work about two miles from home the driver noticed her acting peculiarly, knuckling and faltering in her gait, and began

to sweat profusely. He turned back for home, and I was telephoned for. When I arrived found her up, trembling and nervous. Took her temperature, 102; respiration, 24; pulse, 56. I put her on salines, sent my slings over and told them to try and get her to stand in them; but right after I left she got down. I did not give ball, as is my custom, neither did I catheterize her. As I had seen so many die, I thought to do something different and let nature take its course.

Friday, 24th, I called and found her still down and thrashing, head all bruised and cut; temperature, 104; respiration, 60; pulse, 80. I applied mustard to her back and loins, and found no change.

Saturday, 25th, still down and thrashing; kept up same treatment; temperature, 103; respiration, 40; pulse, 60; ravenous appetite and very thirsty; no urine nor faeces had passed to date.

Sunday, 26th, the fourth day, appeared to be worse; added sedatives along with salines; temperature, 102; respiration, 60; pulse, 40; still kept thrashing; head and shoulders all cut and bruised, so that she could not see out of one eye.

Monday, 27th, at 7 A. M., she made a plunge and struggled to get up on her feet, just as the drivers in the stable were preparing to go out with their teams. They saw her and all ran to help her to get up and steadied her while she was on her feet. They got her in the slings as quickly as possible; she urinated and passed faeces and began to eat. When I arrived I found her very weak and trembling. This was at 9 A. M. Front legs were swollen to twice their normal size; temperature, 102; respiration, 60; pulse, 40. I gave her a stimulant and put the men to rub her dry and bathe the legs and do her up with cold bandages.

Tuesday, 28th, found her still weak and trembling, but doing well under the conditions; temperature, 103; respiration, 24; pulse, 60.

Wednesday, 29th, found her still improving, eating well, urine and faeces regular; temperature, 102; respiration, 20; pulse, 56.

Thursday, 30th, recovering fast, appetite good, urine and faeces regular; temperature, 102; respiration, 12; pulse, 50. Was taken out of the sling, walked about fifty feet and put back in the slings again. She acted well, with the exception of her near fore-leg, which she did not use so well, as it was stiff and stocked, with considerable oedema, and looked like a case of purpura, and I treated her accordingly.

Friday, 31st, still improving; temperature, $101\frac{1}{2}$; respiration,

tion, 12; pulse, 50. Front leg still swollen and very large at knee; had them rubbed down one way well with cold lotions and walked for five minutes. Seeing no bad effects, left her out of the slings.

Saturday, April 1st, temperature, respiration and pulse normal. Eating well, urine and faeces regular; ordered her turned out in a paddock and taken in at night. Did not see her then for five days, and on my next visit they were giving her light exercise in harness. I discharged her as cured.

I saw this mare a month after I discharged her, and she was working in team and carting heavy loads and appeared to be in perfect health.

PROTRUSION OF INTESTINES FOLLOWING CASTRATION.*

By JOHN THOMPSON, Iowa.

In June, 1904, I was asked by a stock raiser near this place to castrate some colts, and among them was a large, fine appearing three-year-old horse of trotting breed, that had been used some in the stud the previous spring. The horse mentioned was led out first, an ordinary casting harness applied, and secured in the usual way. The scrotal and inguinal regions were, to all appearances and manipulations, normal, testicles and spermatic cords well developed. The testicles, and probably about three inches of each cord, were removed by the emasculator. The only unusual occurrence noticed during operation was that there was no retraction of cords at time of scrotal incision and following the manipulations of testicles, nor the slightest struggle on the part of the animal. The horse on being released immediately jumped to his feet, pranced about, apparently as gay as ever, and was led back and tied in his stall—a single stall at one end of stable.

About one hour later, having finished other work, we returned to the barn to find the horse in great agony, struggling violently, balanced partly on his back with one hind foot forced through the barn wall, and profuse perspiration all over his body. Closer investigation revealed a mass of small intestines, about the size of a small bucket, protruding through each scrotal incision. The protruded mass had a congested and tumefied appearance, having been bruised by the animal during his struggles, and was covered with all sorts of dirt from the stable floor. Immediate destruction was advised and carried into effect. According to the owner a scrotal hernia had at no time existed.

* Read before the Meeting of the Iowa State V. M. A., Jan. 25-26, 1905.

COLLINSONIA (HARDHACK) POISONING.

By G. E. CORWIN, JR., D. V. S., Lakeville, Conn.

One evening in the spring (April) I was called to attend a cow which was in great agony, suffering with the following symptoms: head swollen, especially marked about the eyes and throat; tremulous condition of the whole body; a profuse discharge, which was watery, from the eyes and mouth; intense itching of all parts of the body; mucous membrane of the eyes, nose, mouth and vagina, congested; frequent micturition; temperature 103.4° F.; lienteric diarrhoea, and in a semi-delirious condition.

At first it looked as though one might diagnose it as malignant catarrh, but surrounding conditions and history of the case put one on the guard.

The cow had been turned out to pasture for the first time, and returned to the stable apparently all right, until it was noticed that she wouldn't put her head through the stantion. Upon examination it was found that her head was swollen, and following this came the quick development of the other symptoms.

I examined the cow carefully, and by questioning got a very good history.

Did not give any diagnosis, but told the owner that I would call early next morning and left the following treatment: Potassi nitratis, 3 ij, in a pint of water, and had her bathed every two hours with a solution of acid boracic and fl. ext. belladonna folia, in warm water.

On my arrival next morning I found the cow in as good condition as she ever was, chewing her cud and abatement of all symptoms.

A little trip about the pasture revealed the presence of the new sprouts of hardhack which, as could be seen, had been nipped off, and no doubt the cow was the victim of enough to cause a general poisoning from its irritant effects.

NOTE.—Common names of collinsonia, other than hardhack: stone-root, house-weed, horse-balm, heal-all, etc.

POTASSIUM IODIDE IN A CASE OF NASAL OBSTRUCTION.*

By JOHN THOMPSON, Iowa.

A twelve-year-old, 1400-pound, chestnut gelding, used for heavy work, is brought for treatment. History shows that dif-

* Read before the Meeting of the Iowa State V. M. A., Jan. 25-26, 1905.

ficulty in respiration on severe exertion had been noticed some two weeks previously, a roaring sound at both inspiration and expiration. This condition had increased in severity day by day, and at this time, though being kept in stable and fed well, emaciation was considerable. The horse can be made to walk only at a very slow gait, and even when quiet loud roaring sounds accompany each respiratory act. Examination of the head proves one nasal passage to be partially, and the other completely obstructed. Anterior parts of nasal chambers show nothing abnormal. With the aid of a mouth speculum an attempt is made to examine posteriorly.

Animal struggles some, falls to floor and suffocation seems threatened. He soon, however, regains standing position, apparently no worse for his tumble. Tracheotomy is advised, but this step objected to by owner, he having no faith in the case, nor in me perhaps. Prescribed pot. iodide in two drachm doses three times a day given in moist feed, and lost sight of case.

Later I have learned that owner in order to get rid of animal gave it to a farmer on the same day, to take out of town and destroy. The latter took the prescription with the horse and commenced treatment. Within one week slight improvement was said to be detected. The treatment being continued at intervals for over six weeks resulted in thorough recovery.

CYSTIC MAMMARY TUMOR.

By HERMANN KOCK, D. V. S., Brooklyn, N. Y.

The patient, a fox terrier, was first seen Sept. 3, 1903. The tumor then was about the size of a pigeon's egg. Advised removal, but client (a young lady) could not be induced to have it done. So prescribed kali iodidi, crystal iodine, and adeps, the ointment to be applied several times daily.

The next time I saw patient was June 20, 1904. Tumor was as large as a goose's egg and suppurating. Ordered wound flushed with hot water, and injections of

hydrogen peroxide; wound healing very readily.



The last time I saw patient was April 14, 1905. Animal was then 15 years old, emaciated, debilitated, totally blind from cataracts in both eyes, and tumor of enormous size, as seen in photos. Patient chloroformed.

Tumor weighed 1 pound $12\frac{1}{2}$ ounces, and had small cysts all through it. Animal had never been bred, and the only injury received was a deep barbwire cut in the region of the mammary gland when two years old.

A DEVICE TO PREVENT DOGS INTERFERING WITH DRESSINGS.

By DRs. WHITE and PLASKETT, Nashville, Tenn.

We send you a photograph of fox-hound dog which suffered from fracture of the femur at the junction of its middle and up-



per thirds. The parts were immobilized by the application of a heavy plaster cast. A wooden collar was applied to prevent tearing of bandage, and dog made good recovery.

STERILIZED AIR TREATMENT FOR PARTURIENT PARESIS.

By E. C. THURSTON D. V. S., Sydney, N. S.

With reference to treatment of parturient paresis by inflating the udder with atmospheric air, the following may be of interest. On May 17 I was called to North Sydney Mines, a distance of 16 miles; before leaving I put the current number of

the REVIEW in my pocket to read on the trip across the harbor ; becoming very much interested in the case reports of paresis therein cited, I made up my mind to follow the line of treatment at the first opportunity.

On my return I received a message by telephone to one of our largest dairies. The proprietor told me he had a valuable Guernsey cow which, to use his own expression, was "down and out with paralysis," at the same time saying he did not think anything could be done as he had lost two cows a short time previous under similar circumstances. However, I went out to see the patient, which I treated in a similar manner to the case reported by Dr. Dalrymple, using the bulb from my thermo-cautery with a teat syphon instead of a hypodermic canula.

The following morning the patient was up and feeding—apparently as well as ever. Needless to say the owner was most agreeably surprised, and considered the treatment little short of miraculous.

AMONG the distinguished foreigners who will honor the A. V. M. A. by presenting papers at the coming meeting are Drs. Robert Ostertag, of Germany; K. Tsuno, of Japan; and James Desmond, of Australia.

AMONG other valuable contributions to the 1905 meeting of the A. V. M. A. will be one of particular interest by Dr. Leonard Pearson on "The Vaccination of Cattle against Tuberculosis." Dr. Pearson and his staff have done sufficient work along this line to justify him in taking a definite position. In addition to this a particularly instructive exhibit will be made by Pearson and Gilliland of specimens showing the different lesions of tuberculosis in domestic animals, and, above all, of specimens showing the results of vaccination against this disease.

THE HORSE—"HERE'S TO HIM."—"Here's to that bundle of sentient nerves, with the heart of a woman, the eye of a gazelle, the courage of a gladiator, the docility of a slave, the proud carriage of a king, and the blind obedience of a soldier ; the companion of the desert plain, that turns the moist furrows in the spring in order that all the world may have abundant harvest, that furnishes the sport of kings, that with blazing eye and distended nostril fearlessly leads our greatest generals through carnage and renown, whose blood forms one of the ingredients that go to make the ink in which all history is written, and who finally, in black trappings, pulls the humblest of us to the newly sodded threshold of eternity."

EXTRACTS FROM EXCHANGES.

ITALIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

NECROSIS OF THE CARTILAGE OF PROLONGATION OF THE SCAPULA IN A BOVINE [*Dr. Pietro Ghisleni*].—Described more as a sequelæ of diseases of the withers, specially in solipeds, necrosis does also present itself as localized and limited to itself as a consequence of direct traumatism. A four-year-old cow received a severe injury on the supero-anterior border of the right shoulder, which gave rise to a swelling warm and painful. This has existed for some twenty days and lately from the centre of the swelling a slight quantity of pus escapes. The introduction of a small probe into the opening from which the pus oozes out, reveals a fistulous tract, running towards the cervical angle of the cartilage, which is felt rough and grating. There is also a small subcutaneous tract running forward toward the superior third of the anterior border of the bone. As there is no difficulty in the function of locomotion, no other diagnosis can be made but abscess of the cervical angle of the scapula with necrosis of the corresponding part of the cartilage. The animal was secured, the fistulous tract freely opened, a large piece of necrosed cartilage was removed, all infiltrated tissue surrounding was cut away, curetting of all diseased tissues made and antiseptic dressing with drainage, etc., applied. In five and twenty days after the cow had entirely recovered. Conclusions of the author: Once more is demonstrated the advantage of the radical mode of treatment of similar injuries rather than to resort to the injection of irritating or cauterizing substances, which are so frequently followed by failures.—(*Clinica Veterinaria*, January, 1905.)

SUPRA-COTYLOID LUXATION, DISEASED HEAD OF THE RIGHT FEMUR, FRACTURE OF THE ILIUM AND OF THE COSTAL CARTILAGES OF THE CORRESPONDING SIDE IN A FILLY [*Dr. Pietro Ghisleni*].—A very interesting history of an animal which had injured herself by being cast in day time while at liberty in her stall and was left unobserved struggling for some time. When removed from her position she showed she was very lame, had bruises and wounds on the right hind-leg. She was left in her box, but as no improvement was observed the author

was consulted to say if recovery was possible, if the animal could ever do slow work, or if she could be used for breeding. As it was three months since the animal had been hurt, it was rather late to inquire. At any rate, a minute examination soon settled the question. The deformity, the lameness, the atrophy of the muscles, the presence of a large callous by rectal examination, the detection of slight motion within the rectum of the fragments of bone, etc., all were sufficient to give an unfavorable opinion, and the filly was killed. At the post-mortem the characteristic lesions of the injury of the coxo-femoral joint, the presence of the osseous deposits on the femur, on the ilium, around the cortyloid cavity, the callous on the ribs, all confirmed the diagnosis of lesions which had been made out, described and illustrated.—(*Clinica Veterinaria, Jan. and Feb., 1905.*)

EXTENSIVE LACERATED WOUND OF THE WHOLE RIGHT AXILLARY REGION, INVOLVING ALSO PART OF THE EXTENSOR MUSCLES OF THE FOREARM OF THE LEG OF THE SAME SIDE IN A COW, WITH RECOVERY [Dr. Pietro Ghisleni].—Frightened by her keeper, while she was turned out, a cow started running and attempted to jump over the door which had an iron lance. She failed in her attempt and caught on the iron lance, was finally gotten loose, bleeding profusely. Were her injuries curable? was the question the author had to settle. When the animal was seen the hæmorrhage had stopped, but her condition was serious. There was excessive subcutaneous emphysema, which made the animal look monstrous. The sternal region was the seat of a large wound, from which hung two large flaps of skin and muscle. The right anterior leg, held in flexion, was resting on the ground by the anterior face of the foot. There was a wound which from the posterior border of the shoulder extending forward into the axilla to join the point of the scapulo-humeral joint and which allowed the introduction of the two fists between the leg and the lateral wall of the chest. In fact, the hand and half of the forearm could be introduced into the axilla, the leg being almost entirely severed from the trunk. There was also a laceration of the extensors of the forearm, from the external to the internal side of the region. The hand within the axilla could feel another applied in this last wound, the extensor muscles being lacerated by an irregularly horizontal cut, right across their length and some four fingers about the cubitus. The prognosis was doubtful. The treatment consisted in removing all loose torn structures, suture of the edges of the wound after being cut smooth

and even, the application of drainage tubes to facilitate the injection of repeated washing with creolin solution at 3 per cent. The animal was kept in slings for a certain length of time and after 39 days of treatment was considered as cured, having only a long cicatricial mark as evidence of her severe injury.—(*Clinica Veterinaria*, February, 1905.)

A CASE OF PRIMARY TUBERCULOSIS OF THE MAMMÆ [Dr. Giuseppe d'Alessandro].—On October 25th the author was called to a farm where several cows were kept. One was shown to him. A handsome Dutch animal, aged eight years, with a splendid coat of hair, the skin supple and fine, the temperature 38.2° , and the functions, digestive and respiratory, normal. But the posterior quarters of the mammae, the right one specially, are swollen. On palpation they feel hard, their sensibility is increased, and they give the sensation of being nodulous and bossilated. It is a month since this condition was noticed, and notwithstanding the milk has not changed in aspect, it looks quite normal, but the quantity has diminished. The supra-mammary lymphatic glands are swollen, hard and suspicious of tubercular nature. Yet the exploration of all the other glands is negative and nothing can be found in the submaxillary, the parotids, prescapular, axillary, prepectorals, or even retro-pharyngeal and sublumbar, as far as they can be examined; all seem to be perfectly normal. The bacteriological examination of the milk reveals the condition of affairs, and by the various methods used by the author the bacillus of Koch is revealed. The cow is evidently suffering with tuberculosis. She is slaughtered. At the most minute examination not the slightest alteration could be found except those of the mammae. All the lymphatic glands were found normal, the lungs, the pleura, the pericardium, peritoneum, meninges, synovial membranes, genito-urinary apparatus, everything was normal. The right mammae only was the seat of the lesions detected by external examination. The glandular lobes were greyish, of lardaceous aspect. Softening had taken place already in some. For a few tubercles the central caseous degeneration had taken place, in others calcification. The mammary tissue had lost its elasticity and presented on section a condition of softening, with more or less caseous degeneration in the centre. From all these conditions of the udder and the absence of lesions in any other organs the author considers that there is no possible doubt as to the correctness of his diagnosis.—(*Clinica Veterinaria*, February, 1905).

LACERATED WOUND OF THE ENTIRE LEFT AXILLARY REGION IN A MARE, WITH PARTIAL SEPARATION OF THE CORRESPONDING SHOULDER AND ARM FROM THE THORAX—RECOVERY [Dr. Pietro Ghisleni].—This mare, turned loose in a field, while trying to jump a ditch fell upon the point of a piece of wood and inflicted upon herself a large wound of the left axilla. Seen some fifteen minutes after the accident, the animal was found with a laceration which from a few centimetres of the point of the shoulder extended along the line of the axilla as far back as the posterior border of the scapula. Air was sucking into the cellular tissue at each movement of the animal and the leg was held in marked adduction. A veterinarian was called, who after disinfection and arrest of the haemorrhage had attempted by sutures to keep the parts together, but with the irritability of the patient, its repeated motions, the stitches had given away, and, notwithstanding the greatest care, the case was not progressing. The author was called. He found the solution of continuity with lacerated borders and an abundant suppuration. The leg was carried freely in adduction at each motion. The animal was then cast and the parts thoroughly washed. It was then that it was observed that the axilla was so far injured that almost the whole leg was separated from the trunk. After a minute examination of the parts, taking in consideration the impossibility of bringing the edges of the parts together and that of keeping them together, the author prescribed the injection, within the cavity of the separated leg, of a liquid blistering preparation and a friction of the same mixture over the whole surface of the shoulder and of the arm of the left side, with the double object of giving rise to a uniform process of inflammation over the two surfaces of the injured region (inner face of the shoulder and inner face of the axilla) and again to develop in that region a cause of immobilization which would facilitate the cicatrization by suppuration. The animal was sold some weeks after and at a later date was reported doing well and with prospect of complete recovery.—(*Clinica Veterinaria, March, 1905*).

EPITHELIOMA OF THE PENIS IN A HORSE [Dr. Pietro Ghisleni].—This horse for two years has had an enlargement at the inferior face of the glans penis, which gradually has grown, become ulcerated, and finally interfered with urination which was frequently accompanied with haemorrhage. Attempt has been made to remove the growth with a ligature without success. And now there is an enormous paraphymosis; a

very large cauliflower mass protruding from the sheath prevents the retraction of the penis. The organ above it is infiltrated, œdematos and hangs out of the sheath. When the animal is to micturate, he stretches with his hind-legs apart, the neck is extended and the back arched, and after a few minutes the urine escapes from several openings. The diagnosis of malignant tumor imposes an operation, which is performed May 24th. Amputation of the whole diseased mass with the ecraseur of Chassaignac. It weighed 147 grammes. The animal was returned to the owner the next day. Towards the end of July he was brought back to the writer for lameness and for diseased withers. An examination of the penis showed that there was a return of the old trouble with fistulous tracts, and escape of abundant suppuration of bad aspect. The owner gave the horse up and he was destroyed. At the post-mortem examination of the penis, the preputial sac was found with its walls like fibrous tissue and the end of the penis was representing a large cauliflower, with five openings communicating with an urethra more or less diseased. The microscopic examination of the tumor proved it to be cancer of the epithelial covering of the penis.—(*Clinica Veterinaria, March, 1905.*)

FIBROMAS IN MULES AND HORSES [Dr. Felice Cinotti].—These are taken among many others observed by the author:
Case I.—A mule, six years of age, has a growth on the superior lid of the right eye. Three months before it made its appearance, then very small, hard, and only recently it has begun to enlarge rapidly. To-day it prevents the eye from opening and the lid covers much of the globe. The external aspect is bosselated; the skin is rosy, the eyelashes are few. The mass is hard, with the skin intimately adherent. It is movable on the tarsal cartilage, which is not involved in the diseased process. The diagnosis of fibroma of the upper eyelid is made, and an operation is prescribed. The animal cast, secured and the parts thoroughly disinfected, an incision is made from the internal commissure of the eye, and running upwards and inwards so as to form with the median line an angle of 50 degrees. A second incision almost parallel to it is made, starting from the palpebral border on the other side of the tumor. A third is made parallel and close to the palpebral border, unites the lower extremity of the first two ones. And finally a fourth parallel to this passes immediately behind and close to the tumor, which is thus isolated. These manipulations allow the dissection of the growth, which is carefully made to save the tarsal cartilage. The flap of

skin surrounded by the first, second, and fourth incisions is dissected and brought to the border of the eyelid, to which it is sewed. An aseptic dressing was put on and in 10 days union by first intention was complete. *Case II* is that of a fibrous tumor which he removed from another mule and which was situated in the right inguinal region. Its extraction was performed with difficulty. *Case III*, similar to the preceding even in the location of the growth, but in a horse this time. The tumor was also in the right inguinal region. The growth of the eyelid weighed 26 grammes, that of the groin of the mule 205, that of the last case 320.—(*Il Nuovo Ercolani*, March, 1905.)

BELGIAN REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

TUBERCULOSIS OF THE UPPER JAW IN A HEIFER—PSEUDO-PERICARDITIS [*Prof. Lienaux*].—Tuberculosis of the maxillary bones have not been described, and on that account this case offers a special interest. The case was that of a two-year-old heifer, which is in very poor condition. Her previous history is unknown. Her pulse is quick, the mucous membranes are pale, the jugular veins are largely filled and raised in the jugular groove, suggesting the suspicion of pericarditis with effusion. There is no venous pulse, no swelling. The subglossal and guttural lymphatic glands are swollen and harder than usual. Temperature remains about 38.5° . The nose is wider; the mouth being open the anterior part of the palate seems swollen, regularly convex; the incisive pad is also deformed and enlarged. The mucous membrane that covers the bone is adherent to it, has lost its smooth aspect; it is red, ulcerated superficially and shows here and there yellowish granulations. The respiration is accelerated and loud; there is frequent cough and discharge from both nostrils of muco-purulent and rather abundant fluid. The visible portion of the floor of the nasal cavities shows that it is bulging also and has an ulceration on each side. Nothing abnormal is detected at the examination of the chest; lungs and heart seem normal. After eluding the possible diagnosis of actinomycosis and of actinobacillosis, the suspected diagnosis of tuberculosis is made certain by the examination of the tissue and discharge from the ulceration of the

mouth and by the use of tuberculin. At the post-mortem it was found that in the chest the anterior lobes of the heart and the parts corresponding to the heart are occupied with masses of tubercles. In sawing the head across the condition of the incisive bones is exposed. The substance of the bone contained a characteristic yellowish grey tissue.—(*Annales de Bruxelles*, Jan., 1905).

ZONA IN THE DOG [*Prof. Hibrant*].—In human medicine this name is used to designate the circular eczema or herpes zoster. Its definition can be given : an herpetic eruption on the tract of a sensitive nerve, in connection with a neuralgia of the same. This affection is clinically characterized by three manifestations : (1) fever and its symptoms, (2) pain, indicated by violent itching, (3) an eruption of vesico-pustules lasting some ten days and disappearing afterwards. Zona may appear on the course of all sensitive nerves, and, according to the diseased region, various names have been given, such as sciatic zona, crural, lumbo-abdominal, etc. The etiology is little known. Its cause may be a neuritis or a neuralgia of rhumatoid nature. It may be infectious. It is an analogous affection that the author believes he has seen in a dog. It presented circular plates of eczema on the left flank, and extending under the belly. This region was the seat of a violent itching sensation, as the dog would bite the diseased region and bark furiously. Repeated applications of a zinc preparation did not give much relief. To calm the local irritation, which was always very great, ointment of belladonna was resorted to. Baths and anthelmintic treatment were prescribed, but all in vain. A short time after, the dog was noticed biting the right flank as he had done the left : there was no lesion yet, and the itching feeling could only be attributed to a primary nervous trouble. Two days later an eruption of vesico-pustules was observed on the right flank, covering patches exactly similar to those of the left side : the itching had preceded their apparition. It is then that the author had the idea to assimilate the troubles to the lumbo-abdominal of man. The treatment consisted in local applications of salicylate of methyl, in an alcoholic solution, with slightly irritating frictions on the vertebral column. From that time the disease improved ; the lesions of the left side healed first, that of the right followed ; but it is hard to affirm that the treatment had a real curative effect.—(*Annales de Bruxelles*, January, 1905).

SURGICAL TREATMENT OF PARAPHYMOSES IN THE HORSE.

[*Prof. Hendricks*.]—A stallion had a paraphymosis of long standing, resulting from a blow the brutal driver had inflicted on the penis while it was in erection. Treated unsuccessfully in several ways, there remained a large tumor which prevented the penis from returning to its position ; it remained hanging swollen and more or less ulcerated. The removal of the tumor was necessary, as amputation of the penis would ruin the value of the stallion. The following method was resorted to, so as to avoid the possibility of tearing of stitches, had the growth been simply dissected out and the skin sewed up. Using a curved needle, carrying an open notch at the eye, the Professor introduced it from backwards forwards through the base of the tumor. He then passed a strong thread through the eye of the needle and drew it through backwards, leaving the thread through the tract of the needle. Reintroducing the instrument a little distance off and again from backwards forwards, he took the end of the thread hanging, passed it through the notch of the instrument and drew it through the tract of the needle, and he thus continued until he had surrounded the base of the tumor with a series of loops, on its two sides, posterior and anterior. Then, through the loops of one side, the anterior one, he passed a flat rubber thread three millimetres thick ; he cut each loop of the other side in the middle and one of the ends of the loop was tied up with the corresponding one of the preceding or following ones. By pulling on these ends and tying them tight, the elastic band was stretched also and the base of the tumor divided and surrounded by a number of points of sutures and as many elastic ligatures as were necessary to obtain a result. The following day the effects were manifested by the cold condition of the growth. In six days the slough was beginning. In nine, the tumor sloughed off, leaving a small wound that healed rapidly. The penis required some little time and massage before it resumed its normal size and its normal position.—(*Annales de Bruxelles*, January, 1905.)

FOUR CALVES FOR A COW—WONDERFUL CASE OF MULTIPARITY IN THE BOVINE SPECIES [*Prof. A. Reul*].—She is an ordinary cow, bred and raised in rather a poor country ; she is small and has always been poor and thin. At her first gestation she had one calf. The following year she was covered by a bull of her breed and in due time delivered four calves, full of life, normally built and comparatively large, taking into consideration their number and the fact that the mother had but little room to carry them. Seven days after birth the little fellows weighed

17, 15, 16, and 18 kilogs. 500 grammes—a total of 66 kilogs., and half that the little mother had to carry, besides the weight of the foetal envelopes, etc. Five months later they had so well grown and developed that their weight had raised from 17 kilogs. to 70 for the first, from 15 to 82 for the second, from 16 to 86 for the third and from 18½ kilogs. to 87 for the fourth. Having not enough milk to be fed with they ate all they could take hold of. Since that wonderful event the mother has not been in heat.—(*Annales de Bruxelles, January, 1905*).

PRESIDENT DR. M. E. KNOWLES, of the A. V. M. A., wishes the REVIEW to ask the members who have or can obtain interesting pathological specimens to exhibit them, together with their brief histories, at the Cleveland meeting.

THE President of the Board of Agriculture of Great Britain has appointed a committee to inquire into the general question of epizoötic abortion and to consider remedial or preventive measures. Professor John McFadyean, Royal Veterinary College, London, is chairman and the Very Rev. Dr. John Gillespie is one of the other five members.

SO VERY SUCCESSFUL was the horse show held in Toronto toward the end of last month that the society holding it has determined to erect a mammoth structure and in future house its own exhibitions rather than have them in the Repository. It is also proposed to have the show next year last through the entire week.

VETERINARY SURGEON DESMOND, who holds several important positions in the Government service of South Australia, has lately spent a large part of his time at the Bacteriological Institute of Brisbane, Queensland, where he has been assisting in the work of the Institute in the investigation of dengue fever and bubonic plague.

AN EASTERN PARTY intending to attend the Cleveland meeting of the A. V. M. A., expect to take the No. 3 Limited train on the Lackawanna Railroad at 10 o'clock on Monday morning, August 14, reaching Buffalo at 7.55 P. M. Then they will board a steamer of the Cleveland and Buffalo Transit Company, leaving Buffalo at 9 P. M., reaching the convention city at 6.30 Tuesday morning, having passed a restful night aboard the boat, and ready for the business of the first day's session. The transportation charges by this route are as follows: New York to Buffalo, \$8.50; Pullman car, \$2 extra; steamer fare about \$2.50.

EXTRACTS FROM MEDICAL LITERATURE.

By E. M. RANCK, V. M. D., Natchez, Miss.

TETANUS.—Stoney reports two cases of tetanus treated with antitetanic serum, which presented a marked contrast to each other. In both the incubation period was long, in the first case 17 days and in the second case probably 18 days. In both the temperature was normal on the first appearance of the symptoms, in the second case it remained normal throughout the course of the disease; but in the first case after a preliminary fall it rose rapidly through 10.2° F. in twenty hours. In both cases the treatment was the same—*i. e.*, injection of serum and the administration of large doses of bromide of sodium and chloral by the rectum. In the one case death occurred within sixty hours of the onset of the first symptoms, whereas the second patient recovered. In the first case the spasms were frequent and severe, while in the second only one was observed. The result was due to the degree of infection and was not materially influenced by the treatment.—(*London Lancet*, April 24, 1905.)

ADAPTATION AND TUBERCULOSIS.—Adami discusses (1) the adaptation of the organism to the tubercle bacillus and (2) the adaptation of the tubercle bacillus to the organism. What he says of the tubercle bacillus can be said of any other form of microorganism. The theory is this: When a microorganism invades the body and is not immediately destroyed, it produces certain toxines which produce local and general disturbances. The body reacts to the toxines and produces antitoxines and substances which are inimical to the further growth of the invading germs. The offending microorganisms in turn produce defensive substances. Disease of microbic origin reduces itself, therefore, to a struggle between the invaded organism and the invader. Under certain conditions the end result is an increased resistance on the part of the organism to a specific infection and an increased virulence on the part of the invading germ for a like organism.—(*American Medicine*, April 27, 1905.)

CONSUMPTION.—Hutchinson asserts that pulmonary tuberculosis is a general disease with localized lesions in the lungs. It is therefore irrational to devote our attention too exclusively to the pulmonary lesions. The author is inclined to accept the conclusions of Robin and Binet as correct, and to believe that the predisposition to tuberculosis is dependent upon and exag-

gerated tendency on the part of an individual organism to fit oxygen and form carbonic acid, that is, to consume itself. Treatment must therefore be directed so as to overcome this tendency. Rest and overfeeding are the best measures at our command.—(*Medical Record, April 29, 1905.*)

THE COMPARATIVE VIRULENCE OF HUMAN AND BOVINE TUBERCLE BACILLI.—The comparative behavior of human and bovine tubercle bacilli was lately made the subject of a number of experiments upon various large animals by three of the medical officers of the Bureau of Animal Industry, the late Dr. E. A. de Schweinitz, Dr. Marion Dorset, and Dr. E. C. Schroeder. A report of the experiments has recently been issued by the Department of Agriculture in the form of a brochure of 100 pages, very handsomely illustrated, largely in colors. The authors regard some of Koch's experimental requirements as unnecessary and unreasonable, and it is their opinion that the intertransmissibility of human and bovine tuberculous disease is supported by so much indirect evidence of an overwhelming character that we are justified in looking upon it as practically established.—(*N. Y. Phil. Med. Jour.*)

DR. T. J. SULLIVAN, meat and milk inspector of the most populous county in Montana (Silver Bow), will present a paper at the Cleveland meeting of the A. V. M. A., on "The History of Meat and Milk Inspection in Montana," in which there will doubtless be interesting data.

TO CURE A BALKY HORSE.—A crowd blocked a Chicago street, and the horse doctor joined in to see what was up. "Ah, a balky horse," he murmured. Then he worked his way through the crowd, saying in an authoritative voice, "Let me pass, friends, I am a veterinary surgeon." Reaching the horse, he said to the master of the animal: "Put up your whip. It will do no good. I am a veterinarian. I'll cure your horse of the barks. Watch me." He took hold of the horse's front leg at the fetlock, bent it at the knee joint and held it in that position for three minutes. Then he put the leg down again and chirruped to the animal. It started off as though it had never balked in its life. "An old remedy for the barks, but an infallible one," said the doctor. "It has never failed me. Any balky horse, if you hold one of its fore legs up for three minutes, will be over its balkiness by the time the leg is lowered to the ground again."—(*Live-stock World.*)

ARMY VETERINARY DEPARTMENT.

IS THE USE OF MALLEIN AS A CURATIVE AGENT A CRIMINAL PROCEDURE?

The REVIEW of May contains a reprint from the *Western Veterinarian* which answers the above question in the affirmative. The anonymous writer starts out by expressing the hope that veterinarians will discontinue advocating the use of mallein and tuberculin as curative agents, because those engaged in sanitary science and police duty find it difficult to carry out their work in suppressing these diseases by destroying infected animals owned by people who have read about mallein treatment, etc., in agricultural papers. He concludes with this argument: "Even if it could be positively shown that these or other agents could cure cases of glanders or tuberculosis, the menace to human life maintained by the presence of such diseased animals makes the attempted treatment, other than for scientific purposes, a *criminal procedure*. We do not believe that mallein or tuberculin will cure cases of glanders or tuberculosis, but even if such were the case, our opinion would not change one iota from that recorded above."

For the sake of those among us who are swayed back and forth by opinions like this, I shall try to show wherein this anonymous writer errs. He himself may not be converted, because his "*belief*" about mallein is strong and deep and such may no more be shaken in medicine than in religion. But medicine has long since discarded belief and, fortunately, knowledge has taken its place. We do not know much about the curative properties of mallein and tuberculin, but enough to permit to formulate some facts. One known fact is that tuberculin has proven *not* to possess curative action, and accordingly it has long since been relegated to the more modest rôle as a diagnostic agent in man and animals. The other known fact, as elicited by Nocard in 1897, is that "repeated injections of mallein produce cessation of reaction in infected horses, and that such horses remain apparently healthy and fit for work." This discovery was against all expectation, because tuberculin and mallein, apparently so much alike from their mode of preparation, were until then supposed to act nearly alike, and it had previously been proven that repeated injections of tuberculin continue to produce reaction in infected cows.

This discovery of Nocard has been subjected to trial by a

number of investigators and practicing veterinarians, and in the main, has been confirmed. They have gone farther and have applied the repeated injections of mallein as a treatment of infected horses. The result indicates that mallein treatment produces a tendency to recovery, which can be accelerated by periodical doses increased progressively. A number of recoveries, apparently shown to be such by post-mortem examinations, have been recorded.* All investigators, however, agree on certain conditions of safety in the practical application of the mallein treatment. In the main they are as follows:

1. That the mallein used must be of good quality.
2. That the veterinarian applying it must have discernment.
3. That only *infected* horses should be subjected to the mallein treatment supported by judicious hygienic treatment.
4. That horses so treated must be periodically inspected.
5. That the value of the horses treated should warrant the expense of the treatment.

A great deal could be said in explanation of these conditions. To be brief: Point 1 requires that the veterinarian should have studied bacteriology and worked in a laboratory preparing mallein, or at least he should have studiously witnessed its preparation. As to point 2 it is simply "the man behind the gun," who will either hit or miss the happy medium in applying safely and effectively the mallein treatment. He should have discernment, *i. e.*, he should not be a mechanically manufactured veterinarian, but one born to understand "horse nature," as the physician, in certain diseases, must know human nature. If mallein treatment were only an automatic veterinary treatment such as the prescribing and selling of a cough mixture or colic mixture, we need not require deeper study or higher intelligence of the man applying it. But to place mallein in the hands of the half-educated veterinarian, who, parrot-like, has acquired a rudimentary and fragmentary knowledge of the ordinary branches of veterinary science; who does not understand the horse as an animal; who can neither follow nor formulate a scientific idea; but who merely possesses the commercial instinct to practice successfully in a financial sense; to such a veterinarian we should not intrust the mallein treatment. But

* (See AMERICAN VETERINARY REVIEW, May, 1904, Editorial: The curability of glanders with mallein, A. L., Paris; Aug., 1904, Editorial: Babés' conclusions upon malleination, A. L., Paris; Berlin Thierarztliche Wochenschrift, Nos. 10 and 15, 1904; Vet. Journal, London, Jan., 1905.

the well-educated, sober, earnest, studiously inclined and plodding veterinarian, even if he cannot earn three square meals a day in ordinary practice, can safely carry out this treatment, because he will find pleasure and satisfaction in it regardless of time and money. Unfortunately (in my opinion) such men are rare anywhere, and particularly in this country, where the commercial instinct predominates.

As to points 3-5, it is high time that it be understood that horses with visible lesions of glanders or farcy, *i. e.*, with typical, discharging glanders ulcers in the nostrils, or with opened-up discharging farcy buds, should be promptly destroyed, because they are spreaders of the disease, even if quarantined in the ordinary manner possible in cities or on the farm. But the horse proven only *infected* by a mallein test, whether the reaction is light, typical or severe, as long as he does not show any outward signs of the disease, may safely be subjected to the mallein treatment. Of course, discernment should rule here as to circumstances surrounding the patient, whether the value of the animal warrants the high expense of the repeated injections and periodical inspections, and whether proper hygienic treatment can be applied and relied upon or not. This latter is seldom procurable in the poor, run-down brute of the peddler, but it is nearly always possible in the valuable, well-kept horse, that may otherwise be sent to the bone yard for a trifling rise in temperature.

Discernment should also reign in the interpretation of the reaction to mallein as to kind and degree. Mallein does not nearly act as *uniformly* on the horse as does tuberculin on the cow, and even in that stolid animal we observe peculiar vacillations. Beware of the mechanical reading of the temperature-charts in the horse. The degree of morbid affection may have something to do with these vacillations, but the character and temperament of the horse certainly has. Heavy-weight horses react differently from light-weight, nervous horses different from lazy, well-bred, high-strung horses different from the cold-blooded, quiet animal with the thick skin that can hardly be pierced by the needle. Even personal acquaintance with the horse, or the gentle or brutal manner of handling the thermometer, all have more or less influence on the internal temperature of sensitive horses and are recorded as finely as in the most delicate barometer. Inability to perceive these facts have led veterinarians the world over to error, and have helped to doubt the reliability of mallein.

But while all this is so, and while cautious reserve should be observed in condemning horses merely on temperature-records, there is on the other hand no doubt that good mallein, intelligently applied, will tell the truth nearly as straight as tuberculin. For more than five years following the discovery of mallein, the leading veterinary journals of Europe and America were teeming with reports of mallein records with post-mortem results, and the conclusion has been that it is generally reliable as a diagnostic agent, that is: infected horses react and uninfected horses do not react. There were failures both ways, but they should now largely be ascribed to the "veterinarian behind the syringe." Failures in tuberculin tests have been counted as one-half per cent. as proven by an immense amount of statistics, and failures in mallein-tests as between one-half per cent. from much less statistics, because glanders is rare in comparison to tuberculosis. If these are the facts as brought out by years of labor of renowned investigators and intelligent veterinarians of all civilized countries, how can one of my esteemed army colleagues assert in the pages of this journal of last month that "slight cases of reaction are not proven to be glanders infection, since we often find animals which show some of the signs of the reaction, such as a rise in temperature and slight swelling at seat of injection, which never develop any further symptoms after the first reaction, but continue at work and keep in a good healthy condition." Surely, this is an unconscious twisting of facts and logic. Granted that good mallein had been properly applied—which I do not doubt, as I know this veterinarian—it would have been more reasonable to conclude that these cases of "apparent reaction" were cases of true reaction in 98-99 per cent. (statistics), and that the mallein injection had helped on a tendency to recovery, which showed itself by apparent health and fitness for continued work. (Nocard.) The possibility of a spontaneous recovery must be eliminated from this equation as a false quantity, because mallein had been applied.

As regards new points in mallein treatment, I can add nothing to what I have reported in this journal in May, June, July and August, 1904, but I hope new facts will be brought out by some of our colleagues. I have had no renewed experiences, because we have completely eradicated the glanders-infection at this Post by that method. Of the eight horses quarantined in 1902, four have since been sold at auction for unsoundness of limb, while the four others still remain here in service. The

horse that reacted most severely, a grey of B Troop, 3d Cavalry, has been used in the annual practice marches of 1903 and 1904, which entail hard manœuvring of troops, and he has not shown the least sign of illness. No one could detect to-day the slightest sign that this horse had once been infected with glanders. That he was infected of this I am sure, even if I would not have had the proof of the mallein test, because I had been early trained to diagnosticate such cases by careful physical examination long before mallein was known. I hope that nobody will think that I am trying to figure as an authority on the mallein treatment, and my object to-day simply is to refute some wrong opinions and set aright some matters that have been mixed up by the confusionists among us.

It is very difficult for me to perceive at the present time of any scientific arguments or facts against the mallein treatment, still I do not advocate its general adoption and have expressly stated so in my article in 1904. This was not written for the half-educated veterinarian, but for the able men which fortunately we have among us also. In the hands of these the mallein treatment can never be "*a criminal procedure*," but will work as a blessing bestowed upon our profession and the civilized world by our immortal French colleague.

OLOF SCHWARZKOPF.

"THE REVIEW comes as a welcome visitor to me. To the veterinarian who is beginning a practice and needs help and light, as such an one does, it comes as a message of hope and cheer."—(B. R. Wilbur, Randolph, N. Y.)

DR. SEPTIMUS SISSON, Professor of Comparative Anatomy in the Ohio State University, College of Veterinary Medicine, has been granted a year's leave of absence. He sailed June 14th for Bremen and contemplates spending most of the time in study and observation of anatomy and anatomical methods in a number of the leading universities and veterinary schools.

ON June 10th, Waterville, Me., had for the first time a horse show, which proved to be a great success, and was organized by Dr. A. Joly. There were four classes—class 1, composed of double hitches; class 2, of single hitches, driven by ladies; class 3, single hitches, driven by gentlemen, and class 4, composed of ponies. Two silver cups were given as sweepstakes. Dr. W. S. Lord, of Portland, Dr. I. L. Salley, of Skowhegan, and L. H. Soper, of Waterville, acted as judges.

BIBLIOGRAPHY.

VETERINARY SURGERY. By Louis A. Merillat, V. S., Professor of Veterinary Surgery in the Chicago Veterinary College, etc. Volume I.—Animal Dentistry and Diseases of the Mouth. Illustrated. Chicago : Alexander Eger, Publisher, 1905.

In a small volume of 250 pages one of the foremost veterinary surgeons in this country has in the intervals of active practice given to his colleagues the benefit of his close study and large experience in the treatment of the organs concerned in the mastication of the food as well as being the host of the driving bit in solipeds, and the many diseases occurring to them as a result of natural causes and accidental injuries. Prof. Merillat has not in the comparatively few pages devoted to this volume sought to cover the subject as fully as it is possible to do, but he has rationally excluded all obscure, rare, and imaginary conditions and included only those conditions encountered in the routine of practice, thus placing those who will most frequently consult his work under many obligations. Animal dentistry has proven to the author a very fascinating portion of his practice, and he has bestowed upon that branch of surgery a great deal of intelligent study and practice, a result of which is embraced in the following summary of his conception of the scope of the subject : (1) The cutting and floating of the enamel points of the horse and ox ; (2) the removal of projections which prevent perfect apposition of the dental arcades of the horse, ox and hog ; (3) the treatment of secondary nasal catarrh resulting from diseased teeth ; (4) the extraction of all diseased teeth of all animals ; (5) the removal of tumors related to the teeth, in all animals ; (6) the treatment of stomatitis caused by the bit or by dental projections ; (7) the amelioration of driving defects resulting from dental irregularities in the horse ; (8) the treatment of faulty eruptions of the permanent or temporary dentures in the dog, the horse, the ox and the cat ; (9) improving the appearance of the incisors of the horse. Merillat has always been an advocate of the merits of this branch of surgery, and he well says: "When dentistry in animals is more generally recognized as an important if not essential feature of animal therapeutics, and when dental operations by reason of greater skill are made easier, the veterinarian will then treat the art of dentistry with the same dignity as the other branches of surgery."

After a comprehensive introduction he takes up the subject in a systematic manner and treats it in a plain, terse style, easily

followed, and well calculated to impress the reader in a practical way, so that he feels his own competency to undertake any of the operations described where the technic is given.

The illustrations are well executed and well chosen to assist in the comprehension of the subject, and Eger has given a finish to the mechanical part of the book which reflects credit upon the young publisher.

Two more volumes are in preparation to complete his "Veterinary Surgery": Vol. II, Diseases of the Digestive, Respiratory, and Urino-Generative Organs; Vol. III, General Surgery and Operative Technique. Representing as Dr. Merillat does the modern school of surgeons, we anticipate great pleasure from a perusal of the promised volumes. In the meantime, no veterinary surgeon in this country should fail to secure the excellent first volume upon "Animal Dentistry."

A RAT KILLED A HORSE.—*Marysville, O., June 17.*—As the result of swallowing a live rat while eating oats out of his trough, the noted trotting horse, Corintho, son of Ontario, 2:13, died in Plain City. The windpipe of the horse was lacerated by the rat.—(Reprinted from the *Daily Press* without comment.)

THE LATE DR. R. S. HUIDEKOPER'S WIDOW TO MARRY GEN. NELSON A. MILES.—*Philadelphia, June 23.*—Cupid has conquered General Nelson A. Miles, hero of 100 battles and half a dozen Indian wars, according to society gossip here. The General will capitulate in the Fall, it is said, to Mrs. Rush Shippen Huidekoper, the little god's representative. Mrs. Huidekoper has gone abroad, it is authoritatively stated, to purchase her trousseau. Aiding in this task is Mrs. Henry Huidekoper, her sister-in-law. Since last Summer General Miles has been quietly making frequent trips to this city, and his presence has been known only to a few intimate friends of Mrs. Huidekoper. They seldom were seen in public places together, owing to General Miles's prominence and the fear of his being recognized by one of his many friends here. Mrs. Huidekoper, who is forty-two years old and very attractive, has been a widow for a little more than three years. Mrs. Huidekoper lives at No. 2301 De Lancay Street, and her house is closed during her trip abroad. Mrs. Henry Huidekoper lives at No. 1704 Pine Street. They will be gone until the latter part of August or September 1. Upon their return, it is said, preparations will be begun for the wedding.—(Special Despatch to the *New York Evening Journal*.)

CORRESPONDENCE.

"THE TICK THEORY HANDLED BY AN ACARIOLOGIST."

BATON ROUGE, LA., June 13, 1905.

Editors American Veterinary Review:

DEAR SIRS:—Readers of the REVIEW, on this side of the Western Ocean, are, I feel sure, very grateful to the Senior Editor for his most interesting "European Chronicles," which appear with monthly regularity in our valuable home journal, as they give us, in succinct and most readable form, the gist of what is going on, professionally, in the great veterinary field of Continental Europe.

I must say, for one, that I was not a little surprised at the stand taken by that eminent authority, Pierre Megnin, against the tick theory of transmission of disease, as quoted by Dr. Liautard in his "Chronicles," which appeared in the June issue of the REVIEW. It seems almost sacrilege to question the opinion of such a scientist, and yet one is forced to the impression that he cannot possibly have made any very careful investigation into the life history and habits of, at least, one species of tick, the *Boophilus annulatus*, otherwise he could not have made the statement accredited to him in the "Chronicles" referred to.

True, Dr. Liautard "leaves his friends of the Bureau to answer Mr. Megnin," which doubtless they will, and it may savor of presumption on my part to make the attempt to do so, and yet I have no doubt the Doctor will pardon a few remarks from one living below the Federal Texas Fever Quarantine Line, and who has been the victim, more than once, of "tick infestation," to his considerable bodily discomfort.

Under the caption which I have borrowed to head this article, Megnin is quoted as having said, that, "These insects (ticks) are great blood-suckers, it is true, but having no wings, and being entirely unable to move from one animal to another, as flies, or even some fleas do, how can they transmit a disease, although their belly is full of its germs, when they cannot pass from one animal to another animal?" It is this question, embodied in the latter half of the above quotation, which makes me venture the expression, that Megnin cannot possibly be perfectly familiar with the life cycle of our North American Texas fever tick, and that he must have based his statement on the habits of other species, which are by no means similar. Then,

again, he is evidently not aware that, in the case of "piroplasmosis," or our Southern cattle fever, the infective organism (*Piroplasma bigeminum*) passes from the infected mother tick, through the ovum, to the seed-tick (larva), and is, through this latter form, conveyed to the susceptible bovine animal.

Megnin is further quoted as saying, in his conclusions, that "The larvæ which come out of the eggs require months to complete their organization, and when they become hungry they go on small mammalia with thin skins that they can pierce, and never on large animals as their mothers do."

Those who have made a study of the tick theory of transmission of Texas fever in the Southern States of North America are quite familiar with the fact that the protozoan of this disease is not transmitted by adult ticks passing from one animal to another, but by seed-ticks (larvæ), the progeny of the engorged female parasite after the latter has dropped from off its infected bovine host, the eggs deposited upon the ground have hatched, and the larvæ have attached themselves to a passing animal coming in contact with them.

A few further remarks on the life history of the *Boophilus annulatus* here may be of interest, and may, to some extent, clear away some of the difficulties under which Megnin may have been laboring. I quote from the results of Professor H. A. Morgan, entomologist of the Louisiana Agricultural Experiment Station, and published as Bulletin No. 51 of that Station in 1898. I may incidentally mention that Professor Morgan has done as much individual work with ticks, in their economic relation to the Texas fever problem, as any investigator in this country, if not more. He says: "In the seed-tick condition, this parasite is gregarious, collecting or bunching in great numbers upon grass, weeds, or, in fact, any elevated object near the place of hatching. The passing animal (bovine) coming in contact with a bunch of these minute ticks becomes thoroughly infested, the young ticks soon becoming fixed by their mouth-parts to the skin of the host. In from twelve to fifteen days, the young hexapodous form molts, after which it possesses four pairs of legs instead of six. Another shedding of the skin takes place in from four to six days, after the first, up to which time no sexual characteristics are apparent, except that the extreme size of the adult female now seems to be foreshadowed. After the second molt, the large size, and the dorsal shield of the female; the ventral bands and the pointed shoulders of the male, become characters easily distinguishable. At this period mating

takes place, and in a few days the 'round of life' is complete; the females, filled with blood, drop to the ground, lay their eggs, and another generation begins. From the time the seed-ticks (the hexapodous forms) attach themselves to the animal, until maturity is reached, there is very little disposition on their part to change their point of location. None, in fact, except at the very beginning of their parasitic life, or perhaps, immediately after each molt, or, in the case of males, to some extent, during their adult existence. Practically, it means death to the cattle tick if removed from its host when once it has been well located."

During the summer of 1898, while engaged with the conduct of experiments looking to the immunization of susceptible cattle to Texas fever, a series of tests were made with several varieties of ticks with the view of ascertaining whether those, other than the *Boophilus annulatus* were capable of transmitting the *Piroplasma bigeminum*. Experiments with the "lone star tick" (*Amblyomma unipunctata*) were begun on susceptible cattle on July 2, 1898. Mature ticks were collected from three sources, viz:—from deer, from a dog, and from native cattle. Applications of seed-ticks, the progeny of those collected from deer, were made in great numbers on July 2d. The product of those collected from a dog were placed in large numbers upon a susceptible animal on July 9th, and again on August 17th of the same year; while seed-ticks, the young of those collected from native cattle, were applied to a susceptible animal on July 16th, July 25th, and again on August 9th. No signs of fever appeared during all of the experiments, the animals remaining in perfect health until the test of their susceptibility was made by infesting them with cattle tick larvae (*Boophilus annulatus*) on the 23d of September, after which they suffered from a vigorous attack of Texas fever.

The conclusion that the lone star tick does not convey the fever organism was further borne out, when, during March, 1899, this species was collected in the third stage (just after molting the second time) from native immune cattle, and permitted to develop on susceptible animals.

On July 19th, 1898, mature females of the wood, or dog tick (*Dermacentor americanus*) were collected from a dog. Eggs were deposited, and on August 29th, thousands of seed-ticks were placed upon an animal susceptible to Texas fever. Another liberal application was made on September 5th. The animal remained in good condition, showing no signs of fever

until it had placed upon it a liberal number of the larvae of *Boophilus annulatus*.

It is worthy of remark here, that all of the seed-ticks (larvae) used in these experiments were artificially hatched in the breeding cages of the entomological laboratory from the mature female ticks collected, which goes to prove that, in the case of the "cattle tick," the *Piroplasma bigeminum*, or Texas fever protozoan, must have passed from the infected mother tick, through the ovum, to the seed-tick.

From the results of these investigations, then, it may be inferred (1) that the *Boophilus annulatus*, at least, does not require wings, or be able to move from one animal to another, in order to transmit the organism of Texas fever, but that it, in the hexapodous form, becomes attached to the bovine host animal; remains, in the case of the female, until engorged with blood; drops to the ground after having molted twice: oviposits; the larvae are then hatched; attain (in clusters or bunches) some elevated position, such as stalks of grass or weeds, etc., and ultimately attach themselves to the first passing host that comes in contact with them, to again commence their life cycle; and (2) that the infective agent must be conveyed to the seed-tick, through the ovum, from the infected mother tick.

I can only repeat, that this eminent acarologist must have had in mind the life history and habits of other varieties of ticks than the *Boophilus annulatus*, the North American Texas fever-conveying parasite. And that if Mr. Megnin could have had the good fortune to carry on investigations in Louisiana, or other of the Southern tick-areas in this country, he would soon have become convinced that, not only is the *Piroplasma bigeminum* of Texas fever transmitted from immune to susceptible cattle, through the medium of our cattle-tick, but that the organism is conveyed from the infected female tick, through the egg, to the larva, all of which has been abundantly proven by quite a number of careful research workers, on this side of the Atlantic, whose records are beyond question.

W. H. DALRYMPLE, M. R. C. V. S.

Louisiana State University.

NASO-OESOPHAGEAL INTUBATION—PERFECTED APPARATUS VS.
SUBSTITUTION.

St. Louis, Mo., May 22, 1905.

Editors' American Veterinary Review:

DEAR SIRS:—It has been two years and four months since

I demonstrated the operation of syphoning the stomach of the horse before classes in two veterinary colleges. Though I had considered it a necessary and successful operation for more than eight years, as it had proven so in my private practice, it was even considered by many as a doubtful expediency in any case.

The effect on the classes was varied, grading from the men who said, "Phillips, get me one like yours at any price," to the men who looked, measured and squeezed between their fingers to get the characteristics of my instrument that they might order one and get it cheaper than I could buy them; to the men who thought any old tube will do as well; to the men who believed that nothing would do in a real case of stomach trouble—that it was an experimental operation.

It was evident to me that the operation was now launched, and the above experience with professional men looking for something cheap with which to perform this operation actually startled me, that I would eventually be put in a bad light for ever presenting this operation as being so practical. To save my reputation I at this time decided to standardize the operation by introducing a tube that might be termed a standard tube, one that an experience of eight years had proven to me to be the most practical.

It has been one year since I wrote a short article in your most valuable journal, stating facts of the possibilities of the operation, describing the procedure, and calling attention to the characteristics of a tube that would prove most practical. In the same issue I placed before the profession an advertisement calling attention to the Phillips "Perfected" Tube.

Since that time hundreds of veterinary surgeons over the United States and Canada are practicing the operation successfully. Many letters attest the merits of the Phillips "Perfected" Tube.

The general success and adoption of this method of treatment in acute stomach disorders is due to, first, drawing the attention of the profession to the rationality of the treatment; second, to the practical method of passing the tube; third, to the thorough syphoning of the stomach after the tube is in position, by liquefying the contents with a saline solution, thereby removing all irritative and fermentive matter; fourth, to presenting a practical tube whereby this work is possible.

The buyer of every tube sent out was urged to report any failure in passing the tube, that I might aid him by personal suggestions to make it practical to him. Not 2 per cent. of the

hundreds who have received the tubes have reported failure to pass the tube, and not 5 per cent. have reported no benefit in their first attempts. All were urged to not become discouraged in their first attempts to pass the tube. Is it not quite phenomenal for both the operation and instrument when we consider that the operation is learned from written instructions only, by surgeons of all grades and dispositions as diagnosticians and operators?

It was two years before I could have manufactured for me a glass-moulded tube of proper measurements and consistency, and I have upwards of two dozen samples and rejected tubes of fine finish and appearance that I could sell at a very low price. I would not recommend or sell them for stomach tubes, however, though they are made for that purpose, according to the minute description that my present glass-moulded tubes, the Phillips "Acme," are made.

Since I introduced the operation and have shown it to be so practical, individuals and firms have rushed in to supply the trade, some adopting deceptive methods to obtain it. The enclosed circular will explain. They are advertising a *Phillips Nasal Tube*. They know that the profession generally are not familiar enough with the spelling of *Phillips* to know whether one or two L's are in it, or whether the phrase *Phillips Nasal Tube* is not the same as *Phillips "Perfected" Stomach Tube*, which was introduced as an instrument to be passed through the nasal chamber.

No doubt some will buy of such dealers. I admit their privilege to do so, but I wish to take this opportunity to caution the profession against any dealer who claims to sell or have for sale a Phillips Tube at a price that is less than that quoted in your journal, for they are not my goods. I shall inspect and have stamped every tube that is worthy my name.

Yours respectfully, J. M. PHILLIPS.

AS TO SPANISH VETERINARY LITERATURE.

121 SOUTH CORONA STREET, COLORADO SPRINGS, June 16, 1905.
Editors American Veterinary Review:

DEAR SIRS:—Do you know of any veterinary journal, etc., published in the Spanish language. If so, please answer in the columns of the REVIEW. Yours truly,

WM. SCHUMACHER.

[Can any reader of the REVIEW give Dr. Schumacher the information he seeks?—EDITOR.]

COMMENCEMENT EXERCISES.

WASHINGTON STATE COLLEGE (VET. DEPT.).

The commencement exercises of the School of Veterinary Science, Washington State College, Pullman, Washington, took place June 22, at 10 o'clock in the College Auditorium. There were four graduates: Dudley Niles Clark, William Henry Cumming, Arthur J. Damman, and Daniel Wallace Harrington.

OBITUARY.

ROBERT WARD, F. R. C. V. S.

The following minute records the loss of a brilliant member of the veterinary profession in Maryland: "At a meeting of the Maryland State Veterinary Medical Society the death of our late fellow-member, Robert Ward, F. R. C. V. S., former State Veterinarian of Maryland, and the following minute ordered published: Divine Providence having separated from us our late member, Dr. Robert Ward, who by his intellectual attainments, had arrived at an honored position in the veterinary medical profession, and had by a most genial disposition endeared himself to a wide circle of friends, we record with sorrow his death and realize that his course of life in this State, resulted in the betterment of his chosen profession and all those who had the pleasure of his friendship."

AMONG the graduates of the Medical Department of the University of Pennsylvania at the spring examinations was John J. Repp, V. M. D., the efficient Secretary of the American Veterinary Medical Association, who, we understand, does not anticipate abandoning veterinary medicine, but has acquired his second degree in order to prepare himself for work in the higher conception of his chosen profession.

THE investigation into effects of the loco weed on cattle and horses by the Department of Agriculture and the Colorado State Experiment Station has thus far been without results. The post-mortem performed last week by Dr. Glover of the station and Dr. Lamb, State Veterinarian, and Dr. March, in charge of the Government experiment at Hugo, developed nothing peculiar.—(*Breeder's Gazette*, June 28.)

SOCIETY MEETINGS.

THE REVIEW presents its compliments to Secretaries of Veterinary Medical Associations throughout the United States and Canada, and begs to again remind them that this journal earnestly desires to publish the transactions of every meeting held within that large territory. It points with pride to this department in Volume XXVIII, which include *most* of them; but two or three have failed to avail themselves of our oft-repeated invitation to give the profession at large the benefit of their deliberations. We want a closed volume of the REVIEW to constitute a complete record of everything of interest and value in a veterinary sense occurring in all the Americas during that period.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

OFFICE OF THE SECRETARY,
DR. JOHN J. REPP., 5246 OSAGE AVENUE,
PHILADELPHIA, PA., June 27, 1905.

Editors American Veterinary Review:

DEAR SIRS:—Although it is necessary to report for the July REVIEW the progress of preparation for the Cleveland meeting at a time when the expectancy of the profession is high, it is, nevertheless, a time when all the details are in the most active stage of formation, hence it is impossible to give an adequate idea of what the meeting will really be.

The Local Committee of Arrangements has its plans well advanced, and, while it is not yet in a position to announce the items in reference to the entertainment and the clinic, something more than the ordinary can be vouchsafed. The possibilities for entertainment in Cleveland and vicinity are unlimited, and the committee may safely be trusted to select that which is best. As for the clinic, both the Committee on Programme and the Local Committee have pledged themselves to see that it shall be a model, far excelling any the Association has yet had, and making a feature which alone will repay the outlay for the trip. Eminent clinicians will conduct the demonstrations, and an amphitheatre will be provided, so that all may profit by what is said and done. The clinic will be no idle affair.

Chairman Shepard, of the Local Committee, writes that the

Hollenden House, which will be our headquarters, is the largest and finest in the city, and that the Association will have the best meeting-place it has ever had. The rates are \$1.00 upward per day. There are plenty of other hotels, a list of which will be furnished later, where first-class accommodations can be had at suitable rates.

Negotiations are in progress with the various passenger associations for reduced rates, and, as we have always heretofore obtained a rate of one and one-third fare for the round trip, there is every reason to think that such a rate will again be granted.

The literary part of the programme to date, is as follows :

Prof. Robt. Ostertag, Berlin, Germany, "Meat and Milk Inspection under Federal and State Control."

Prof. K. Tsuno, Tokio, Japan (subject not given).

Dr. J. Desmond, Chief Inspector, Central Board of Health, Adelaide, So. Australia (subject not given).

Dr. M. H. Reynolds, St. Anthony Park, Minn., "Stable Ventilation."

Dr. R. P. Lyman and Dr. C. L. Colton, Hartford, Conn., "Callous Fibromas."

Dr. W. L. Williams, Ithaca, N. Y., "Spavin Group of Lamenesses."

Dr. C. W. Fisher, San Mateo, Cal., and Dr. D. H. Udall, Columbus, O. (subject not given).

Dr. R. C. Moore, Kansas City, Mo., "Neurectomies of the Pelvic Limb."

Dr. L. A. Merillat, Chicago, Ill., "Accidents and Sequelæ of Surgical Operations."

Dr. L. Frothingham, Boston, Mass., "Negri Bodies and the Diagnosis of Rabies."

Dr. R. H. Harrison, St. Paul, Minn., "Unusual Lesions of Tuberculosis found in Abattoir Inspection."

Dr. J. W. Adams, Philadelphia, Pa. (subject not given).

Dr. L. A. Klein, and Dr. Haven Metcalf, Clemson College. S. C., "A Contribution to the Study of Epizoötic Abortion."

Dr. W. A. Stuhr, Ames, Iowa (subject not given).

Dr. George B. Jones, Sidell, Ill., "Hydrothorax."

Dr. A. Youngberg, Lake Park, Minn., "Swamp Fever of the Horse."

Dr. E. V. Wilcox, Washington, D. C., "Some Poisonous Plants in Utah."

Dr. Chas. Schulin, Billings, Mont., "Pathology of Tuberculosis."

AMERICAN VETERINARY REVIEW.

AUGUST, 1905.

EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, FRANCE, June 15, 1905.

TUBERCULIN ACCOUTUMANCY.—Several months ago I made allusions to a work which had been carried on by Prof. Vallée, and which he had presented to the scientific world. It related to the accoutumancy of cattle to tuberculin and to the means to overcome it by a modification in the technic of tuberculation. Our friends remember that it was suggested to increase the dose of tuberculin, to double it, and to take the temperature every two hours from the time of the injection; as then, the hyperthermy occurs sooner than in the tuberculous animals tuberculated for the first time.

For Prof. Vallée, the first injection of tuberculin would, so to speak, render the animals more sensitive, and, thanks to this impression, the hyperthermy following a second injection would be quicker and last a shorter time; and, to detect it, it is necessary to take the temperature earlier than it is done ordinarily.

The problem presented by Prof. Vallée has a great importance, coming as it does to the assistance of the veterinarian who has to examine an animal where previous tuberculation may be suspected.

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Prof. Arloing, of the Lyon School, who is also an investigator on all that relates to tuberculosis and to tuberculin, has controlled the experiments of Vallée, and, while he admits that the

thermic reaction is incontestably manifested earlier after the second tuberculination, he asked the question : Is the animal rendered more sensitive by a first dose of tuberculin ? In the numerous cases where he has resorted to tuberculin in the experiments that he has made, he often observed that the thermic reaction, sufficient for a diagnosis, was sometimes observed before the time fixed for the record, and accepted by classical regulations, and that after the first tuberculination. A similar observation has also been made by Prof. Malm, who has published curves of temperature after tuberculination where the *maxima* were observed very early, after the fifth and even the fourth hour. Consequently, the essential cause of the early reactions is not the previous injection of a first dose of tuberculin. Is it not more likely due to the large dose of tuberculin used in the second injection ?

For Arloing the subject remains to be inquired into and two questions must be solved, viz. : (1) If, after an ordinary dose of tuberculin, the thermic reaction does not sometimes precede the times fixed in classical directions ? and (2) if, by doubling the dose of tuberculin, the time of apparition of the thermic dose, in most of the tuberculous animals, is not made to appear sooner ?

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After all and whatever may be the explanation of the observations of Vallée and the objections of Arloing, the first has certainly given a good way, on general principles, to upset the effects of a first tuberculination. But with all that, the question of tuberculin may have to be studied again.

Such has been the impressions of Dr. L. Stubbe and G. Nulle, who as inspectors to the veterinary department of the Secretary of Agriculture in Belgium, made experiments on the subject which they record in the *Annales de Bruxelles*. For them the test was easy, some 1,400 or 1,500 milk cows monthly passing the frontiers, which no doubt have been tuberculinized previous to being brought there. A large number of cows were submitted to the Vallée test with the object of solving the three follow-

ing points : (1) Does the reaction in imported bovines, which react to tuberculin, begin sooner than indicated by the classical data? (2) Is this reaction sometimes temporary, of short duration and disappearing before the twelfth hour? (3) After reacting manifestly to tuberculin, will some animals tuberculinized shortly after, give again a typical or at least suspicious reaction?

The answers to these questions are positive. The method of Vallée applied to animals which have been tuberculinized gives always a reaction which appears early and is of short duration, existing sometimes before the 12th hour and having disappeared after the 12th, 15th and 18th, or even earlier. In conclusion the other parts of the problems that were proposed to be solved, Dr. Stubbe and Nullie are of the opinion that there are yet some questions which remain unanswered, and, like Arloing, they suggest the propriety of a new study of the tuberculinization of tuberculous bovines. It is fortunate, however, that the efficacy and the value of tuberculin as a means of diagnosis of tuberculosis remain as strong, yes, even stronger, than ever.

* * *

THE STRAUSS METHOD OF DIAGNOSING GLANDERS.—A number of years ago, shortly after Strauss had made known the rapid means of diagnosis of glanders that bears his name, viz.: the effects of the inoculation of glandorous products in the peritoneum of male guinea-pigs, and the development of specific orchitis, and being desirous to test the new discovery, I injected some of the discharge of one of my patients in the abdomen of a guinea-pig, and watched. The result was negative, and I was much disappointed, as I could not get from any one an explanation of my failures. Since, however, other works have been published that this manifestation of orchitis does not belong exclusively to glandorous products, and yet, notwithstanding them, this mode of diagnosis of glanders is considered of such value that a veterinarian might be justified in not making a diagnosis of glanders if the sign of Strauss was absent.

In the *Revue Générale* of May 1st, Prof. L. Panisset, of Alfort, writes an article which gives me the explanation I have

been so desirous to get. He shows that a veterinarian might make an error in excluding the presence of glanders because of failure to test with the method of Strauss.

* * *

Prof. L. Panisset had inoculated five guinea-pigs, in the peritoneum. Two died with septic peritonitis, the three others survived, but failed in having anything towards the testicular region. Killed three weeks after, they presented no lesion whatever, and it would have been justifiable to conclude the absence of glanders; and, yet, the subject from which the inoculated matter had been taken reacted to mallein, and when killed revealed glanderous lesions. Was the sign of Strauss at fault?

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The explanation is given by Prof. Panisset as follows: "As we had inoculated an impure product (the discharge from the nostrils), we have thought that the microbes present in it, with the glanderous bacilli, had protected the organism against the pathogenous action of these last, and that the immunity that we observed was an example of bacterian antagonism *in vivo*.

"When the post-mortem was made of the guinea-pigs that died rapidly after the inoculation, we had planted some of their peritoneal liquid on potatoes. A pure culture almost exclusively of *Staphylococcus albus* took place. Its great abundance in the peritoneal exudate made me suppose that it might be the preventing agent. Our following experiments have confirmed our suspicions in an almost absolute manner."

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Without entering into the series of interesting experiments related by Prof. Panisset, his conclusions read: "From observation and the experiments that we have made, the indication can be derived that guinea-pigs inoculated in the peritoneum with products from glanderous horses may, in some conditions, fail in presenting the orchitis or the ordinary manifestations of the process of glanders. These conditions may be realized naturally, and in view of these difficulties, a diagnosis cannot be advanced, based on this single element."

Therefore, in cases of doubtful diagnosis at the same time as intraperitoneal inoculations shall be made, one must also resort to subcutaneous inoculations. In this way one will guard himself against secondary infections; and again the development of the glanderous abscess, and of the subsequent lesions, although more slow to appear than the orchitis, will be constant.

Of course, besides these inoculations to guinea-pigs, it is always advantageous to resort to the other means of diagnosis which are in general practice. Cultures of the products, inoculation to dogs, all of those will serve to confirm and complete the results obtained by malleination. Injection of mallein made in proper conditions remains always not only the most practical and most general method of diagnosis, but also the one that furnishes the most precise indications.

* * *

PROTESTS BY STUDENTS.—Decidedly students of medical sciences in Europe, whether veterinary or medical, do something else than merely attend lectures and conferences at the schools where they have matriculated. They have privileges, they know them, and use, sometimes abuse them. Indeed, they not only have the right to appreciate, discuss, approve or disapprove the teachings of the professors, but, besides, they do not hesitate to make known their impressions and in some cases, in a more or less proper manner, their dislikes.

It is but a short time since the students of the Veterinary School of Milan complained quite loudly of the conduct of a professor who failed in his duty by not delivering his lectures. The complaint found its way to the Secretary of Agriculture or of Public Instruction, I do not remember which, and the faulty professor had to submit or to resign.

On this occasion, the reform was obtained quietly.

It has been different in the troubles which occurred lately at the School of Medicine in Paris. For some reason or another, a professor was disliked—first, his lectures were not listened to; then when he entered the lecture room he was received with

whistling, feet stamping, loud cries, etc.; then, these being without results, street manifestations at his house, public protestations to the dean, etc., etc. Finally as the students were not willing to submit and as the authorities did not want to remove the disliked cause of the trouble, the School of Medicine was closed for a certain length of time.

* * *

These, however, merely show that students have the right of protesting—with calmness and dignity, when their demands will have a better show of being granted, specially if they are just; or in a rather rough and undignified manner, when they are resisted by higher powers, especially if the requests are unjust.

In the *Revue Générale* I find a résumé of the second congress held by the German veterinary students of Austria, which shows how questions of schools and students are treated in that country, so as to prepare them for consideration at the hands of the authorities at the proper time.

At this congress, none of the professors of the veterinary school were present, but their assistants, and those with delegates of the association of Austrian veterinarians and of other organizations took part in the discussion.

Student Frauenberger made a report on reforms in veterinary education. The actual system is an anachronism and nonsense. The school depends upon the Secretary of War—everything is military. Students with the entire veterinary profession demand that the school be made a department of the Secretary of Public Instruction.

Student Sattleger treats of reform in the studies; and the following resolutions are adopted: (1) Postponement of the theoretical shoeing demonstrations; (2) organization of a course on dairies; (3) creation of a chair on rural economy, cattle insurance and bovine pathology; (4) improvement in clinical work and scientific excursions; (5) wording of the diploma in Latin only; (6) *doctors and students of medicine shall not receive privileges while attending veterinary schools*

unless similar privileges shall be granted to veterinarians attending schools of human medicine.

Student Schuster asks that all graduates should receive the degree of "Doctor of Veterinary Medicine."

This congress of students closed after expressing the wish for a law regulating the practice of the veterinary profession; of one forbidding the sale of veterinary drugs except by a prescription from a veterinarian; of one preventing agricultural schools from delivering certificates inducing their students to practice veterinary medicine.

* * *

I have written the preceding as a complementary appendix to previous remarks made by me in the REVIEW on the subject of veterinary education and reforms, and I will here add the very words that Prof. Leclainche uses after reviewing the work of this congress as embodying the sense I would convey if I were making a comparison with the question in America.

"Notwithstanding my resolution to leave to the reader the task of commenting upon these documentary chronicles, I may be allowed to point out—but without making comparison—the maturity of spirit of the German students, perfectly instructed with professional questions, discussing them quietly, with full conscience of their duties and of their rights. And this takes place in the oldest and most conservative of European monarchies."

* * *

COLICS.—The subject of colics is always interesting and is always fecund in giving material for information and discussion. This fact was well illustrated recently by the repeated discussions which were held at the Société Centrale, as I alluded to in my chronicle of September last, and, notwithstanding what took place at that time, paper after paper on the subject continue to be sent to the said society, and as the rédacteur of the *Semaine Vétérinaire* says: Since so many horses have bellyache now, it has been necessary to establish a special commission to which all

the papers written of late on this eternal question will be referred and from which a general report will be expected. This will be curious to read. In the meanwhile I find an extract from the *Monatshrift für praktische Thierheilkunde* on the differential diagnosis of some forms of colics in the horse written by Dr. Mitzschke and where he reviews a number of colics and classifies them as follows:

Colics from Obstruction—the most frequent, located generally in the large intestine or cæcum and sometimes in the rectum. The history of the case or the nature of the food gives a first indication, which is confirmed by the changes in defecation and the nature of the faeces. At first the indications given by the pain, the pulse and the mucous membranes are vague. Abdominal exploration by the rectum is a sure method to obtain information as to the nature and exact seat of the lesion. If the obstruction is in the small intestine, the diagnosis is more difficult. At times there are gastric symptoms. The obstructions are often made and by the immobilization of some parts of the intestines by torsion, volvulus or invagination. This may be difficult to locate, but the severity of the symptoms, profuse perspiration, rapidity of the pulse, failure in the treatment, may render it suspicious. Rectal examination may permit a sure diagnosis. Ectopias of the cæcum, in the pelvis, turning of the large colon, will also be detected by it. Inguinal hernia is easily detected in stallions.

Dyspnœic symptoms are observed in diaphragmatic hernias.

* * *

Colics of Indigestion, due to overloaded stomach, give rise to various symptoms. The history of the case is important with these for a diagnosis, which may be confirmed in a more or less complete manner by the peculiarity of the symptoms, the restlessness of the animal, the frequent decubitus, dog sitting down, the localized perspiration at the forearm, the efforts at evacuation or vomiting.

Spasmodic Colics, rheumatismal or resulting from exposure,

are characterized by the intermittence of symptom, pain and peristaltism.

Gaseous Colics, due to fermentation or cribbing, are easily diagnosed.

Thrombo-embolic Colics have very poorly marked characters, which resemble somewhat those of colics from obstruction.

The prognosis of colics is always very uncertain. If the pulse is not much altered, the conjunctiva remains rosy in color and the intestinal peristaltism continues, a favorable termination is probable.

A horse that drinks normally, as ordinarily, most often recovers; on the contrary, the one who swallows with avidity or drinks by small sucks or which dips his whole nose in the water is generally very sick and in serious condition.

* * *

FAVORS RECEIVED.—Although there is lots of material which I would like to speak of to-day, I must close, for fear that I will trespass on the space allowed for these chronicles. I may, however, be allowed to occupy a little more space to acknowledge the receipt of the last communications that I owe to the kindness of the Bureau of Animal Industry, and which have already been noticed in the May issue of the REVIEW by my co-editor in New York.

I am also thankful to the gentleman who has sent me from Cornell University the catalogue of the New York State Veterinary College and several most interesting pamphlets containing various works from Prof. Veranus A. Moore and some of his assistants. As one of them contained a card with the compliments of the Doctor, I suppose it is he who has done me this kindness; it is he, therefore, that I must thank. I do so with great pleasure, for the pamphlets, which I will enjoy and profit by. The announcement of the State Veterinary College is neat, well gotten up, essentially professional and tells well of the opportunities that are offered, which, however, are proportional to the enormous financial support that the State has granted to the institution.

A. L.

ALL READY FOR CLEVELAND.

Before another issue of the REVIEW reaches its readers the forty-second annual meeting of the American Veterinary Medical Association will be a matter of history, and we expect to be the medium through which that history will be transmitted to the profession throughout the world, for in the September number of the REVIEW we will give a faithful account of all that occurs at that busy centre of veterinary activity—at least, all that is of consuming interest to the profession, leaving the minor details of the programme to the official chroniclers.

At the present writing every sign points to the largest gathering and most successful meeting from every viewpoint, ever held by the great national organization.

The splendid programme printed elsewhere covers every branch of veterinary science; no matter in what field of comparative medicine you may labor, you will find something upon the programme which will appeal to you through its relationship with your work. If engaged in private practice, there will be found material directly bearing upon the subjects which absorb your daily thoughts, problems which perplex you and upon which you need consultation and an interchange of experience with those best capable of appreciating your difficulties. If you are engaged in the Government service, inspecting in the abattoir or in the field, papers are announced dealing directly with your work by men following similar lines, while there are instructing pathological exhibits illustrating many of the subjects treated of. If you are delving into the complications of bacteriological research or applying the practical principles of preventive medicine on behalf of commonwealths or municipalities, you will find the latest advances in these rapidly developing branches brought under the enlightening influences of public discussion. If your energies are exerted in the teaching of comparative medicine in veterinary or agricultural colleges, the present occasion will offer the best opportunity to institute needed reforms in the educational problem, which is pressing with such force for solution. And so, it matters not what lines

you are working along, Cleveland is the place for you from the 15th to the 18th of the present month.

The practitioner is especially appealed to through this composite programme, for not only will instruction be afforded through the papers to be read and discussed, but the surgical and medical clinic bids fair to excel anything yet offered at a meeting of this Association, particularly with respect to technic and details; and it does seem as though this section of the programme is finally to be made worthy of the occasion, silencing the criticism which has hitherto been so generously bestowed upon it, principally by those who have contributed the minimum towards its successful management, either by personal exertion or pertinent suggestion. Any amount of descriptive writing will not compensate for failure to witness the surgical exercises or the other events of the clinic. Illustrating this remark, attention is called to the excellent report of the Secretary of the Veterinary Medical Association of New Jersey, in this number of the REVIEW, where in reporting the clinic held in connection with the Washington Park meeting, he simply refers to the operations and remarks that their description is impossible.

Thus the student must see that Cleveland offers him the greatest inducements in intellectual returns; but much more attractive does it all seem when it is taken into consideration that all of this is accomplished with the halo of a glorious holiday surrounding it. Whether accompanied by the members of one's family or journeying alone, the occasion will be a round of pleasurable, healthful, and restful recreation, among friends of other days, acquaintances newly formed of the kind that most interests one, and resulting in a renewed vigor and equipment for the work that lies before us through the years that are to come.

Verily, we say, do not miss Cleveland!

DR. ADOLPH EICHHORN, of the Bureau of Animal Industry, Great Bend, Indiana, will sail for Europe on the 2d inst., to attend the International Veterinary Congress at Budapest.

CHEERING WORDS FROM TEXAS.

In the department of "Society Meetings" in this number of the REVIEW will be found a record of the third annual meeting of the Texas Veterinary Medical Association, and Secretary Lewis' account of it indicates that the veterinarians of the Lone Star State are a progressive, enthusiastic and profession-loving body of men who are certain to place their State among the large number having laws recognizing and regulating the practice of veterinary medicine. In the minutes furnished by the Secretary for publication we find the following reference to this publication :

"By a unanimous vote, strong praise was accorded the REVIEW for its able work along lines of mutual interest, for its maintainance of a high standard among professional publications, and its staunch and unswerving championship of all that pertains to our professional welfare."

Such words from our colleagues are indeed gratifying, and go a long way toward lightening the burdens which necessarily fall upon the editors, who are busy practitioners, and give up many hours which should properly belong to recreation for the good which they are striving to do for their beloved profession.

NEBRASKA SECURES RECOGNITION.

In the April REVIEW the full text of the Veterinary Bill introduced in the Legislature by the Nebraska Veterinary Medical Association was published and its successful issue foreshadowed. We are pleased to announce that the bill became a law without any amendments, and the Governor has appointed a Veterinary Board consisting of Drs. H. L. Ramacciotti, J. S. Anderson, and A. T. Peters to carry out its provisions.

The past winter has been marked by successful activity among the veterinarians of many States, and at the rate the laws are being placed upon the statute books it will be but a short time before there will be no place for the man without a license.

THE SECRETARYSHIP of the State Veterinary Medical Association, it would appear, is becoming a popular stepping-stone to political preferment, and it is likely that candidates for this position will be very numerous at coming elections. Two of such officers have recently found favor with the citizens of their respective towns and have been elected to the high office of mayor. Veterinarian Stanley Smith, former Secretary of the Missouri State Association, is now the Chief Magistrate of Columbia, Mo., while Secretary W. H. Welch, of the Illinois Association, occupies a similar post of honor in his home city of Lexington.

DOES your practice embrace much surgery? If so, Cleveland is the place for you from the 15th to the 18th of this month. You can discuss it in the meeting and witness it in the clinic.

THE Ohio State Association has worked hard to bring every veterinarian in the State to Cleveland on the 15th to 18th inst. The Secretary had the dates in red ink on every envelope sent out by him.

THE MINNESOTA STATE LIVE STOCK SANITARY BOARD at its recent meeting added another field veterinarian on full time to its working force. This board work now gives very creditable positions to six veterinarians, who must by law be graduates of reputable colleges. The new field veterinarian is Dr. D. M. McDonald, formerly of Brainerd, Minn., and a member of the A. V. M. A. Minnesota veterinarians must surely be realizing that Dr. Reynolds knew what he was doing when he worked hard to help establish this Board, and put the State live-stock sanitary work directly under veterinary control. We understand that the last Minnesota State legislature appropriated an additional \$30,000 for the work of this Board, and that the prospect is good for further additional appropriations from the next legislature.

ORIGINAL ARTICLES.

HUMAN AND COMPARATIVE MEDICINE.

BY CHAS. H. HIGGINS, B. S., D. V. S.,

*Pathologist, Dominion Department of Agriculture, Ottawa, Canada.*Read at the Meeting of the Medical Society of Ottawa, held at the Water Street General Hospital, February 12th, 1904.

In selecting the title of my paper, I little realized how broad the subject which I had taken would prove to be, although I knew that the interdependence of the one profession on the other was greater than is generally supposed. Had I anticipated that there would be such a vast amount of material at hand I would have confined myself to a less comprehensive statement, that details might be given more prominence than is here possible. However, in dealing with the subject, the desire will be to present in a different light some of the more common facts concerning the relationship existing between human and comparative medicine.

As a rule, medical practitioners are accustomed to look upon the practitioner of comparative medicine as lacking in many of the essential qualifications necessary to place him on an equal footing with his confrères in human medicine. In this, I will not attempt to deny what is a well-known fact, namely, that men presenting themselves for the study of comparative medicine have not been required to show qualifications equal to those necessary to enter the modern school of human medicine; nor, has it in many instances been sufficient to place them in a position to easily assimilate the knowledge imparted to them or to use to best advantage the educational facilities placed at their disposal during their college course. This statement while true, is, however, not without its exceptions, for there are men engaged in the practice of comparative medicine who, previous to their professional studies, had pursued college courses. Also, there are men who have from choice taken up its practice after pursuing courses and obtaining with honors both degrees.

The men themselves, however, are not to blame for this lack of educational qualifications, nor can we say that the institutions where this branch of the one great profession, that of medicine, is taught, are wholly responsible ; for in many instances the teaching staff has worked unceasingly with little or no remuneration for their services.

On the other hand, the majority of institutions at present engaged in the teaching of human medicine are richly endowed, the teaching staff is as a rule well paid and applicants are required to undergo strict examination to determine their fitness before they are allowed to pursue their course.

Comparative medicine, I am happy to say, is awakening from its lethargic state, and is also, in certain instances, receiving the needed financial aid. At the present time almost all of the colleges have increased their curriculum from two to three years ; and now we note a further advance in some cases from three to four years, with a corresponding increase in the qualifications necessary for eligibility to pursue its study. This lengthening of the course is not without reason ; for, is it not much more difficult to learn, not only the anatomy but also the physiology, together with the therapeutic action of the various drugs, on, not a single specie, as is the case in human medicine, but upon a large number which are in no way related ?

Take, for instance, the horse, with a single stomach, relatively small for the size of the animal, indicating that he must be fed little and often to supply the necessary material for the repair of broken-down tissue : compare him with the dog, an animal that can live comfortably on one meal a day. Also consider the ruminants, with their four stomachs, the first of which acts as a huge storehouse, the second preparing the food for remastication at the leisure of the animal, after which, in its return down the œsophagus it passes these two stomachs and enters the third, from thence to the fourth or true digestive organ.

In the physiological action of drugs we have as wide a dissimilarity as has been noted in connection with the very brief mention of the digestive apparatus. For example, under the

influence of opium the pupil of the eye of the horse dilates, while that of the dog contracts. Strychnine may be used in large amounts with horses or cattle, while dogs are very susceptible to its poisonous effects. One might indefinitely discuss variations similar to those already mentioned.

In disorders affecting the lower animals, diagnosis is dependent on two factors, the history of the case, which in the majority of instances is given by incompetent persons, and upon the physical examination of the subject. Since the historical speech of Balaam's Ass, the lower animals have been deprived of the ability to communicate with man, consequently we are obliged to depend almost wholly upon the development of the reflexes to locate their disorders.

Thus, we are very forcibly impressed that the individual adaptability and the educational qualifications necessary to prepare practitioners of comparative medicine for their life work, should be equal if not superior to those accorded the student of human medicine. In comparative medicine, as well as in human medicine, the personality of the individual plays an important part in his successful career, it being as necessary in many instances to treat the peculiar whims of the owner of an animal, as it is equally necessary for the human practitioner to treat the patient and not the disorder.

Surgery, in its present state of perfection, has only been made possible through animal experimentation and the development of that specialty, bacteriology. To as great an extent as any specialty, surgery has been investigated by practitioners of comparative medicine, and, indeed, some of the more common operations of to-day were originated and first performed by men who made their living ministering to the ills of the lower animals. To be sure, many of these would to-day be termed "quacks," but they were nevertheless very skilful considering their work from the knowledge of their time.

To cite an instance, the following extract from Baas⁽¹⁾, being

(1) "Outlines of the History of Medicine and the Medical Profession." Joh. Herman Baas, M. D. 1889. Page 403.

a portion of an article by Gould (2), in the *Journal of the American Medical Association*.

"The first cæsarean section on the living and parturient woman was practiced by the sow-gelder, Jacob Nufer, of Siegershausen in Thurgau, on his own wife, about the year 1500. After thirteen midwives and several lithotomists had endeavored in vain to relieve her, her husband, having invoked the assistance of God and obtained special permission of the governor of Fruenfeld, operated, 'just as on a sow,' with such good fortune that the mother survived to the age of 77, and was able subsequently to bear several children—and even twins—in the usual way. Undoubtedly, therefore, the operation was unnecessary, and the same was true of many of the operations which soon followed; for cæsarean section became the fashion for a short time. A sow-gelder is said to have removed the ovaries from his daughter in consequence of her lasciviousness, during the 16th century (Weyer tells the story), so that such fellows as operative gynaecologists are to be considered the predecessors of Hegar, and to be praised accordingly.

"As a result of this enrichment of the technic of operative midwifery by a simple sow-gelder, the cæsarean section seems in the course of the 16th century to have been practiced repeatedly, e. g., in Italy in 1540 by Christof. Bain; 1531, in Neusse; 1549 by Paul Dirlewany, on Marie Volscer, in Vienna, etc. Now it was performed in a somewhat more becoming fashion, and chiefly by barbers, though some will admit as the first cæsarean section only the one performed by the surgeon Trautman in Wittenburg in 1610."

In more recent years we have the operation "tenotomy" first performed on the horse by a veterinary surgeon, Mr. Dick, father of the late Professor Dick, of the Edinburgh Veterinary College. Since that time the operation has been repeatedly performed in the relief of certain forms of lameness, particularly in horses. So successful has this operation proven in the hands of

(2) "Medical Discoveries by the Non-Medical," Geo. M. Gould, M. D., *Journal of the Amer. Med. Asso.*, May 30, 1903. Page 1477.

veterinarians that surgeons have taken it up in the repair of certain deformities of the human being, and it is frequently practiced in the majority of hospitals.

A further consideration of the relationship of the two professions may be considered by a brief mention of public health matters. It is the duty of the practitioner of human medicine to take precautions with a view to preventing the communicability of the infectious diseases common to man. It is as well the duty of the practitioner of comparative medicine to guard against the spread of contagious diseases among the lower animals, more particularly those which would, if allowed to take their course unchecked, jeopardize the live-stock interests of the country; also those which are communicable to the human being, and as well such diseases as would render the food products from animals unwholesome for human consumption. Both professions are concerned in the wholesomeness of our food products, and, as they are each educated on distinct special lines, their combined knowledge is invaluable to any country.

It is even necessary, in this age of specialization, to go further than a mere division of the work among the two professions, for the general practitioner of either branch, is neither able nor capable of making a complete study of the various questions which enter this great problem.

In the matter of milk supply, which no doubt is of more concern to you as individual practitioners, experimenters have shown the conditions it is necessary to maintain to make it pure and wholesome. Veterinarians, cranks on ventilation and general sanitation, indicate the conditions best suited to maintain the health of the animals. Chemical analyses of the various foods and also of the water given to the animals, as well as analyses of the material excreted by the system have given the proportion which furnishes nourishment to the body of the animal as well as that entering the milk. Breeding claims its share of attention and has been studied by practitioners of both professions with the result that it has been shown that the fat globules of certain breeds possess certain mechanical characteristics of value in

the artificial feeding of infants and invalids. The bacteriologist determines whether the water supplied the animals is free from injurious germs. The bacteriological examination of the milk itself has shown us that it is possible to have it so drawn that it will keep almost indefinitely under certain conditions without the addition of preservatives. It has also shown that milk containing a large number of bacteria is more to be feared, and is also a more potent cause of intestinal disorders in infants than has generally been supposed. Physiological chemistry has taught us that the heating of the milk above a certain point renders its assimilation more difficult, and also that milk highly impregnated with bacteria, even after pasteurization, contains, not the living bacteria but the ptomaines manufactured by them, which are in many instances more dangerous than the bacteria themselves.

Comparative physiological chemistry has shown us that the maternal milk of the lower animals is suited to the peculiar conditions under which the young are reared, and to the anatomical and physiological capabilities of the particular organism studied. What is true of the lower animals is also true in the case of man and in modifying milk for use in infant feeding the peculiar anatomical and physiological requirements should be uppermost in the mind of the physician.

In this matter of milk supply, the veterinarian has been to the fore and the modern dairy should be under his supervision that the advanced knowledge of scientific experts and medical practitioners may be made use of in producing a more wholesome food for the infants and invalids who are wholly dependent on others for this one article of diet.

The subject of "milk supply" is a very broad one, modern science having shown us the fallacy of the older ideas as to the regulations which should be enforced in its control.

The further discussion of foods will have to be passed over on account of the time that would be consumed by going into details in a matter of such importance, pointing out the responsibilities of each profession in their supervision and control.

In pathology and bacteriology we see the greatest evidence of the relationship of the two professions. Comparative pathology has within the past few years taken immense strides and it has indicated many facts, with the result that the treatment of common affections met with by the practitioner of human medicine has been completely revolutionized by the production of anti-toxic serums which are almost specific against the disease for which they are prepared.

In the discovery of the cause of diseases exhibiting a malarial character we find that the parasite of "malaria" in the human and "surrea" in horses were described by Laveran and Griffeth Evans, respectively, in 1880, but it remained for Theobald Smith, one of the greatest living comparative pathologists, to demonstrate that "Texas fever," a cattle disease of malarial character, was transmitted by an external parasite, the cattle tick (*Boophilus bovis*). Not only was it shown by him that the disease could be carried from one animal to another by an infected tick, but, that the active virus could be transmitted through the egg to the young nymph, which was itself capable of infecting susceptible cattle. Of such practical importance was this discovery that there now exists in the United States an imaginary line north of which Southern, or "tick infested" cattle, are forbidden, during certain portions of the year. This work stimulated other investigators and it has been proven that not only animal diseases exhibiting a malarial character are capable of being transmitted from animal to animal by an intermediary bearer, but also that certain diseases of the human race can be propagated in a similar way. Among the diseases affecting the human being carried in this manner are bubonic plague, yellow fever, dengue fever, the spotted fever of the Bitter Root Valley of Montana, and many others.

Other special lines could be taken up and it would be found that no great scientific advance had been made without recourse to the lower animals, and that practitioners of both professions are taking advantage of facts gained during such experimenta-

tion which have been but side issues in a long series of carefully conducted investigations.

In summing up, it is found that no matter to which profession we have allied ourselves, we are engaged in that praiseworthy occupation of saving life, and should therefore work hand in hand, each taking advantage of discoveries made by the other that our efforts may produce more beneficial and fruitful results in the usefulness and prolongation of life, whether it be of the human race or of the more unfortunate animals which they control.

"WHAT is the foot-and-mouth disease?" It is an ailment much prevalent among a certain class of public men, who have a bad mouth and every time they open it they put their foot in it. Next time you can ask a harder one."—(*Boston Transcript*.)

A TELEGRAM from Lethbridge, in the Canadian Northwest, states that at that point 200 horses are being held in quarantine on account of some of them being afflicted with maladie du coit. The Canadian claim is that the disease was imported into Canada by a stallion brought from Montana.

THE MAINE STATE BOARD OF VETERINARY EXAMINERS met July 10th and registered 29 veterinarians, and will meet again August 31st at the State House, at 10 A. M., and will register those who are entitled to be and who appear personally before the Board. After September 1st it will be unlawful to practice medicine without being registered.

MILES OF RIDING TO GET EDUCATED.—Frederick Morse, son of Park Morse, a farmer, was recently graduated from the College of Emporia, Kan. During the four years he was in college he rode horseback more than eight miles every day, going to college and home again, and was not absent a day, says an Emporia dispatch. Morse is twenty years of age. He estimates that he rode 10,000 miles.

AN attempt was made in the last hours of the Illinois Legislature to pass a bill repealing the law regulating the practice of veterinary medicine. The profession, ably assisted by influential stockmen, put the atrocious measure to sleep in committee. Veterinarians of the various States which have recently secured recognition will find that it is necessary to watch their interests while the legislature is in session.

THE MEDICAL MAN AND WHO HE IS.

A PLEA AS TO WHETHER THE MAN THAT PRACTICES VETERINARY MEDICINE IS A MEDICAL MAN AND PHYSICIAN,
OR DOES THE TERM BELONG EXCLUSIVELY
TO THE MAN THAT PRACTICES
HUMAN MEDICINE.

BY ERNEST I. SMITH, D. V. M., CORNELL UNIVERSITY, CHERRY CREEK, N. Y.

At this time of the year when so many young men have just completed their veterinary medical education, received their diplomas, earned their license to practice and finally entered into their chosen field of labor, there is no more fitting season to discuss who the medical man is. Never before was there a more opportune time for the study of veterinary science than there is to-day. Scientific inquiry is increasing to such a magnitude that in consequence the fields of research must correspondingly grow in number, therefore we have the great field of veterinary medicine and surgery opened up for those who desire to pursue a scientific course.

Within the last decade of years the empiric has lost what was once for him an excellent reputation as a veterinary medical adviser ; but now his services and advice are seldom solicited except in certain and remote localities where his prestige has been handed down to him from his forefathers and in which vicinity the college trained student has never attempted to gain a foothold. The charlatan's pharmacopœia is limited to a dozen or so domestic remedies and a few patent medicines ; the constituents of the latter he has no idea of nor does he have any knowledge of their therapeutic action. He enjoys no literary education that would give him a decent command of language, his morals, attitude and appearance before the public are not at all becoming to a gentleman. The personality that he maintains is often very convincing to those of his own class, but to the more refined it is extremely disgusting and offensive. Yet this

very man is duly licensed to practice veterinary medicine and surgery in this State of New York and many other States of the Union. He and his colleagues are generally spoken of by the people throughout the country as "horse doctors." Should they desire to refine their expression at all they might pleasantly call them "veterinaries," but they are not veterinarians and it is not proper for the veterinary medical profession to either term them as "horse doctors" or as veterinarians, but civilly speak of them as they are, ignoring their claim to any knowledge of medicine. We must live down the reputation that the empiric has established, not that we ourselves have committed the error, but to show the commonwealth that the error was injudiciously made by a fraudulent class of people, and that the profession they tried to represent is far different in morals, education and personage than they.

The standard of both American and European universities have attained such a high degree of excellence and uniformity that no one profession can look over the other ; if that were so it would be a very serious charge against the university in question. The directors of our universities are not so short-sighted as to allow any such state of affairs to exist, they arrange each course upon an equal basis, show partiality to none, and so establish each curriculum that they will stand the test and bear a search. It is true that there are advanced degrees in many of the courses, but that does not underestimate the student who has simply secured the one degree. Fortunately there are no advanced degrees in medicine, either human or comparative.

Upon two scientific subjects that have come to full view only within the last decade of years depends the practice of medicine. Before the full completion of these, the physician was groping in the dark. Many of these brilliant discoveries have been made by men who have devoted their entire lives to the study or practice of comparative medicine. Of none the less importance are these researches if they are made in the actual fields of practice, yet they are fewer in number and slower to reach the profession in general. In our college laboratories

of research is where the sciences of bacteriology and pathology are nearing their full completion. It is there that they have every convenience and apparatus and, moreover, the full opportunity for beginning and completing the work. It is safe to say that the largest scope of these researchers are ardent students of comparative medicine and, consequently, held a degree from a veterinary medical college. If it be, on the other hand, that they hold only the degree of M. D. they are none the less handicapped or no better fitted for their work. The secret of the successful part of it is to possess a broad scientific education, a liberal view of the laws of nature and an intense desire and love for the work ; so it is in actual practice, the spirit must be to perform the services wholly to the advantage of the patient with less regard for the one paltry dollar. If the services are conscientiously and judiciously performed by one who is properly educated and duly licensed for the profession the financial part will reward the physician twofold and his reputation will stand upon a solid foundation of sound principle.

The up-to-date veterinarian of to-day has his shelves lined with a complete supply of drugs, and is constantly watching the profession and the medical chemist for new therapeutic agents. No practitioner of comparative medicine stands well equipped unless his supply of hypodermic tablets and intravenous compounds are requisite in number and kind to combat against the most acute and critical diseases. To do this one thing does it not require that a man shall be an excellent student of pharmacology, *materia medica* and of the practice of medicine? Our universities are supporting colleges that will put a man to the front in both branches of medicine. It is true that there are inferior schools presuming to grant a medical degree within the limited time of eighteen months or even less, and worse than that there are correspondence schools sowing their diplomas broadcast throughout the country. The American Veterinary Medical Association has no business to recognize a veterinary medical college that does not lay out a course to cover three years of nine months each. Institutions

that cannot maintain this order of excellence, should, out of respect for American progression, step down and out. May the time speedily come that a course of four years of nine months each be required before the student can secure the degree of Doctor of Veterinary Medicine.

Our educators of veterinary science have done their part and are still laboring incessantly and it remains now with the graduates of veterinary colleges to show the people with whom they have to deal that they are not horsemen, stockmen nor agriculturists, but are strictly medical men, physicians for the intelligent practice of veterinary medicine. Although we have a close connection with the stockman and the like, yet at the same time be a medical man and let our profession stand apart and independent from such vocations; such an action will win the highest respect and esteem of the people. A strict adherence to the scientific side will bring us in closer touch with the entire medical circle. Those who practice human medicine will invite our names upon their society rolls. Our advice will be sought after concerning contagious diseases that affect the animal kingdom and are transmissible to mankind. The two professions should travel together and in perfect harmony with one another; this, however, can never be accomplished unless the veterinarian mingles in the best society and maintains a dignity, reserve and respect before men becoming to a professional man. The same will bring him before the people and the press as a medical man.

What is a veterinarian? Gould defines the term as belonging to one who practices veterinary medicine. Well, what do we mean by the adjective veterinary? Gould defines that as pertaining to domestic animals. The prefix forming the word veterinary is of Latin origin, meaning beasts of burden. What is a physician? Gould defines that term as belonging to the one who practices medicine. He does not limit the specie of patients that the man practices upon, but infers directly that if one practices medicine at all, he is undeniably a physician, and if he is a physician is he not a medical man beyond any

doubt? Gould is referred to in this article because he is supposed to be the standard authority in medical terms.

So many writers in the pages of the REVIEW speak of the medical man and physician as the term belonging exclusively to the M. D. What are they thinking of, to ignore their own claim to a medical education? What we all want is a higher standard in civil life and in professional life. In other words, be men among men. If we are not physicians, then we had better create a stirring revolution in the study of veterinary medicine.

For the beginner who is just starting out in practice there is one thing that will greatly tempt the integrity of his profession, and that is for a good responsible client to offer a generous fee if he will only cure a certain ailment and, on the other hand, "no cure, no pay." Any such offer as that accepted by the physician is a disgrace to him and the profession, and is not only well nigh empirical, but is emphatically empirical within itself. Moreover, to accept such an offer throws one off the honest list of physicians and places him among the men of doubt and of those who support institutions of lottery. Nature's course is so intricate that we cannot guarantee with safety the simple insertion of the hypodermic needle.

Some time ago the writer overheard a patron ask one of the foremost educators of veterinary science if he was sure he could cure a simple case of indigestion and the professor candidly remarked that he did not know, but he would try. Could a man of integrity and honesty give a more brilliant answer? To the students who were under the doctor's jurisdiction, that reply should be their watchword throughout each of their careers. No practitioner of human medicine of any worth at all will ever be so absurd as to attempt to guarantee his services to be a success.

It requires no small amount of anatomical knowledge to be able to undertake one of the major surgical operations and do it intelligently. Along with the operation undertaken, the operator must be skilled and practiced in the administering of anaesthesia, then at the conclusion of the operation comes again

those two important subjects, bacteriology and pathology. The attendant is expected to be able to foresee and take a perspective view of the field in order to be qualified to prophesy what the result may be, to know the nature of the bacteriological part and the organs affected, and last but not least, to know the extent the pathological lesions must reach before the critical period is approached. Who is going to know all of this, the "quack"? The answer to this interrogation will come at once and remain sure. No, the operator must be a physician and surgeon, and it is of little importance scientifically whether the subject operated upon was one of the human family or a domesticated animal, but if it was upon the latter, the only modification we can rightfully give to the terms physician and surgeon, is to modify them with the word veterinary, but that does not in any way destroy the full meaning of the word or words modified.

The State of New York, one of the leading educational States of the Union, specifies on the license diplomas for veterinarians "Veterinary Medicine and Surgery," and upon the same registration certificate for county purposes they particularly mention "Veterinary Physician and Surgeon." If veterinarians are not physicians, why does not the State of New York cancel the word physician from their official papers?

None the less important is the splendid tribute from the *Breeder's Gazette*, recorded in the REVIEW, March No., Vol. XXVIII, p. 1225. A paragraph of it reads as follows: "There was a time when the so-called veterinarian was so very generally a quack that the public had little faith in him, but veterinary science and education have progressed so far now that this prejudice, reasonable or unreasonable as it may have been once, has been for the most part removed. Indeed, the veterinarian properly educated nowadays stands on a complete professional equality with the M. D., providing he is alive to the demands of the hour and deports himself accordingly."

It is a fact beyond any argument that the man of to-day who holds a degree from a recognized veterinary medical col-

lege has established the very foundation of medicine, and upon the foundation any additional medical education afterward received must stand. The veterinarian's field of bacteriology and pathology is increased as his specie of patients are numbered, and above this comes another added responsibility in the way of susceptibility to infection of one patient over another.

The practitioner of medicine has two classes of symptoms to deal with, *i. e.*, subjective and objective. The human physician has the advantage that he can use both classes whereby he can safely arrive at a diagnosis, but the veterinary physician is confined exclusively to the objective symptoms and a little history, which of course is objective. One that has so educated his faculties that he may recognize every objective symptom and intelligently translate its meaning, is a physician to be feared by a few and lauded by many.

A brief summary and my task is done. We are public servants subject to variable criticism and many of our patrons look for us to be almost if not wholly infallible in our treatment, that we certainly fall far short of, but let us come nearer perfection in our dealings with men. Be honest and observe the Golden Rule in an effort to pronounce the prognosis of a doubtful case, educate the people that you are not a "horse doctor," but a physician strictly for the practice of veterinary medicine. The veterinarian will gain prestige, friends and patronage if he will maintain that dignity in every action of life. Fail to discuss the affairs of the horseman and strive to scientifically frame your language, not ambiguous, but straightforward, plain and simple to the mark. Our professors in the best veterinary medical schools do not ever presume to teach the student horsemanship, nor do they make an extra effort to apply a mode of treatment to any one animal unless it is strictly applicable to a named disease and patient, but on the other hand they are strenuous to broaden the student's mind, make him a thorough man of comparative medicine by educating him in all the necessary branches of medical science so that he may be able to treat medical and surgical cases on liberal and scientific principles.

ANATOMICAL NOTES.

BY DR. SCHMALTZ.

Translated by DR. A. T. PETERS, the University of Nebraska.

For some years I have found it no longer possible to publish an anatomical article of my own in the *Berliner Tierärztliche Wochenschrift*, although several of these have awaited publication. The space available for original articles has constantly been very urgently claimed, and the editor as well as the anatomy must therefore wait. The latter, however, must finally come to light in a periodical, since what is given in books, perhaps in small reports, is not noted in proportion to its practical importance. To make this possible for me in the *Berliner Tierärztliche Wochenschrift*, I will, now and then, discuss an anatomical subject, not as a study, but in the form of short notices, omitting everything introductory, secondary in importance and not essential. It is these anatomical details which have found no place in the descriptions of the text-books and thus are not generally known. This does not exclude the possibility that concerning one thing or another something may have already been written in some place. I will not trouble myself with the literature, as I expressly remark, in these small articles, which make no claim to the rank of studies.

I. NEUROTOMY ON THE PERONEAL NERVE.

Dr. Topper, staff veterinarian of the Royal Stables, said to me recently that the place which is now chosen for finding and cutting through the peroneal nerve for the purpose of treating spavin has various objections. The question arises as to whether the nerve could not be better found at a higher place. This is the case, and it is perhaps valuable, even to the practitioner, to follow the course of this nerve and to observe its ramifications.

The outer side of the tibia and of the knee in the horse is covered by the biceps muscle, which with three fleshy slips radiates to the patella, to the tuberosity of the tibia and into the crural fascia, which is continuous and blends into the tendon of

Achilles. Below the fleshy border of the biceps muscle the peroneal nerve arises and here its trunk is easy to find. It is covered only by the crural fascia, which here consists of two divided plates or laminæ, the lamina superficialis and the lamina profunda. (Fig. 3, f, c, s, and f, c, p.) The deep, stronger lamina is the aponeurosis of the biceps and passes in the direction of its principal fibre strands, corresponding to the muscle, from behind and above forward and downward. The superficial lamina, among others, arises from the fascia of the biceps and shows fibres running in various directions. For practical purposes the flexed position of the knee will best correspond. The directions the fibers of the deep lamina or layer of the crural fascia have in this flexion of the knee (almost at right angles) are shown in figure 2; the superficial lamina or layer of fascia as well as the skin has here been removed.

The peroneal nerve, arising under the fleshy border of the biceps, lies on the strong extensor digitalis lateralis muscle, which it crosses obliquely, at a finger's breadth below the tuberosity on the fibula. In this secure situation it is easy to find and here it divides very constantly into four branches.

They first branch off together or closely side by side the muscular twig for the extensor digitalis lateralis (II in the figures) and the long superficial branch to the foot (III in the figures). They lie midway on the fleshy belly of the extensor lateralis muscle, the superficial branch to the foot runs along this muscle and then goes superficially over the flexor surface of the tarsus to the metatarsus (see fig. 1).

After giving off these two branches, the peroneal nerve reaches the groove or sulcus (obvious without a preparation) between the lateral and common extensor of the toe and divides, just before gaining this, into two branches. The one superior (IV in the figures) goes shortly and obliquely into the muscular groove to supply the common extensor [M. extensor dig. communis seu pedis longus] and the m. tibialis anterior, the other (V in the figures) is the deep branch to the foot of the peronæus wanted. This turns downward and likewise disappears in the

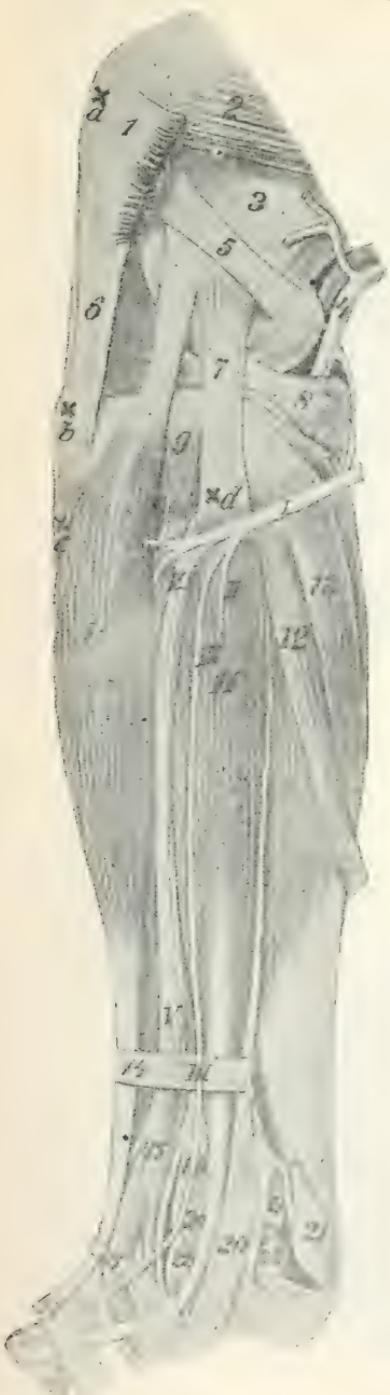


FIG. I.

X a, patella; X b-c, tuberosity of the tibia (highest and lowest points); X d, tuberosity of the fibula. I, nervus peronaeus; II, its twig for the m. extensor digitalis lateralis; III, its superficial branch to the foot; IV, muscular twigs for the extensor digitorum pedis longus and the m. tibialis; V, the deep branch to the foot, the object of the operation.

I, attachment of the biceps; 2, musc. vastus; 3, condylus femoris; 4, art. poplitea; 5, lateral ligament of the patella; 6, lateral straight ligament of the patella; 7, lateral ligament of the knee or stifle joint (it ends below on the fibula and on this corresponds to the m. ext. digitalis lateralis); 8, m. popliteus; 9, m. tibialis; 10, m. extensor digitorum pedis longus and 11, m. ext. digitalis lateralis (the two extensors of the toe touch each other and have only a deep groove or sulcus between them; in the figure, 10 is drawn down somewhat forward, so that between 10 and 11 an interspace arises, in which the musc. tibialis, the vena tibialis anterior and on this the nerve sought for, become visible); 12, m. soleus; 13, m. flexor dig. profundus (the light stria between it and 11 is an intermuscular ligament); 14, the superior transverse ligament; 15, vena tibialis anterior; 16, middle, and 17, inferior transverse ligament; 18, art. metatarsa magna; 19, tibia; 20 long and short lateral ligament of the tarsus; 21, tendon of the flexor of the coffin bone and tendon sheath, the opened articular capsule in front; 22, talus or astragalus.



FIG. 2.

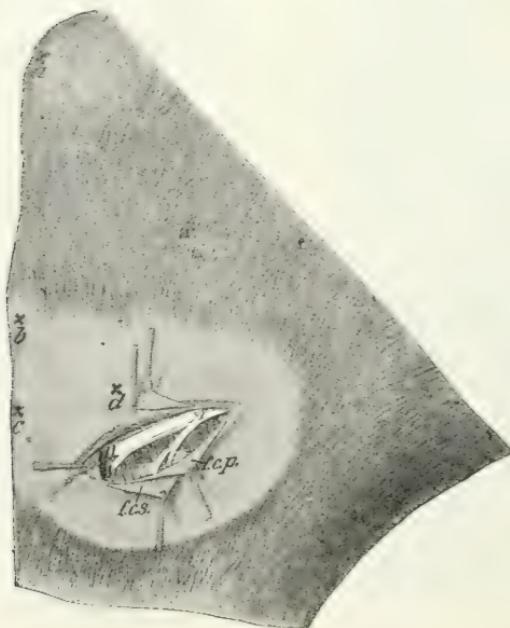


FIG. 3.

groove between the two extensors of the toe, in which it runs downward on the vena tibialis anterior, as figure 1 shows. Above the superior annular ligament (fig. 1, 14) it sinks deeply, passes over the flexor surface of the tarsus, while giving off a twig to it and goes below this, passing beneath the extensor tendon of the toe (medially, hence not visible in fig. 1) again to view on the metatarsus.

I know that it is customary to look for this last mentioned deep branch to the foot of the peronæus, for the purpose of cutting through it, in the muscular groove between the two extensors of the toe. It lies deeply here and is concealed, since in figure 1 the two extensors of the toe (10 and 11) are drawn apart; in normal position, however, they touch each other and cover the nerve, which here lies closely in contact with the great vein. Hence it is not easy to find the nerve here, aside from the surgical disadvantages with which the cutting through of the crural fascia parallel to the muscular groove might often be attended.

On this account it is more desirable to undertake the neurotomy of the deep branch to the foot of the peronæus higher or closer to the knee and indeed directly after it branches off from the muscular branch (IV), before it disappears in the groove between the extensors of the toe. The place is indicated in all the figures by the V indicating the nerve (above).

The nerve is without doubt easiest to find here, since it shows itself immediately after cutting through the fascia. The obliquely lying nerve trunk is seen on the firm support of the lateral extensor of the toe. A mistake in regard to the branches is not possible. Midway on the lateral extensor of the toe is given off the noteworthy superficial branch III without further complications (the small muscular branch II arises near it whether one sees it or not). Then the nerve trunk goes directly into the muscular groove (between the two extensors of the toe) and goes deeply into this. Just before it passes deeply (in case the groove is easy to lay open) one finds the division into the two terminal branches. The muscular branch continues in the

direction of the trunk, of which the branch turning downward toward the foot is the one sought.

The cut for finding the nerve (in the knee, flexed almost to a right angle, see the figures) is to be made obliquely to the axis of the leg (or tibia). It thus becomes not only parallel to the nerve trunk, but lies also in the direction taken by the fibres of the biceps muscle and of the deep (strong) lamina or layer of the crural fascia (which, as is known, is the aponeurosis of the biceps). The contraction of the muscle will thus not tear apart the cut edges in the fascia, but will draw them together.

The nerve is seen immediately after cutting through the skin and the fascia, it appears through the deep lamina or layer of this, no vessels lie near here; the two laminae of fascia are here completely divided from each other and offer themselves separately to the knife, since the cut must naturally be made very superficially.

The place for the operation may be determined easily and with absolute certainty. The points of orientation are marked in the three figures by crosses and corresponding letters, the proportionate distances also are to be learned from the figures, which are one-third of the natural size. If one goes on the flexed knee from the patella (a) downward on the anterior surface of the knee, he finds the tuberosity of the tibia (b-c), which naturally also is directly recognized. This bony tuberosity has a certain length and we may feel its superior (b) and its inferior (c) end. If one palpates from the lower end (c) transversely over the leg toward the hock, he will feel, situated a little higher (toward the patella) than c, a distinct process through the skin, the tuberosity of the fibula d. A finger's breadth below (toward the foot) this tuberosity d, lies the nervus peronæus and here one may cut in on it. The cut is made about parallel to the line connecting c and d (a little less, so that the two converge toward the hollow of the knee). Since the branches of the peronæus turn downward toward the foot, the incision can better fall a few millimetres above than below the nerve trunk; the "finger's breadth below d" is correct therefore in any case.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

VALVULAR DISEASE OF THE HEART IN A YEARLING FILLY.

By E. A. WESTON, G. M. V. C., Launceston, Tasmania.

The subject of this note was a bay yearling draft filly. I happened to see her when out attending another draft horse in the same stable, but she was evidently dying, and her owner did not desire her treated. She was unable to rise, and being in a narrow stall, I did not sound her, which I much regretted afterwards. I, however, requested her owner to inform me should she die, and I would conduct a post-mortem.

The history of the case was that last December the filly began to go off her food, mope about the paddock, and lie down a good deal. From this out she gradually wasted away, despite the best feeding and care, until she died on April 12th. Previous to death oedema of the extremities set in, and her owner said her heart could be heard beating tumultuously and irregularly. Post-mortem revealed general anaemia, extensive oedema of the lung, enlargement of the liver, which weighed 17 pounds (normal weight in adult horse 7 to 12 pounds), though the structure did not appear to be altered and sclerosis of the kidneys, more especially affecting the cortical layer. In the circulatory system, however, was found the cause of all the other troubles.

The heart was hypertrophied, and extensive vegetations existed on the tricuspid valves separating the right auricle from the right ventricle, while no trace of the valves guarding the entrance to the common aorta could be seen, their place being filled by extensive vegetations, which completely obliterated them. At the origin of the mesenteric arteries the intima was destroyed, and veg-



A. VEGETATIONS. B. POSTERIOR AORTA.

etations took its place, but I could find no trace of the armed strongyles usually found here.

BOVINE UTERUS CONTAINING THE BONES ONLY OF A FŒTUS.

By J. WILLIAM FINK, D. V. S., U. S. Inspector, Harrison, N. J.

I am sending the REVIEW herewith a photo of the uterus of a cow containing all the bones of a foetus, but no soft tissues. Evidently this is one of the cases, such as are described in textbooks, where the retention of the foetus, caused by transverse presentation, at the end of gestation, as the envelopes ruptured and air became admitted through the os, there ensued decomposition of the soft tissues, which are gradually passed off



or discharged, leaving the bones. Their relation and position in the uterus in this case indicate a left cephalo-iliac position of the foetus. The bones are all present and well formed, the walls of the uterus considerably thickened, as seen in the photograph; near the horns it is one and a half inches thick. On the inner surface the mucous membrane was very badly torn and presented a ragged appearance, no doubt due to contact with the bones, and causing chronic metritis.

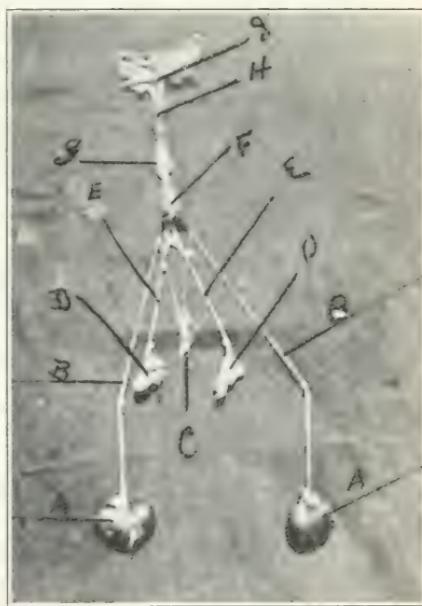
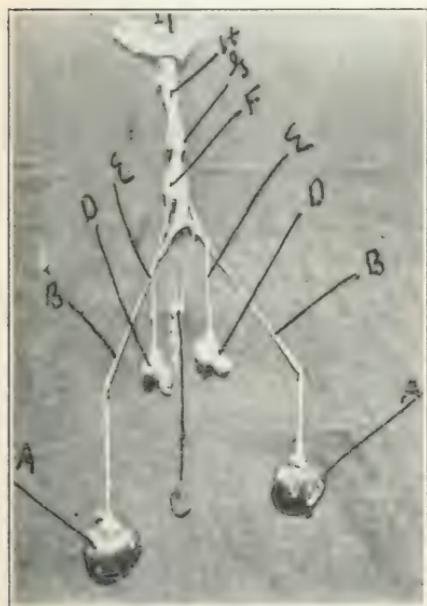
The uterus measured 18 inches from the bifurcation of the horns to the os uteri, and 8 inches across at the widest point.

The bones were chocolate brown in color, and there was about six ounces of the same colored fluid, having a foul odor.

ORGANS OF AN HERMAPHRODITE SHEEP.

By E. A. WESTON, G. M. V. C., Launceston, Tasmania.

Enclosed you will find a couple of photographs of the organs of an hermaphrodite sheep, which may be of interest to some of your readers. The subject was a six-tooth, well-bred merino who continually hunted the ewes round and jumped upon them in season and out of season without being able to accomplish the sexual act. Externally he-she-or-it had the organs of a ewe, with the exception of a somewhat enlarged clitoris, lying in a pocket under the inferior vulval wall. Anterior to this could be felt a thickened fibrous body, about the thickness of one's finger, which appeared to represent the body of the penis, the enlarged clitoris resembling the glans penis in structure. On



EXPLANATION OF PHOTOS.

- | | |
|---|---------------|
| A. Kidneys. | B. Ureters. |
| C. Bloodvessels of bladder. | D. Testicles. |
| E. Uterine horns. | F. Bladder. |
| G. Vesiculae seminales. | H. Vagina. |
| I. Glans penis protruding from vulva.
In No. 1 shows fibrous body of penis with stick beneath. | |

E. A. W.

post-mortem a rather curious condition was seen. The animal possessed a vagina and uterus, the body being small, and the horns long, and at the extremity of the oviducts there existed in place of the ovaries two small but complete testicles. At-

tached to the walls of the vagina were two glandular structures representing the vesiculae seminales of the ram. The enlarged clitoris lay in a pocket in the inferior wall of the vagina, but was not directly attached to the fibrous thickening which represented the remainder of the penis.

RUPTURED STOMACH UNDER PECULIAR CIRCUMSTANCES AND WITH LACK OF USUAL SYMPTOMS.

By HUGH THOMSON, V. S., Newman Grove, Nebraska.

July 7th I was called by telephone to a sick horse about 11 P. M., and arrived at 11.30. The horse had worked all day cultivating corn, apparently in the best of health; left the field about 7 P. M. All of the horses went to the tank and drank what they wished. This animal is a mare about 12 years of age, colt of three months by her side. After drinking water she laid down and rolled on her back against the barn. When she arose she began to tremble, but showed no other symptoms. Not getting any better I was telephoned for, and I found her trembling all over, body and legs cold, breathing heavily, with flapping of nostrils; keeps nose continually to the ground; raises it occasionally about a foot and drops it immediately; pulse about 60, temperature $105\frac{1}{2}$, no bloating and never had been; showed no pain except the first roll. Diagnosed stomach trouble, with probably a rupture. Gave a stimulant and febrifuge drench. She showed at no time any of the symptoms of rupture. Animal stood up till she died next morning about 5 o'clock. Would occasionally press head against manger. I placed two heavy blankets over her to try and bring heat to the body, which I did with pilocarpine hypodermically.

Post-Mortem.—Rupture of the greater curvature of the stomach, muscular and serous coat, over a foot long, about three inches wide at widest part. I should judge it had occurred about three weeks before as the edges were smooth and glistening, and had healed entirely in the centre. There was a hole through the mucous coat the size of a 50-cent piece, and a clot of blood. The stomach was full of corn and hay, well masticated; abdominal cavity full of dark fluid and caked food; thoracic cavity also contained food and fluid.

Now, to me this case is interesting and may be to the REVIEW readers. At no time did she vomit nor sit on her haunches, symptoms given of rupture. Inquiring further, I found this animal had been in the pasture and had probably experienced an

attack of indigestion, which she undoubtedly had, and recovered, rupturing the muscular and serous coats. The stomach being full of food on the 7th, and drinking more water than it could hold in its weakened condition, the fatal complete rupture took place.

A PECULIAR CASE OF PLEURISY WITH AN INTERESTING HISTORY.

By M. H. REYNOLDS, University of Minnesota, St. Anthony Park, Minn.

The case herein described was apparently so unusual in many respects, and so important, in view of what seems to be reasonable inferences, that it has been deemed by the writer worthy of record.

The animal involved in this case was an aged Guernsey bull. The writer did not make up the history notes of this case, but saw the animal several times during the illness.

History.—This bull was slightly sick sometime during the past winter, at least six or eight months ago (exact date cannot be given), and very little is known concerning the nature of that illness. He showed the first evidence of his recent sickness on May 20, 1905. At that time he refused to eat and was dull. There was marked constipation, with some flatulence, lungs apparently sound, but not examined. He was given three pints of raw linseed oil and two ounces of turpentine.

May 23d.—There was no improvement, increasing weakness, respiration very short; condition of bowels the same; temperature normal.

May 24th.—No improvement: lying down part of the time and on his feet part of the time, changing at easy intervals. Respiration difficult, painful, very short and abdominal. Slight friction sounds could be detected, but there was some uncertainty. There was an area of marked dullness over the lower portion of the chest cavity; circulation was very poor, extremities very cold; some pain on intercostal pressure, but not marked. Apparently he disliked to move about much. Temperature normal.

Diagnosis.—Traumatic pleurisy, with possibly pericarditis.

Prognosis.—Bad.

May 25th, evening.—Mustard plaster was applied over the chest. Constipation persists and the patient was given further laxative treatment. This laxative dose was repeated on the morning of May 26th, and on the evening of the latter day stimulants were given.

May 27th.—Similar treatment continued; weakness increasing, circulation very poor; pulse 120; respiration very shallow. Case considered hopeless since the 24th.

Treatment continued during the 28th; died at 6 A. M., May 29th.

Temperature during the entire course ranged about 102; never more than 102.5, then gradually running down to 100 on May 28th.

Autopsy.—The chest cavity contained three to four gallons of thin, light colored dirty fluid with a foul odor. The parietal pleura was much thickened, rough, dirty brown color, especially on the inferior half, the animal being in normal position. There was an area of congestion on the left costal pleura 10 or 12 inches in diameter, just below the vertebral column; lungs adherent to costal and diaphragmatic pleurae. The entire visceral pleura very dark; several chocolate colored caseous masses, more or less nearly round, about 2 c.m. in diameter, free in the chest cavity. A considerable amount of light colored gelatinous fibrinous exudate on the right side irregularly elongated and measuring 2.5 c.m. by 8 c.m.

Lungs.—Very much shrunken, dark, heavy, extensively filled, apparently no normal lung substances.

Heart.—Pericardium thick, adherent to the epicardium very extensively. Parts of the heart not adherent were rough and of the same dirty color as the costal pleura. There were dark, congested areas (possibly haemorrhagic) beneath the epicardium. The myocardium was soft, and had a parboiled appearance.

Liver.—One small area deep in the substance of the liver was very peculiar. Possibly a haemorrhagic infarct or angioma (uncertain). The liver appeared somewhat enlarged; the edges were thickened and the gall-bladder was very much distended. *There was one old sinus in the reticulum wall, extending to and through the pericardium.*

Note.—The adhesions beneath the pericardium and epicardium were very firmly organized, apparently several months old. There were several other and similar sinuses in the diaphragm, some one of which had probably perforated into the pleural cavity and set up the recent necrotic, putrefactive pleurisy which was the immediate cause of death.

There were evidently two very distinct stages in the development of this case, with a very considerable interval. In the second stomach we found a collection of foreign bodies, including nails, wire, and hard coal cinders. The adhesions between

the visceral and parietal pleuræ were much more recent and less firmly organized.

Here was a very peculiar case—indeed, a very severe pleurisy, but with no temperature, little pain or soreness evinced. The heart lesions were old and of such a nature that they could not have materially modified the symptoms that came from the recent and active pleurisy. The animal would lie down and get up, changing at easy intervals like a healthy animal; there was nothing unusual about the attitude. The only available evidence of pleurisy was the apparent dullness over the lower portion of the chest region, a slight pain on intercostal pressure, and a general disinclination to move about and the very short respiration, which was evidently due to the very little amount of useful lung tissue and the very extensive adhesions between the parietal and visceral pleuræ. And yet here was a most intense and extensive inflammation, involving both the parietal and visceral pleuræ.

ALL roads lead to Cleveland this month.

DR. J. L. ROBERTSON, of New York, preceded the Eastern delegates to Ohio, to repair the fences on his Buckeye farm.

PRESIDENT KNOWLES and Secretary Repp, although geographically far apart, have throughout the year kept in close touch on matters concerning the welfare of the Association, and have worked like beavers to make the approaching meeting of the A. V. M. A. the great success which it promises to be.

DUTIES OF PHILADELPHIA POLICE IN REGARD TO PROTECTING ANIMALS FROM CRUELTY.—The Director of Public Safety has issued the following order to the Philadelphia police: "There seems to be an utter disregard on the part of some of the officers of this bureau of the orders which have been repeatedly issued as to the action which must be taken upon complaints when made to them. A number of complaints have recently been received of wanton cruelty to dumb animals, which, when reported to officers, have been disregarded on the plea that the officer did not see the occurrence and could not make an arrest unless he did. When such complaints are made to a patrolman it is his plain duty to at once thoroughly investigate the matter and to report the facts to the station house, that adequate steps may be taken to punish the offenders. When a patrolman sees a horse lame and sore and totally unfit for work which a brutal driver compels it to perform, it is his plain duty to at once arrest the driver, and not instruct a complainant to get a warrant."

ARMY VETERINARY DEPARTMENT.

VETERINARY EDUCATION AND THE ARMY.

The *Army and Navy Register* of June 17, 1905, contains the following note :

No one seems to have heard of the examination for veterinarians, which examination has been pending beyond the memory of man almost. There are those eternal six vacancies—no more and no less. At last accounts there were a number of candidates, one or two of whom promised to come out of the ordeal sufficiently unscathed to get onto the list of veterinarians.

With this note as a text, it is timely to inquire into the causes that lead to—those eternal six vacancies in the Army. Since the Acts of Congress of March, 1899, and February, 1901, there are allowed by law for the Army forty-two veterinarians, thirty for the fifteen Cavalry regiments and twelve for the Artillery Corps. To procure this number of veterinarians, eleven examinations have been held in all : one in 1899, one in 1900, two in 1902, four in 1903, by which from one to eight veterinarians were passed. In 1904 and 1905, three examinations were held, but no candidate passed, leaving still six vacancies. Thus, during six years of vacancies and examinations only thirty-six veterinarians have been found qualified for the army veterinary service.

It has been maintained by colleagues in civil life that this condition of affairs is the result of the low inducements offered for entering the military service, that the position itself—as any military position—is not attractive to the young American veterinarian, and that we shall not fill these vacancies until the position is made more proportionate to its rather high requirements. There is some truth in this assertion, as we all know that the army veterinary service has been a sore spot in the body veterinary of the United States ever since our profession has asserted its own standing and independent professional action—some thirty to forty years ago.

On the other hand, there has never been a dearth of applicants for the army veterinary service ; in fact, they have been counted by the hundreds. As an instance, the President of the Examining Board that met at Fort Myer, Va., early in 1900, stated that there had been more than one hundred and twenty-five applicants for that examination ; that after hard work in sifting the applications, twenty names were finally agreed upon as the most promising candidates, of which only five passed

the examination. All the other applicants showed more or less illiteracy in their applications; or their testimonials, recommendations, etc., came from "prominent" livery-stable men or other persons of "low social standing," and that the diplomas of many applicants, while gaudy in appearance, did not impress the members of the Board as coming from colleges on a par with "academies," or universities.

This is only a general statement, but what causes lead to individual failures of candidates, may be judged from one case of the writer's knowledge. About three years ago a young veterinarian asked by letter for the particulars in regard to entering the service, and, although I had no faith in the college from which he hailed, I gave him the benefit of my doubt from personal unacquaintance, and advised him what course to pursue. A year later I heard that he had failed. Soon afterward I happened to meet a member of this Examining Board, and inquired about the cause of his failure. The officer stated: "Dr. X. failed mentally, physically and morally." "Whoa," I said, "may I ask some particulars?" "Well," he replied, "he failed mentally because he was a veterinarian but not an educated veterinarian; physically because the surgeon reported that he had some female disease, and morally because we invited him to the club and after two drinks he used obscene language. Now, we don't expect saints in the army, but neither do we want the lepers of your profession."

This may have been an extreme case, and many young men, clean in body and strong enough morally, may have failed from want of that general and professional education which officers, comprising the examining boards, consider necessary for the army veterinary career.

This leads us to the question, what is understood in the Army by the term "Educated Veterinarian"? Education is a broad term and differently interpreted by different classes of people. It is a delicate subject to discuss, because the lawyer, physician or veterinarian, who has had only a common school education and has then run through some college that makes as its principal claim to be "practical," considers himself an "educated professional man." He is, perhaps, acknowledged as such by people of less education than himself, but not acknowledged as such by men who have had the advantage of higher education, *i.e.*, the graduation from a high school, with an additional degree of B. S., etc., from a university, finishing with a strict and thorough course of four years in medicine.

Similarly high is the standard of education in the Army. There is only one military school in the country which bears the title of "Academy." Its course has been a strict four years course within the memory of living men, and the entrance examination has been forced up and up until it is now quite high. Its students are selected from the good families of the country, and the polite and cultured social life maintained at the academy by old tradition, foreshadows the peculiar social life of the Army, without which it could not be content in its isolated situation. An officer, reared in such surroundings, who happens to be on a veterinary examining board, is little impressed by the claims of a candidate that he is an "honor-graduate from an up-to-date practical veterinary college"; that he can blister and fire; do all sorts of operations; compound medicines scientifically; give capsules with dexterity; kill horses for glanders and surra, etc. These things are looked upon by such an officer as akin to a trade, because the army farrier has been attending to them for a hundred years, and is still attending to them where there is no veterinarian. He longs for the "educated veterinarian," a young man versed in his profession deeply and broadly; a man with whom he can talk horse, talk conformation of the cavalry horse according to mathematics, spending an hour or so in discussing the proper position and direction of the pastern according to the parallelogram of forces; a man with whom he can talk confidentially over matters of horse of his troop and have professional secrecy observed; a man who can talk with him about the use of horses by Xenophon, Cæsar, Frederic the Great and Napoleon, what these horses looked like, how they were bred, and what they accomplished in the great wars of history; a man who can intelligently explain to him what the bacillus of glanders is and the parasite of surra; a man with whom he can share a tent and a blanket in camp on an equal social footing; with whose family his family can enjoy an evening at music or the reading of Shakespeare on a long and dull winter evening. Such a man will be acknowledged as an educated veterinarian, and he will be treated with due respect and cordiality and made one of the great family that makes up the social life of a military post in this country. If he has not these accomplishments, he will receive polite indications to find his company among the undesirable element in the Army, and he may, and often does, get disgruntled with the service, and dissatisfied with his profession, which he wrongly accuses of being below that of his sister profession, medicine, which is older and

more developed in the Army, and has the lustre of higher rank shining about it brightly.

Let no young veterinarian deceive himself into the belief that he can or will be acknowledged in the future as an educated veterinarian unless he possesses these and similar accomplishments. But above all, let no professors, deans, directors or presidents of veterinary colleges deceive themselves into the belief that veterinary colleges which exact less than a graduation from a high school as entrance, and less than a strict, full and complete course of four years in veterinary medicine, will be acknowledged as on a par with the colleges of the learned professions. The Army will not acknowledge them as such, because it has a right to specify its own standard of education, and let us hope that this same standard be followed in the future by all institutions or individuals seeking the services of intelligent, capable and responsible veterinarians. Necessity demands, that our National Association look this situation squarely in the face, and take some steps to even up matters of veterinary education in accordance with the lofty spirit of progress and just power of action.

OLOF SCHWARZKOPF.

* * *
EPIZOÖTIC LYMPHANGITIS.

FORT OGLETHORPE, GA., July 20, 1905.

Editors American Veterinary Review:

DEAR SIRS: The last three lines on page 318 of the June number in Dr. Schwarzkopf's review of Captain Pallin's treatise of Epizoötic Lymphangitis prompts me to send you the enclosed photo of a case I had under my care at Batangas, P. I.,

which I think shows the lesions on the shoulder very distinctly. In the large majority of American horses that came under my care I noticed the neck generally showed the first manifestation of the disease, also on the side of the breast; and in the native ponies nearly always severest lesions on the hind-legs and sides. The thermo-cautery locally and hydrarg biniodii internally gave me good results. The mucous



membrane variety was generally fatal. WILLIAM P. HILL,
Veterinarian 12th Cav.

EXTRACTS FROM EXCHANGES.

FRENCH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

INTERESTING CASE OF HYGROMA OF THE POLL [*Leon Dupas*].—An aged mare has on the poll two cystic tumors, of 18 months standing. These are separated by the insertion of the mane. They are elongated; the left measures 12 centimetres in length and is as big as the fist; the right twice as large (measures 25 centimetres). They are painless, hard and prominent when the head is flexed, rather soft and fluctuating when it is extended. They evidently communicate. The diagnosis is easily made out. The treatment was complicated and lasted quite long. First deep needle cauterization was resorted to—thirty points on the right, fifteen on the left. Large escape of fluid followed the operation, and of course reduction of size of the tumors. Two days later they were as large as ever. A second cauterization was followed by the same result. Then came in succession free incision of the two lobes at their extremities. This was followed by the exit of about a thousand small riziform masses. Tents were introduced in the incisions of the cysts, to allow antiseptic irrigations. Thus suppuration is established. A hard, warm and painful swelling appeared at the upper end of the left tumor. Lymphatic cords appeared along the neck. The swelling became fluctuating, and puncture with the cautery gave issue to an abundant collection of pus. Still the tracts of the cystic tumors did not show tendency to close, but assumed the characters of fistulæ, which resisted treatment with oxygenated water, tincture of iodine, nitrate of silver, etc. It was then that in despair the four fistulous tracts were freely cut open and continued irrigation, night and day, was started. With this last attempt recovery was completed in thirteen days. The author regrets that he did not resort to this last treatment first of all, and saved the two months during which the mare had been laid up.—(*Rec. de Med. Vet.*, Dec. 15, 1904.)

CASE OF VOMITING IN A HORSE [*P. Castel*].—It is a Percheron gelding, 10 years old; he has never been sick in the last five years; yet, it has been observed that in a violent pulling effort he would show signs of choking. After a day of good

work and a good night meal, he refuses his food the next morning and rejects alimentary detritus by the nostrils. The animal is uneasy, has slight colics, carries the head extended, salivates abundantly, the nostrils are dilated and soiled with rejected food. He swallows readily a mucilaginous drench given to him. Nothing particular about the chest. Diagnosis is not made, but the case considered fatal. Treatment of counter-irritation, opiates, etc., is prescribed, without expecting results. The vomiting is kept up all the time until death, which occurred 22 hours after. Nothing was found at post-mortem. Intestines empty, stomach contained small quantity of food with large quantity of water. Ante-mortem clot in the pulmonary artery. All other organs normal.—(*Revue Veterin.*, Jan., 1905.)

TREATMENT OF PURPURA WITH INTRAVENOUS INJECTIONS OF COLLARGOL [M. A. Mollereau].—Although serotherapy is the treatment now in vogue and gives much satisfaction, there are cases where it seems to fail, and no matter what interpretation can be given, one is tempted to resort to other forms of treatment. Such has been the case with the author, who has had opportunity to try the therapy inaugurated by Dieckerhoff, viz.: the intravenous injection, repeated daily, of 25 c.c. of a solution of collargol at 2 per cent. Mr. Mollereau records nine cases out of which he has obtained eight recoveries. The number of injections has varied according to the relief obtained; some animals required but four, others demanded eleven and twelve. The injection is generally followed by a reduction of the temperature and an improvement in the swelling. When the solution is fresh there is no general disturbance. In one case where the solution was several days old, it gave rise to great excitation of the animal, generalized muscular twitchings, increased respiration; these manifestations, however, did not last long. In one case a marked reduction in the urinary secretion was noticed after several days of treatment. One case is mentioned in which the disease made a second appearance after recovery of the animal, which had been able to work for nearly a month after. The urinary disturbances that are observed, readily subside with the administration of diuretics. The important condition of success, according to Dieckerhoff, was the use of fresh solutions only.—(*Bulletin de la Soc. Cent.*, Dec. 30, 1904.)

SUDDEN DEATH BY RUPTURE OF MESENTERIC VARICOUS VEINS IN A HORSE [Leon Dupas].—A skittish mare is brought

to the exercising ring, made to trot, turns round the ring once, stumbles on both knees, tries to get up and falls on the right side; two minutes after she is dead. She had no bad antecedents, having been laid up from work only for a trifling thing, lameness. Post-mortem: The abdomen opened and the cæcum and colon removed, large masses, of dark red color, soft and fluctuating, are found in the left flank. They are situated in the mesentery, and well exposed when the small intestine with its peritoneal support is taken off from the abdomen and laid on the floor. One of the haematomas is situated about three metres from the pylorus. Another, much larger, having the aspect of a large ox liver, is about three metres and a half from the first. The third is situated near the second, in the middle of the mesentery, above the anastomotic arch of the arteries of the small intestine. The quantity of blood contained in these tumors was estimated to be about ten litres. Besides these three large haemorrhagic centres, there were five others, smaller, situated in various points of the mesentery, on a level with the origin of the ramifications that form the anastomotic arches. The entire venous system of the mesentery is congested. Careful examination of the condition of the bloodvessel after the removal of the blood, revealed that before death there were eight mesenteric varicous veins, three of which, much larger and older than the others, had in breaking open given rise to haemorrhage and afterwards to cardiac syncope.—(*Bullet. de la Soc. Cent., Dec. 30, 1904.*)

CEREBRAL TUMORS IN A HORSE [M.M. Reoire and Forgeot].—The subject was a fifteen-year-old pony, which for some time had lost his energy, became difficult to drive and always wanted to go to the left. Finally he dropped on the road, breathed very slowly, and after half a day of somewhat comatous condition died, notwithstanding treatment of bleeding and mustard applications on the legs. At the post-mortem three tumors were found in the cranial cavity—one situated on the anterior extremity of the left hemisphere. It was as big as a small nut, was not projecting, adhered to the dura mater; it was easily pulled away. A second was resting on the anterior extremity of the ecto-sylvian convolution. Not adherent to the dura mater, it is sounded and has the same aspect as the first. The third growth, as large as a hazel nut, is in the posterior part of the same convolution; it has the same characters as the others. Around these tumors and extending in the right hemisphere for some surface, the white substance has assumed

a yellowish hue and seems softer. The cerebellum, isthmus and choroid plexuses are normal. To the histological point of view these tumors are carcinomatous in nature. It is evident that they were secondary and that the primitive growths started in the nasal cavities or sinuses. Still, as the post-mortem was incomplete, their true original point was not made out.—(*Bullet. Sciences Vet. de Lyon, Oct., 1904.*)

HISTERECTOMY IN CHRONIC METRITIS OF SLUT [Proj. Mather].—After considering the various causes and the manifestations of chronic metritis, the author relates two cases where the operation was followed by complete return to health of two sluts, which were previous to it unfit to be kept. One was an excellent hunting dog, which made a perfect recovery in 13 days, and in a short time returned to her master in excellent condition. The other was an aged little pet animal, delicate, capricious in her habits, a canine neurasthenic, and very fat. She was in the habit of micturating in one certain place and unless there she would not urinate. Such was the case the morning of her operation. The result was that on opening her abdomen the bladder was found enormously distended and concealing the uterus. Catheter was used, the urine removed and finally the operation completed and followed by no complication. In 13 days she was returned to her owner.—(*Bullet. Sciences Vet. Lyon, Oct. 1904.*)

CHRONIC AND INTERMITTENT PROLAPSUS OF THE VAGINA WITH DISPLACEMENT OF THE BLADDER IN A MARE [M.M. Didier and Giraudet, Army Veterinarians].—This saddle mare is five years old. She presents this peculiar series of symptoms: At rest, walking or trotting without being mounted, she presents nothing abnormal; on the contrary, when she has a man on her back, under the influence of the spurs and of the legs of the rider, she struggles violently, arches her back, contracts her abdominal muscles, and then appears through the lips of the vulva, a round tumor, strong rose color, about the size of a child's head, which, as soon as the rider gets down gradually diminishes and disappears, to return under the same conditions; also when galloped at liberty to the rope, but then the symptoms return more slowly. On examining the tumor, when it is protruding, it is observed that on its superior part, a few centimetres from the vulvar slit, the os uteri is easily detected. If the tumor is raised, it disappears rapidly and the meatus urinarius is found in its normal place. If now vaginal exploration is made, the bladder is readily felt on the floor of the

vagina. If the finger is introduced in the meatus, the floor of the vagina contracts and both organs return to their place. The diagnosis is certain. The pathological conditions promoting these symptoms are probably due to a loss of adhesion of the bladder with the peritoneum as well as of the surrounding organs, loss of adhesion which took place during a difficult accouplement when violent traction had been applied. It is probable also that she has had a prolapsus vaginae after her delivery, judging by the presence of cicatrices on the lips of the vulva, marks very suggestive. Admitting this explanation, the treatment was simple: Expectation and no more using of the mare under the saddle. After four months, she was tried; the symptoms returned, it is true, but so reduced that a radical recovery is surely expected if for a while yet the mare is not ridden.—(*Bullet. Scien. Vet. Lyon, Oct., 1904.*)

PELVI-RECTAL ABSCESS IN A MARE [*Prof. Coquot*].—This animal was taken with colic two months before, which was treated by oily soaped injection. The syringe used was sharp at the end and a little escape of blood had followed a rectal exploration made at that time. The mare recovered, but some two weeks later she manifested new troubles: frequent stretchings, violent efforts, groans, expulson of a few small dry faecal balls. This condition grew worse, and, although at times the animal seemed in perfect health, the symptoms became more serious and returned frequently. During the expulsive efforts the anus and vulva are pushed backwards, and through the vulvar lips there appears a round, globular mass, as big as a child's head, which is covered with the vaginal mucous membrane. The anus at that moment is dilated and exposes the rectal mucous membrane which is congested and to which small, hard, dry and flat faecal balls are adherent. Rectal exploration reveals a narrow condition of the rectum and on the floor a globular, fluctuating mass. Vaginal examination reveals the presence of this same mass on the upper wall and on the lower one the bladder in its normal condition. The diagnosis is then easily made out, the case is an inferior pelvi-rectal abscess. Diagnosis is confirmed by an explorative puncture with an aseptic trocar through the vagina. Pus escaping, the puncture is enlarged freely with a straight bistoury and about five litres of fluid removed. Injections of permanganate and of oxygenated water were made afterwards. The opening of the abscess was followed by immediate relief and recovery was complete in a few days.—(*Rec. de Med. Vet., Jan. 15, 1905.*)

GERMAN REVIEW.

By ADOLPH EICHHORN, D. V. S., Bureau of Animal Industry, Great Bend, Kansas.

SUBCUTANEOUS INJECTIONS OF BOVINE TUBERCLE BACILLI INTO HEALTHY AND SICK PERSONS [*Felix Klemperer*].—As recent experiments prove that cattle may be immunized against tuberculosis with living human tubercle bacilli, and accepting the supposition that the bovine tubercle bacilli might have a similar effect on human beings, Klemperer, first on himself, and later on different sick people, performed several experiments for the purpose of establishing the effects of bovine tubercle bacilli on the health of human beings. He inoculated subcutaneously guinea-pigs with material derived from a tubercular lymph-gland. They developed tuberculosis in from three to four weeks, and by emulsifying some of their affected lymph glands in salt-solution, of which 0.05 c.cm. proved fatal in from three to six weeks to guinea-pigs; he proceeded by injecting 0.25 c.cm. of the same subcutaneously in his forearm. At the place of inoculation a painful inflammation developed, and a swelling of the brachial glands was also noticeable, which, however, disappeared in the course of two weeks, while at the place of inoculation a slight thickening remained, which was extirpated after ten days, and proved to be free of living tubercle bacilli. Considering this, it appears that bovine tubercle bacilli, introduced into the subcutaneous tissues of human beings, are destroyed in a comparatively short time, without producing tubercular affections. Following this, K. inoculated a friend, a practicing physician, on his own request, who suffered for the last 14 years from phthisis, expectorating frequently blood, and greatly emaciated, with 0.25 c.cm., and after three months with 0.5 c.cm. of tubercular emulsion, prepared as described above, and which contained numerous bovine tubercle bacilli. After both injections, the local painful inflammation developed, accompanied by a slight elevation in the temperature; however, in the general condition of the sickness, there was no improvement noticeable, unless that his appetite improved, coughed less, and his weight increased two pounds. As a consequence of these, the subcutaneous inoculations were continued, and in the following three months the patient received 12 more inoculations, each of 0.25 c.cm. of the emulsion, principally in the abdomen. After some of the inoculations suppurative abscesses developed, in which

streptococci were present, but in the condition of the sickness there was no visible change from his previous state, and after six months he took up again his practice. Based on these experiments K. was convinced to his satisfaction, that bovine tubercle bacilli inoculated subcutaneously are harmless for healthy as well as sick persons, and followed his work by injecting four more tubercular patients after receiving their consent, in all 39 times each of 0.25 c.cm. of virulent bovine tubercular bacilli emulsion. Due to the inoculations in four instances abscesses formed, which soon healed, in a few cases a slight thickening remained at the place of inoculations, while in most instances not the slightest mark was noticeable. General constitutional symptoms were not observed at any time during the treatment, while frequently the patients felt somewhat improved. Based on these results, K. brings forward the question, whether it would not be possible to immunize people with bovine tubercle bacilli before they contract the disease, or in the early stages of the disease. Moller also experimented on himself in a similar way, by inoculating himself three times intravenously with tubercle bacilli cultivated from a blind snail, which he followed by intravenous injections of human tubercle bacilli. While the latter infection has not affected him, it is a question whether the first injection produced the immunity. Experiments performed in this direction on sick people would answer this question to a better satisfaction, as by effectful treatment the improvements on the sick would be controllable.—(*Zeitsche f. klin. Medec.*)

THE EFFECTS FROM THE ENTRANCE OF AIR INTO THE VEINS [*Dr. Richter, Dresden*].—It is a well-known fact that the presence of air in the veins in large quantities often produces death, which sometimes destroys apoplectically people and animals. While this fact was well known, up to this time it has not been established what the quantity of air is which would produce death in such instances. Richter aimed to establish through his experiments on horses, dogs and rabbits the largest quantity of air in veins that can be endured by the animals, without ill effects, and also the quantity which regularly produces death; on the other hand he also aims to explain the cause of death. The entrance of air into the veins is always accompanied by a peculiar noise. After a large quantity has already passed into the veins, the animal begins to perspire profusely, trembles, the inspirations are deeper, sometimes longer pauses between the acts of respiration. Soon respiration ceases,

the animal suddenly collapses and dies. In other cases again, it strikes the animal in an apoplectic way. Horses, as a general rule, endure without particular reaction one litre of air; five to six litres are sometimes fatal, while eight litres will produce death in every instance. Medium sized dogs endure well 20 c.cm. of air; however, it was observed that in some cases a much smaller quantity caused death. Death, excepting the apoplectic form, appears as a rule in 1, 2, 5 minutes, in rare instances after ten minutes. The beating of the heart stops only quite a while after the respiration ceases. On autopsy the right auricle and ventricle, also the pulmonary artery, contain large quantities of air; in fact, in dogs and horses, and sometimes in rabbits, air bubbles can be found in the left heart, which proves that the air can pass even through the capillary system. The absorption of the air is also accomplished quite fast and in large quantities, which is proved by the experiments of Muron and Laborde. They administered in one and one-half hours, into the veins of a dog 1120 c.cm. of air without any marked ill effects. According to Richter, the cause of death is the air embolism of the pulmonary artery, to which cerebral anæmia joins, and is followed by a cessation in respiration. It is not excluded that in some cases embolisms are produced in the vessels of the brain and heart; however, these are rare occurrences.—(*Arch. f. Wiss. u. prakt. Thierh.*)

CURING TUBERCULOSIS.—According to reports of foreign daily papers, Professor Giuseppe Levi discovered a successful treatment for tuberculosis, which consists in injecting the allo-tropic iodine solution subcutaneously; explaining that in this form the iodine exercises all its antiseptic properties; not so with the regular iodine, which when coming in contact with blood loses almost all these properties. As the experiments conducted at the abattoir at Milan proved highly satisfactory, this method is now tried on people. According to the information, after 30-50 injections the broken down lung tissues are replaced by new tissues and cicatrization takes place. In this way complete recovery is accomplished. G. Levi is of the Milano Veterinary High School, in charge of the intern clinic, and he is the originator of the administrations of medicines intratracheally.

SECRETARY W. H. GRIBBLE, of the Ohio State Veterinary Medical Association, Washington, C. H., has just recovered from a painful attack of carbunculus, affecting the right axillary region, there being four successive crops of the phlegmons.

BIBLIOGRAPHY.

FRIEDBERGER AND FRÖHNER'S VETERINARY PATHOLOGY (Authorized translation). Translated and Edited by M. H. Hayes, F. R. C. V. S. (author of "Points of the Horse," etc.) With Notes on Bacteriology by G. Newman, D. P. H. Chicago : W. T. Keener & Co., 90 Wabash Avenue.

Last year Messrs. Keener & Co. put forth Volume I of Captain Hayes' authorized translation of the famous work of Friedberger and Fröhner, and it met with a hearty reception. Before Volume II was completed the author died, and Mr. John Dunstan, M. R. C. V. S., professor of surgery and therapeutics in the Royal (Dick) Veterinary College, completed the task making additions and corrections where recent discoveries have made it necessary. Volume I is devoted to "Infective Diseases," embracing all those affections of domestic animals which are deemed transmissible by infection and contagion. Dr. Newman's chapter on "Bacteriology" is very comprehensive and will be found of great service to readers who have never studied the subject, being in the nature of a primer, and giving enough plain bacteriological information to enable one to understand the references to this subject in the text of the book or in general modern medical literature. To many veterinarians who secured their education before the subject was generally taught in veterinary colleges, this chapter of Dr. Newman's will be found very enlightening. To this volume Captain Hayes has contributed an "addenda," embracing "surra," "tsetse fly disease," "South African horse sickness," "diseases conveyed by ticks," "ulcerative lymphangitis," with "notes on epizoötic lymphangitis." In this chapter the most recent advancement in the study of these diseases is incorporated, and the reader will be placed in possession of all that is known in regard to these trypanosomes. The fourth and concluding chapter of this volume is a concise résumé of the terms "infection" and "contagion" as applied to the means of transmitting "infective diseases."

Volume II treats of "Non-Infective Diseases," and takes up in successive chapters, diseases of the organs of digestion, of the cesophagus, of the stomach (very exhaustive), of the liver, of the peritoneum, of the spleen, sexual organs, heart and large blood-vessels, skin diseases, diseases of the locomotory organs, trichinosis in swine, the measles of domestic animals, Miescher's tubes or Rainey's corpuscles, diseases of the nervous system, of the spinal cord and its membranes, diseases of the peripheral

nerves, with an appendix, diseases of the respiratory system, of the accessory cavities of the nose, of the larynx, of the trachea and bronchi, of the lungs, of the pleura, and an appendix to the chapters on diseases of the respiratory organs.

Friedberger and Fröhner's Pathology has been standard in the literature of Germany, France and America for some years, its translation by Zull in this country having had great popularity, while the present edition is the first translation in England. This work of Captain Hayes is without question the most pretentious effort of his active career and has been accomplished with the greatest regard to detail, and a test of the index proves that there is scarcely a subject which has not been thoroughly considered, yet not in that painfully laborious fashion which requires the reader to read page after page to get the milk out of the cocoanut. It is concise and direct in its statements, yet sufficiently elaborate to include essentials.

We are informed by the American publishers, Messrs. Keener & Co., of Chicago, that the first volume met with such a ready sale that a second edition had to be speedily gotten out, and surely Volume II is in every way its equal, though for the purposes of the practitioner it excels it in all respects.

Well printed on good paper, it is a work that should be in the hands of every veterinarian who is jealous of a library of the best that has been produced in any land.

AT a meeting of the New Jersey State Board of Veterinary Medical Examiners held at the State House, Trenton, June 27th, 1905, Dr. T. Earle Budd, of Orange, N. J., was elected Treasurer of the Board.

WITH veterinary practice at high-water mark, and medical science developing with the stride of a giant, taxing the alertness of the best to keep in touch with the progress of the age, is it unreasonable for the REVIEW to predict the largest attendance on record at the A. V. M. A. annual meeting this month?

LAMENT OF THE COW.—A lady who complained to her milkman of the quality of milk he sold her received the following explanation: "You see, mum, they don't get enough grass feed this time o' year. Why, them cows o' mine are just as sorry about it as I am. I often see 'em cryin'—regular cryin', mum—because they feel as how their milk don't do 'em credit. Don't you believe it, mum?" "Oh, yes, I believe it," responded the customer;—"but I wish in future you'd see that they don't drop their tears into our can."

COLLEGE COMMENCEMENTS.

CHICAGO VETERINARY COLLEGE.

The twenty-first annual commencement exercises of the Chicago Veterinary College were held in the College Auditorium, on Wednesday evening, March 29th, 1905, and the degree of Doctor of Comparative Medicine was conferred on the following gentlemen: Carl Henry Affeld, Marquette, Wis.; George A. Albery, Canton, Ia.; John August Anderson, Lake Park, Minn.; Harry C. Barth, Freeport, Ill.; Edwin W. Barthold, Fort Wayne, Ind.; Geo. Henry Baxter, Wilsonville, Neb.; Stehman S. Becker, Manheim, Pa.; Elwin B. Bennett, Jr., Chicago, Ill.; John A. Berg, Shnbert, Neb.; Albert A. Biebel, Belleville, Ill.; F. E. Brazie, Harlan, Ia.; L. P. Brewster, Vermillion, S. D.; Horace M. Britt, La Harpe, Ill.; Charles A. Bucklew, Dallas, Ia.; Henry F. Burt, Adams, Mass.; Wm. F. Betzold, Newark, N. J.; Geo. L. Cade, Galilee, Pa.; Harry Caldwell, Peoria, Ill.; Carl Cozier, Oakesdale, Wash.; Chas. Ed. Crowe, Chicago, Ill.; George Hoadley Daughtrey, Mount Eaton, O.; Samuel Austin Deming, Norwich, N. Y.; Martin D. De Turck, Oley, Pa.; Walter S. Drummond, Argos, Ind.; Harry Dumbauld, Emporia, Kan.; Will R. Edwards, Vicksburg, Miss.; Fred. J. Erdell, Frankfort, Ind.; Geo. Wm. Evert, Galena, Ill.; Archibald Lamont Faunce, Chicago, Ill.; Joseph Henry Faust, St. Louis, Mo.; Fred. J. Fawcett, Princeton, Ill.; Frank J. Fess, Chicago, Ill.; Reed Kilgore Francis, Hilliard, O.; Harry H. Freed, Scranton, Pa.; Charles Edward Fidler, Canton, Ill.; Frank L. Gardner, Jamestown, Ind.; Geo. Wm. Giese, Neola, Ia.; Robert Fred. Gittings, Terre Haute, Ill.; Henry Joseph Glennon, Newark, N. J.; Gilbert G. Goodrich, Lake Park, Minn.; John William Gray, Salt Lake City, Utah; Hubert H. Harz, Chicago, Ill.; Fred. H. Hasenmiller, Dixon, Ia.; Louis P. Helm, Baraboo, Wis.; J. William Hull, Chicago, Ill.; Benjamin F. Kimball, Pana, Ill.; Leon J. J. Kutzenberger, Godfrey, Ill.; Louis N. Larson, Howard, S. D.; Michael Lawler, Chicago, Ill.; Newton G. Le Gear, V. S., Waco, Tex.; Alvin O. Lundell, Goldfield, Ia.; Fred De Witt Markham, V. S., Port Leyden, N. Y.; Frank Vankirk Matthews, McKeesport, Pa.; Henry Jacob Mau, Herscher, Ill.; Dominic Benjamin Mazza, Santa Rosa, Cal.; W. H. McLain, Ames, Ia.; Andrew S. Morris, Glendola, N. J.; Dawson C. Murdock, Carroll, Ia.; J. Whitmore Murphy, Lincoln, Ill.; Wm. Ed. Von Nordheim,

Glenville, Neb. ; Clyde B. Oldaker, Iowa City, Ia. ; Horace C. Peabody, Webster, S. D. ; Henry F. Potratz, Chicago, Ill. ; G. Mahon Predmore, Avon, Ill. ; Lewis J. Proper, Bonaparte, Ia. ; Walter G. Raabe, Chicago, Ill. ; Theo. W. Riddell, Columbus, O. ; Frank Rigdon, Wapakoneta, O. ; H. M. Rinehart, Colchester, Ill. ; J. Arthur Royce, Lincoln, Neb. ; L. W. Russell, Des Moines, Ia. ; Vic. L. Schaeffer, Fleetwood, Pa. ; Wm. Alb. Schaffter, Wooster, O. ; Wm. A. Scott, V. S., Baxter Springs, Kan. ; John F. Seiter, Chicago, Ill. ; Henry C. Singer, Pana, Ill. ; Wm. D. Staples, Goodwater, Ala. ; Wm. H. Stephenson, Apple River, Wis. ; Earl F. Stewart, Jamestown, O. ; Ed. M. Sullivan, Milwaukee, Wis. ; Robt. C. Swallow, Fort Collins, Col. ; Leo. G. Stickney, Janesville, Wis. ; Jas. A. Thom, Milburn, Ill. ; Geo. E. Thomas, Seneca, Ill. ; David Lee Travis, Pana, Ill. ; Wm. C. Van Allstyne, Walcott, N. Y. ; Clarence F. Ward, Norwalk, O. ; Wm. H. Weathers, McNabb, Ill. ; Jesse H. White, Farmington, Ill. ; David A. Willey, Jr., Chicago, Ill. ; Jos. Clark, Wingert, Reynoldsburg, O. ; Geo. W. Wolaver, Jr., Edinburg, Ill. ; Jerry Wolfe, Lost Nation, Ia. The following were the prize winners :

For highest general average, gold medal, Dr. G. M. Predmore ; for highest standing in theory and practice, gold medal, Dr. H. F. Potratz ; for highest standing in anatomy, gold medal, Dr. G. G. Goodrich ; for highest standing in surgery, gold medal, Dr. T. W. Riddell ; for highest standing in cattle pathology, gold medal, Dr. F. J. Erdell ; for highest standing in *materia medica*, prize, Dr. W. R. Edwards ; for highest standing in dentistry, prize, Dr. G. M. Predmore ; for highest standing in physiology, prize, Dr. F. B. Matthews ; for highest standing in meat and milk inspection, prize, Dr. A. L. Faunce ; for highest standing in parasitology, prize, Dr. F. D. Markham ; for highest standing in canine and feline pathology, prize, Dr. W. C. Van Allstyne ; for highest standing in pathology and bacteriology, prize, Dr. A. O. Lundell ; for highest standing in microscopy, prize, Dr. N. G. LeGear ; for highest standing in lameness and shoeing, prize, Dr. W. R. Edwards ; for highest standing in chemistry, prize, Dr. J. H. White.

PEARSON AND GILLILAND on "Immunization of Cattle against Tuberculosis" will be history making. Their experiments have progressed sufficiently for some definite statements. You can read their paper in the REVIEW, but you cannot see the illustrative pathological exhibits unless you go to Cleveland.

CORRESPONDENCE.

SPANISH VETERINARY LITERATURE—REPLY TO DR. SCHUMACHER.

WASHINGTON, D. C., July 14, 1905.

Editors American Veterinary Review:

DEAR SIRS:—Replying to the note of Mr. Schumacher in the current number of the AMERICAN VETERINARY REVIEW, in which he requests the names of several Spanish veterinary journals; I beg to inform you of the following: *Gaceta de Medicina Zoológica*, Director, Arturo Menéndez, Ronda de Atocha 15, Madrid, Spain; *La Veterinaria Española*, Director, D. Benito Remartinez y Diaz, Jesus y Maria, 223 izquierda, Madrid, Spain. Very respectfully,

D. E. SALMON,

Chief of Bureau of Animal Industry.

* * *

SANTIAGO DE LAS VEGAS, CUBA, July 17, 1905.

Editors American Veterinary Review:

DEAR SIRS:—Replying to Dr. Schumacher's request in your July issue for a veterinary journal in the Spanish language, I would refer him to *La Veterinaria Española*, "a periodical," as the title page says, "consecrated to the defense of the rights and interests of the Spanish veterinary class." It is published on the 1st, 10th and 30th of each month by the Director, D. Benito Remartinez y Diaz calle Jesús y Marie, 223, izquierda, Madrid, Spain. The foreign price is 18 pesetas per year (about \$2.70 American currency). It can be ordered through G. E. Stechert, No. 9 East 16th Street, New York.

N. S. MAYO.

THE TREATMENT OF SEPTIC METRITIS—REPLY TO DR. WESTON.

NEWMAN GROVE, NEB., July 11, 1905.

Editors American Veterinary Review:

DEAR SIRS:—I see an enquirer through the REVIEW wishes treatment for septic metritis. If he will try the following treatment he will meet with some success: After either colt or calf is delivered give extract of ergot 3 j and spirits of glonine ℥ xxx, at once; leave three doses of ergot and glonine, ℥ 20 to 30, every three hours, or as required. When you are called to a case of septic metritis use ergot, drachm doses, every hour, in

alternation with echinacæ, m 20. Wash uterus with creolin, ½ i, warm milk Ci. Do not use water. I have been very successful with this treatment. I should think the normal saline solution, from what I have read in the REVIEW, would be the proper treatment, but I have been successful with this; also, where prolapsus of the uterus has taken place, after washing thoroughly with this solution and using ergot and glonine.

HUGH THOMSON.

THE CURATIVE USE OF MALLEIN CONDEMNED BY MINNESOTA VETERINARIANS.

The following preamble, resolution, and recommendation adopted at the July meeting of the Minnesota State Veterinary Medical Association are self-explanatory, and constitute a valuable contribution to the discussion which has been encouraged by this journal with the object of standardizing professional opinion upon a vital subject that has occupied such a chaotic position among veterinarians generally:

"WHEREAS, The attention of the Minnesota State Veterinary Medical Association has been called (through the medium of a circular sent out by the Pasteur Vaccine Co.) to the curative properties of mallein in glanders, be and it is hereby

"Resolved, That we, the Minnesota State Veterinary Medical Association, hereby denounce all such suggestions and recommendations made by such Pasteur Vaccine Co. as being misleading and detrimental to the veterinary profession and also interfering with the State control of glanders as existing in this State; and, we hereby

"Recommend, That all members of the Minnesota State Veterinary Medical Society, if any such have been misled by such advertisement into using mallein as a curative agent shall hereafter desist from using the same, inasmuch as it is detrimental and dangerous, and it is not to be recommended in practice.

"MINNESOTA STATE VETERINARY MEDICAL ASSOCIATION.
"Per J. G. Annand, Secretary."

KANSAS CITY is already in the field for the 1906 meeting of the A. V. M. A. It is a centrally located, interesting city, with large abattoirs, and full of good associationists, and plenty of timber out of which to make acceptable new members.

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

PHILADELPHIA, PA., July 24, 1905.

Editors American Veterinary Review:

DEAR SIRS:—The following is the programme for the forty-second annual meeting of the American Veterinary Medical Association to be held in Cleveland, Ohio, August 15th to 18th, 1905, as arranged by the Committee on Programme:

Headquarters.—The headquarters of the Association will be at the Hollenden Hotel, corner Superior and Bond Streets. American and European plans. Rooms \$1.00 and upward per day. Cafe giving excellent service at moderate rates. Good restaurants in immediate vicinity.

Hotel Euclid, cornell Streets; rate Hotel.

Colonial Hotel, Erie Street; rooms American plan.

Forest City Ho-Street and Public per day.

American House, posite Bank Street;

The Local Com-
list of other hotels
in which rooms may
sired.

Reservation should be made in advance. This can be done by writing to the hotels or to Dr. C. W. Eddy, Secretary of the Local Committee, 1275 Euclid Avenue, Cleveland, O. The Local Committee advises that as many as possible patronize the headquarters hotel.

Place of Meeting.—The sessions will be held in the Assembly Room of the Hollenden Hotel, corner Superior and Bond Streets.

Special Committee Meetings.—Monday, August 14, 1905: Executive Committee at 10.00 A. M.; Publication Committee at 4.00 P. M.

PATHOLOGICAL EXHIBIT.

The State Live Stock Sanitary Board of Pennsylvania will



M. E. KNOWLES.

ner Euclid and Brow-
same as Hollenden

Prospect Street near
\$2 to \$3.50 per day;

tel, corner Superior
Square; \$2 to \$3.50

Superior Street, op-
\$2 to \$3.50 per day.
mittee will have a
and boarding houses
be obtained if de-



GEORGE R. YOUNG.

hibited by members. This exhibit in con-
pers and discussions
bers an unusual op-
themselves with the
in the study of sub-
stance. Specimens
Hollenden House, in
Shepard, and at the
Shepard should be
dressed to his office
Cleveland, O.

PROGRAMME.

August

I. G. RUTHERFORD.

8.00 A. M. Meeting of
Executive Com-
mittee.

10.00 A. M. Associa-
tion assembles.

Address of Wel-
come — Hon.
Tom L. John-
son, Mayor of
Cleveland.

Response — Dr.
Roscoe R. Bell,
of New York.

President's address

make an exhibit of a collection of specimens showing the lesions of tuberculosis in various domestic and laboratory animals. This collection has been selected with great care and will be a marked feature of the meeting. Numerous pathological specimens and photographs of such specimens will also be ex-



E. M. RANCK.



of the Association.
nection with the pa-
will give our mem-
portunity to acquaint
great advances made
jects of great import-
should be sent to the
care of Dr. E. H.
time of sending Dr.
notified by letter ad-
at 1850 Doan Street,

*First Day, Tuesday,
15, 1905.*



GEORGE W. DUNPHY.



RICHARD P. LYMAN.

Roll-call.

Submission of the minutes of the previous meeting as presented in the annual report and in the records kept by the Secretary.

Unfinished business.

Report of Executive Committee.

Admission of
Reports of the
tee :—Intel-
tion, Diseases,
tion, Local
cology, Reso-

12.00 Noon. Ad-

2.00 P. M. Asso-

Reports of Spec-
Army Legis-

Report of Sec-

Report of Treas-

Reports of Resi-

Discussion of Reports.

Election of Officers.

5.00 P. M. Adjournment.

8.00 P. M. Reception to all members and visitors in the parlors of the Hollenden Hotel.

Second Day, Wednesday, August 16, 1905.

10.00 A. M. Association assembles.

Reports of Committees.

PAPERS AND DISCUSSIONS.

"Tuberculosis,"
Chene, Quebec, Can-

"The Pathology
Chas. Schulin, Bill-

"Unusual Les-
sis Found in Abat-
R. H. Harrison, St:

"The Immuniza-
Against Tubercu-
Pearson, Philadel-
H. Gilliland, Phila-

"Swamp Fever
A. Youngberg, De-
"A Contribution



JOHN J. REPP

new members.

Regular Commit-
elligence and Educa-
Finance, Publica-
Arrangements, Ne-
lutions.

journment.

ciation assembles.

ial Committees :
lation.

retary.

urer.

dent Secretaries.



W. H. LOWE.

Dr. John D. Du-
ada.

of Tuberculosis," Dr.
ings, Mont.

sions of Tuberculo-
toir Inspection," Dr.
Paul, Minn.

tion of Cattle
sis," Dr. Leonard
phia, Pa., and Dr. S.
adelphia, Pa.

of the Horse," Dr.
troit, Minn.

to the Study of Epi-

zoötic Abortion," Dr. Louis A. Klein, Clemson College, S. C., and Dr. Haven Metcalf, Clemson College, S. C.

12.00 Noon. Adjournment.

2.00 P. M. Association assembles.

"The History of Meat and Milk Inspection in Montana," Dr. T. J. Sullivan, Butte, Montana.

"Meat and Milk Inspection Under Federal and State Control," Prof. Robt. Ostertag, Berlin, Germany.

"Some Poisonous Plants in Utah," Dr. E. V. Wilcox, Washington, D. C.

"Negri Bodies and the Diagnosis of Rabies," Dr. Langdon Frothingham, Boston, Mass.

"Stable Ventilation," Dr. M. H. Reynolds.

Subject not given, Prof. K. Tsuno, Tokio, Japan.

Subject not given, Dr. J. Desmond, Adelaide, So. Australia.

5.00 P. M. Adjournment.

8.00 P. M. Association assembles.

Reports of Committees.

PAPERS AND DISCUSSIONS.

"Spavin Group of Lameness, Dr. W. L. Williams, Ithaca, N. Y., Dr. C. W. Fisher, San Mateo, Cal., and Dr. D. H. Udall, Columbus, Ohio.

"Tenotomies of the Horse," Dr. James A. Waugh, Pittsburg, Pa.

"Cutaneous and Subcutaneous Fibromas," Dr. R. P. Lyman, Hartford, Conn., and Dr. C. L. Colton, Hartford, Conn.

"Technique of Nerve Suturing in Roaring," Dr. Simon J. J. Harger, Philadelphia, Pa.

"Neurectomies of the Pelvic Limb," Dr. R. C. Moore, Kansas City, Mo.

"Accidents and Sequelæ of Surgical Operations," Dr. L. A. Merillat, Chicago, Ill.

10.00 P. M. Adjournment.

Third Day, Thursday, August 17, 1905.

10.00 A. M. Association assembles.

"General Remarks on Veterinary Therapeutics," Dr. F. L. Quitman, Chicago, Ill.

"The Status of Therapeutics," Dr. P. A. Fish, Ithaca, N. Y.

"Adrenalin Chloride and its Uses in Veterinary Practice,"

Dr. G. W. Dunphy, Quincy, Mich.

"Never Slips," Dr. Francis Abele, Quincy, Mass.

"Hydrothorax," Dr. Geo. B. Jones, Sidell, Ill.

"Clinical Examination of the Blood of the Dog," Dr. S. H. Burnett, Ithaca, N. Y., and Dr. Jacob Traum, Ithaca, N. Y.

"Twenty-seven Years' Veterinary Experience," Dr. J. V. Newton, Toledo, Ohio.

Subject not given, Dr. J. W. Adams, Philadelphia, Pa.

"The Profession and the Advancement of Science," Dr. D. Arthur Hughes, East St. Louis, Ill.

12.00 Noon. Adjournment.

Fourth Day, Friday, August 18, 1905.

9.00 A. M.—SURGICAL AND MEDICAL CLINIC.

The clinic will be held at Troop A Riding Academy, corner of Curtis and Willson Avenues, which is about twenty minutes ride from headquarters. The building is in many ways ideal for clinical purposes. Seats will be arranged so that all may see and hear.

The Wade Park Avenue line of cars which passes the Hollenden Hotel, going east, is the only direct line to the riding academy where the clinic will be held. By transferring from any of the eastbound cars to the Willson Avenue line the clinic can be reached from any of the hotels in about 20 minutes.

The Committee on Local Arrangements have secured many cases requiring surgical operation for relief and numerous medical cases for diagnosis and treatment.

The following well-known surgeons expect to be present to demonstrate some useful operation: Drs. M. H. McKillip, Chicago, Ill.; Simon J. J. Harger, Philadelphia, Pa.; W. L. Williams, Ithaca, N. Y.; L. A. Merillat, Chicago, Ill.; R. P. Lyman, Hartford, Conn.; S. Brenton, Detroit, Mich.

ENTERTAINMENT.

It is the ambition of the Local Committee to make this meeting an occasion of genuine pleasure as well as one of professional labor. They have planned a reception for all members and visitors, to be held in the parlors of the Hollenden Hotel on Tuesday evening, at 8.00 P. M.

Wednesday: Park ride and street car trips about city for ladies and children.

Thursday: Lake ride on the steamer *City of Erie* from 2.00 P. M. to 5.00 P. M. All members, visitors and their friends are

included in this excursion. *Banquet* at the Hollenden House at 7.30 P. M.

Friday: 2.00 P. M. to 5.00 P. M. a car ride to interesting points about the city.

TRANSPORTATION.

1. The Eastern Canadian, the New England, the Trunk Line and the Central Passenger Association have granted an excursion rate, certificate plan, providing for one full first-class, limited or unlimited, fare going, and one-third fare returning over the same route, provided 100 or more persons holding certificates properly vised are at the meeting. It is almost a certainty that the Western Passenger Association has also granted the same rate. What action will be taken by the Southwestern, the Southeastern and the Western Canadian Passenger Association is yet in doubt, but it is hoped that they will comply with the request for a special rate of fare.

2. Those living outside the territory in which these concessions are made should purchase a ticket to the nearest point within the territory, and there purchase a ticket to Cleveland and take a certificate therefor.

3. Do not make the mistake of asking for a receipt. Ask for a certificate.

4. Those living in the vicinity of Cleveland should bear in mind that a certificate will be of no value unless the going fare is above fifty cents.

5. No reduced return fare can be obtained by those who fail to obtain certificates.

6. Tickets for the going journey may be obtained as early as three days (Sunday excluded) before the first day of the meeting and during the first two days of the meeting. Tickets for the return journey must be purchased within three days (Sunday excluded) after the last day of the meeting. The various passenger associations regard August 14th as the opening and August 18th as the closing day. Therefore *going* tickets can be purchased as early as August 10th and *return* tickets as late as August 22d.

7. Present yourself at the depot for purchase of ticket with certificate at least thirty minutes before advertised time of departure of train. Certificates are not kept at all stations. If your local agent does not keep certificates, he can tell you where one may be obtained. You can then purchase a ticket to the office where certificates are kept and there

purchase a through ticket to Cleveland and obtain a certificate for it.

8. On your arrival at Cleveland hand your certificate to Dr. C. W. Eddy, Secretary of the Local Committee, who will see that it is properly certified by the joint agent. The joint agent will be present at the meeting only on August 16th and 17th, so the certificates should get into the hands of Dr. Eddy prior to noon on August 17th, or, at latest, by 3.00 P. M. on that day. There is always some difficulty about the return of the certificates to their owners because of the difficulty in finding the owners. It is requested that each person who hands a certificate to Dr. Eddy may come to him for it before the expiration of the meeting.

9. Certificates are not transferable. A transfer or misuse of a certificate or ticket will forfeit all privileges granted.

10. The Secretary has guaranteed that the Association will redeem at full fares any return tickets procured by persons in attendance at this meeting that may be found to have been transferred, misused or offered for sale.

It will be seen from the foregoing that a programme of unusual interest has been arranged. There is a great variety of subjects and almost all lines of veterinary work are represented. Certain it is that all who are desirous of broadening their view of professional work will find an abundance to satisfy them. The Local Committee has aimed high in preparing for the clinical lectures and demonstrations. That their efforts will be crowned with success and that the clinic will be worthy of our Association can not be doubted.

Those veterinarians who are not members are cordially invited to attend the meeting, as are also their friends and families and the friends and families of the members. The pleasures and benefits of the meetings have in the past been greatly enhanced by the presence of the ladies and children and it is desired that the custom of bringing them may continue and grow.

The annual meeting of the Association is the great holiday-time for veterinarians, something they look forward to and plan for throughout the entire year. It is hoped that neither business nor misfortune will deprive any of the energizing and inspiring influence of the Cleveland meeting.

Respectfully,

JOHN J. REPP, *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

For the first time in the history of the Veterinary Medical Association of New Jersey members and guests were invited to bring ladies and other members of their families with them to the semi-annual meeting of the Association at Washington Park, N. J., July 13th and 14th, 1905. Those who took advantage of the opportunity were Dr. James M. Mecray, wife, daughter and son, Maple Shade, N. J.; Dr. Chas. E. Magill, Haddonfield, N. J., and mother; Dr. B. K. Baldwin, Newark, N. J., and mother; Dr. L. P. Hurley and wife, Hopewell, N. J.; Dr. Samuel Christy and wife, Elmer, N. J.; Dr. Chas. J. Marshall, of Philadelphia, wife and Miss Stoot; Dr. W. Horace Hoskins and wife, of Philadelphia; Dr. George Evans Reading (M. D.) and wife, of Woodbury, N. J.; Dr. James Hunter, Jr. (M. D.), and wife, of Westville, N. J., the two last named gentlemen being delegates from the Gloucester County Medical Society; Dr. T. B. Rogers and sons, Woodbury, N. J.; Dr. John B. Hopper and wife, Ridgewood, N. J.; Dr. Wm. Herbert Lowe and wife, Paterson, N. J.

The Association convened July 13th at 11.30 A. M., with President T. Earle Budd, of Orange, N. J., in the chair.

Members present:—Baldwin, Budd, Christy, Dilkes, Fetter, Forsyth, Harker, Hopper (John B.), Hurley, Horner, Loblein, Lowe (Wm. Herbert), Lowe (J. Payne), Magill, Mecray, McCoy, Rogers, Smith (T. E.) and Vander Roest.

Others present:—Dr. W. L. Williams, Professor of Surgery and Obstetrics, N. Y. State Veterinary College, Cornell University, Ithaca, N. Y.; Dr. John W. Adams, Professor of Surgery and Obstetrics, Veterinary Department, University of Pennsylvania, Philadelphia, Pa.; Dr. W. Horace Hoskins, former President American Veterinary Medical Association, Philadelphia; Drs. Chas. J. Marshall, M. W. Drake and N. M. Drake, all of Philadelphia; Dr. Otto G. Noack, Reading, Pa.; Dr. Thomas J. Mahaffy, Wilmington, Delaware; Drs. Grover and Krey, of New York; Hon. Franklin Dye, Secretary New Jersey State Board of Agriculture, Trenton, N. J.; A. Liautard Rogers, Esq., Counsel New Jersey State Board of Veterinary Medical Examiners, Woodbury, N. J.; Dr. W. B. Hille, Salem, N. J.; Dr. Bassett Kirby, Woodbury, N. J.; Dr. Carroll T. Rogers, Woodbury, N. J.; Dr. J. Ellis Paulin, Glassboro, N. J.; Dr. Ralph L. Clements, Haddonfield, N. J.; Dr. Oscar Nelson, Woodcliffe, N. J.; Messrs. Chas. Grauch and Thos. Kelly, veterinary stud-

ents, University of Pennsylvania; Mr. J. H. Phelon, the Norwich Pharmacal Co., Norwich, N. Y.; Dr. H. L. Wignall (M. D.), Washington Park, N. J.; Dr. George Evans Reading (M. D.), Woodbury, N. J., and Dr. James Hunter, Jr. (M. D.), Westville, N. J., the last two gentlemen being delegates from the Gloucester County Medical Society, and Hon. John Boyd Avis, Woodbury, N. J., Speaker of the House of Assembly, New Jersey Legislature.

The credentials of Drs. Geo. E. Reading, Luther W. Halsey and James Hunter, Jr., as delegates from the Gloucester County Medical Society, were accepted, as was that of Dr. Richard Cole Newton (M. D.), of Montclair, N. J., duly appointed delegate of The Medical Society of New Jersey.

The Secretary presented letters from the following gentlemen: Dr. Edward B. Voorhees, Director New Jersey Agricultural Experiment Station, New Brunswick, N. J.; Dr. Henry Mitchell, Secretary New Jersey State Board of Health, Trenton, N. J.; and Ex-Governor David O. Watkins, Trenton, N. J., Commissioner of Banking and Insurance, State of New Jersey.

MINUTES APPROVED.

On motion the minutes of the January meeting, as published in the AMERICAN VETERINARY REVIEW, February, 1905, were approved and the reading of the same dispensed with.

NEW MEMBERS PROPOSED.

The following gentlemen were proposed for membership: H. G. Black, V. M. D., U. of P., Hammonton, N. J.; Bassett Kirby, V. M. D., U. of P., Woodbury, N. J.; J. Ellis Paulin, V. S., registered practitioner, Glassboro, N. J.; Carroll T. Rogers, V. M. D., U. of P., Woodbury, N. J. Their applications were duly referred to the Executive Committee.

REPORTS OF COMMITTEES.

Executive Committee.—Chairman Loblein reported that his committee had held two meetings since the annual meeting, one in Newark and the other in Camden, the special business of both meetings being one of coöperation with the Local Committee of Arrangements insuring the success of the Washington Park meeting.

Public Health Committee.—Dr. Mecray reported progress.

Animal Industry Committee.—Secretary read report from Chairman Pope.

Legislation Committee.—Chairman Lowe reported progress.

Finance Committee.—Report by Dr. J. Payne Lowe, Chairman.

Publication Committee.—Report by Secretary.

Press Committee.—Report by President.

Prosecution Committee.—Chairman T. E. Smith reported in regard to the Hafers and Barnett cases. Dr. Smith stated that the Committee had been given to understand that Hafers intended going to a recognized three-year college next fall and of complying with the conditions of the State Board of Veterinary Medical Examiners. Therefore the Committee recommended that Hafers be given this opportunity. In the Barnett case the Committee reported progress. Report adopted and Committee continued.

Local Committee of Arrangements.—Report made by Chairman T. B. Rogers showing that everything had been done by the Committee for the comfort and entertainment of members and guests.

REPORTS OF DELEGATES.

Dr. Hurley reported briefly the great meeting of the Pennsylvania State Veterinary Medical Association at Philadelphia last March.

Dr. Smith gave a fallacious report of the exhibition of women and horses at the National Horse Show, Madison Square Garden, N. Y. A member asked Dr. Smith whether he was reporting the 1904 or the 1905 show, which was the signal for an outburst of laughter.

Dr. Vander Roest reported the Hollywood, Long Branch, Horse Show in an interesting manner.

NEW MEMBERS ELECTED.

The Executive Committee reported favorably the names of Drs. Black, Kirby, Paulin and Carroll T. Rogers. Upon motion, the Secretary cast the ballot of the Association for their election. President Budd duly declared these gentlemen elected to membership and appointed Dr. T. B. Rogers a committee to escort the new members before the Association for introduction.

TREASURER'S REPORT.

MAPLE SHADE, N. J., July 10, 1905.

Receipts.

Balance on hand Jan. 1st, 1905	\$156.57
Initiation fees four new members elected at the January meeting, 1905	20.00
Dues collected	77.25
	<hr/>
	\$253.82

Disbursements.

Paid out Jan. 12, 1905	\$12.50
Geo. W. Pope	28.83
Cigars	3.50
Inglis Co	2.75
Paterson Press	10.75
Ed. Seeery—floral piece (Miller funeral)	10.00
Ernest Bogert	2.00
	70.33
July 10, 1905, Balance on hand	183.49
	\$253.82

Respectfully submitted,
JAMES M. MECRAY, *Treasurer.*

Upon motion, the Treasurer's report was received and ordered spread in full upon the minutes.

DR. MILLER'S DEATH.

The Secretary reported the death of Former President Wm. B. E. Miller, which occurred at Hightstown, N. J., March 2, 1905, and stated that a committee consisting of Drs. Albert Brown, of Hightstown; B. F. King, of Little Silver; Geo. F. Harker, of Trenton; John P. Mathews, of Princeton, and himself, representing the Association, attended the funeral at Hightstown, March 4th, and that a suitable floral piece had been sent expressing the sympathy of the Association.

President Budd appointed Drs. Wm. Herbert Lowe, Rogers and Harker a committee to draft suitable resolutions, who presented the following :

WHEREAS, In the death of Wm. B. E. Miller, D. V. S., at Hights- town, N. J., March 2, 1905, this Association loses one of its charter members and its second President, and

WHEREAS, There was no more earnest, loyal and devoted member of this Association than Dr. Miller from the time of its inception in 1884 until the day of his death, and

WHEREAS, The members of this Association desire to place a testimonial of their regard for him, and an appreciation of his labors in behalf of the upbuilding of the profession, on record in the archives of this Association ; therefore, be it

Resolved, That a page be set apart to his memory and that these resolutions be inscribed thereon and that a copy of the same be sent to his family.

Signed WM. HERBERT LOWE, D. V. S.
THOS. B. ROGERS, D. V. S.
GEO. F. HARKER, V. M. D.

CLEVELAND, AUG. 15TH-18TH.

President Budd announced the forthcoming annual convention of the American Veterinary Medical Association at Cleve-

land, Ohio, Aug. 15th-18th, and expressed the hope that the profession of New Jersey would be well represented by a large attendance from this State.

After the transaction of considerable routine business the Association adjourned at 1.30 P. M. for luncheon.

SAIL ON THE DELAWARE.

At 2.30 P. M. members and guests took the steamer *Columbia* for "Fairyland" and enjoyed a delightful afternoon's sail on the Delaware, passing the historic Red Bank battlefield, running close under League Island and Fort Mifflin, Marcus Hook, etc., arriving back at Washington Park at 7 P. M.

BANQUET.

At 7.30 P. M. members and guests, including the ladies, enjoyed a banquet at Washington Park. At the conclusion of the banquet Hon. John Boyd Avis, Speaker of the House of Assembly, New Jersey Legislature, delivered a most hearty and cordial address of welcome to the Veterinary Medical Association of New Jersey to South Jersey, which was responded to by Dr. Wm. Herbert Lowe in behalf of the Association. President Budd acted as toastmaster and was very happy in his introduction. Among the other speakers were Dr. Williams, Cornell University; Dr. Adams, University of Pennsylvania; Dr. Geo. E. Reading (M. D.), Dr. James Hunter, Jr. (M. D.), Alex. Liautard Rogers, Esq., Dr. W. Horace Hoskins, Hon. Franklin Dye and Dr. T. E. Smith. The banqueters viewed with interest the special fountain display from the dining hall. Thus ended the festivities following the first day's programme of the Veterinary Medical Association of New Jersey.

SECOND DAY'S SESSION.

Meeting called to order at 9 A. M., July 14th, President T. Earle Budd in the chair.

PAPERS READ.

Papers as follows were read and discussed :

1. "The Relation Between Human and Veterinary Medicine," George Evans Reading, M. D., Woodbury, N. J.
2. "The Live-Stock Interest of and Its Relation to Agriculture and Veterinary Science," Hon. Franklin Dye, Secretary State Board of Agriculture, Trenton, N. J.
3. "Canine Surgery," B. K. Baldwin, D. V. S., Newark, N. J.

4. "Fungi Poisoning," Wm. Herbert Lowe, D. V. S., Paterson, N. J., and Frank R. Sandt, M. D., Paterson, N. J.

5. "Methods for Improvement in Veterinary Education," T. B. Rogers, D. V. S., Woodbury, N. J.

The discussion of these papers was most instructive and profitable. Among those who took part were Drs. Williams, Marshall, Budd, Baldwin, Noack, Vander Roest, Hoskins, Rogers and Adams.

Dr. Leonard Pearson, State Veterinarian of Pennsylvania, was to have read a paper on "Dairy Inspection," but was prevented from doing so by being summoned to the State encampment of that State to investigate an alleged outbreak of glanders. Other papers on the programme were not reached. Meeting adjourned at 1 P. M. for luncheon.

CLINIC.

The rest of the afternoon after luncheon was devoted to the conduct of a clinic, which was creditable to the Local Committee of Arrangements and to the demonstrators and operators who took part. Among the operators were Drs. Adams and Williams. It would simply be preposterous for me to attempt to describe what had to be seen in order to be appreciated.

TRENTON, JANUARY, 1906.

The Association voted to hold the annual meeting (January 11, 1906), at Trenton, and the President appointed Dr. Geo. F. Harker, of Trenton, chairman of the Local Committee of Arrangements.

WM. HERBERT LOWE, *Secretary.*

MISSOURI VALLEY VETERINARY ASSOCIATION.

The eleventh annual meeting of the Missouri Valley Veterinary Association was held in the Board of Education Rooms, City Hall, Omaha, Nebraska, June 26-27, 1905. The meeting was called to order at 9 A. M., by the President, Dr. J. H. McNeil. The following members and visiting veterinarians were present: Drs. J. S. Anderson, J. A. Berg, C. E. Baxter, A. Bostrom, E. Biart, G. H. Baxter, L. D. Brown, G. D. Cooper, A. T. Everett, H. Dell, G. W. Geise, J. H. Gain, J. J. Drasky, J. L. Hoyleman, J. W. Haxby, J. W. Halley, J. Hart, E. W. Hanson, H. Jensen, G. A. Johnston, G. A. Kay, B. F. Kaupp, W. C. Langdon, G. A. Meixel, J. H. McNeil, D. H. Miller, S. T. Miller, F. E. Johnson, W. R. O'Neil, A. T. Peters, D. F. Stouffer,

M. D. Strong, V. Schaefer, S. Stewart, H. C. Simpson, L. U. Shipley, P. Simonson, W. A. Stuhr, W. A. Thomas, G. R. Young, L. D. Thurston, S. A. Peck, J. Vincent, I. W. Edwards, H. H. Wolf, J. McRoberts.

The minutes of the previous meeting were read and approved.

Under the head of correspondence, the Secretary read letters of regret of inability to attend from Drs. D. F. Lucky, F. M. Starr, and A. A. Munn.

The following applications for membership were favorably passed upon by the Board of Censors and duly elected to membership by the Association : Nebraska—P. Simonson, G. H. Baxter, J. L. Hoyleman, I. W. McEachran, G. A. Johnston, G. A. Meixel, W. H. Tuck, J. A. Berg, A. T. Everett, J. Hart, M. D. Strong. Iowa—J. Nicholson, J. Vincent, J. W. Haxby, L. U. Shipley, E. C. Sheumaker. Missouri—J. S. Leslie, B. P. Rainey, R. L. Allen, F. Jellen, T. S. Hickman. Kansas—L. H. Cravens, R. J. Foster, C. B. Clement, A. G. Coppenbarger, F. W. Roach. Texas—R. W. C. Lowry.

The Committee on Legislation reported that during the past year Nebraska and Missouri had each secured a law to regulate the practice of veterinary medicine.

Moved by Dr. V. Schaefer, seconded by Dr. J. J. Drasky, that a vote of thanks be extended to the committee.

The following officers were then elected for the ensuing year :

President—Dr. J. S. Anderson, Seward, Neb.

First Vice-President—Dr. S. Stewart, Kansas City, Mo.

Second Vice-President—Dr. H. Jensen, Weeping Water, Neb.

Secretary-Treasurer—Dr. B. F. Kaupp, Kansas City, Mo.

The following Board of Censors was elected for the ensuing year ; Drs. D. H. Miller, L. D. Brown, E. Biart, J. J. Drasky, L. U. Shipley.

Moved, seconded, and carried that the Chair appoint a Committee on Resolutions. The President then appointed the following : Drs. S. Stewart, J. S. Anderson, E. Biart.

A paper was presented by Dr. S. A. Peck, of Oak Grove, Mo., upon the subject of "Malignant Growth of the Fetlock of the Horse." This paper brought out a lengthy discussion. Dr. Peck stated that he had successfully treated these growths by excising all possible, then using dry dressing, consisting of powdered bichloride of mercury and charcoal, bound on by

means of cotton and bandage, removing twice a week.

Dr. J. H. Jensen related his treatment of bursatti. He has successfully used oil thuja and vaseline over surface and by hypodermic injections of the oil around the circumference of the ulcer.

Dr. S. Stewart reported a case which was presented at the clinic of the Kansas City Veterinary College. A small tumor appeared on the eyelid of a horse, which was excised. A microscopic examination was made, which showed it to be a small spindle-celled sarcoma. The neoplasm reappeared; this time hypodermic injections of oil thuja around the circumference resulted in complete recovery.

An invitation was extended to the Association by the Secretary of the Ak-Sar-Ben, to attend its initiatory ceremonies at the den at 8 P. M.

It was moved, seconded, and carried that the meeting adjourn to attend clinic at 1 P. M. and to accept invitation of the Ak-Sar-Ben and to again convene the meeting June 27, 9 A. M., for the purpose of presentation and discussion of papers.

At 1 P. M. clinic was held at the hospital of Dr. W. C. Langdon, 2411 North Fifteenth Street.

Case No. 1.—Resection of the sterno-maxillaris muscle for cribbing, by Dr. V. Schaefer.

Case No. 2.—Cunean tenectomy for relief of spavin lameness, by Dr. W. C. Langdon.

Case No. 3.—Arytenoideectomy for relief of roaring, by Dr. J. S. Anderson.

Case No. 4.—There was presented a black gelding, weighing 1,100 pounds, 14 years of age, which presented an enlargement about eight inches anterior to scapula and about ten inches in diameter. Diagnosis: fibro-cartilaginous tumor.

JUNE 27, 1905.

Meeting called to order at 9 A. M. by First Vice-President Dr. V. Schaefer.

The first paper was presented by Dr. E. Biart, on "Amputation of Uterus of Bitch."

Dr. H. Jensen reported a bitch which showed symptoms of pregnancy. Later the bitch was operated upon and pus was found in one horn of the uterus.

Dr. J. J. Drasky reported a case in a mare that showed signs of pregnancy, udder produced milk. Sixteen months later a rusty colored fluid discharged from the vagina. Upon examina-

tion the uterus was found to be filled with a purulent fluid.

Dr. J. Vincent reported a remarkable case in a mare which upon examination the uterus was found to contain effete material, including plum seeds and kernels of corn. The animal became emaciated and finally died. Upon post-mortem examination it was determined that there had been an inflammation present involving the rectum and vagina which resulted in adhesion and the formation of a fistulous opening communicating with the two organs, allowing intestinal contents to pass into uterus.

The next case presented was "Sclerastomiasis *vs.* Swamp Fever," by Dr. W. A. Thomas. The Doctor stated that the authors state that the *Strongylus armatus* have been found to invade all tissues but the nerve and bone, but that Dr. J. S. Anderson reports having found them in the femur of a horse. The Doctor exhibited some interesting specimens of the family of strongylidæ. He reported an outbreak in Nebraska, in which 100 horses were lost in one locality due to the *Sclerastoma tetracanthum*. The symptoms shown were those of diarrhoea, pale visible mucous membranes, weakness, emaciation, paresis in hind limbs and oedema of under part of abdomen. This paper brought out a lengthy discussion of parasitic diseases of the various animals. Dr. L. U. Shipley reported cases of inflammation of bowels due to the *Sclerastoma tetracanthum*. Dr. A. T. Peters reported that creosote and gasoline had given good results in the treatment of blood-sucking intestinal worms in cattle and sheep.

Dr. Harry Dell reported having found tape-worms and round worms in the intestinal tract and ticks upon the surface of a snake, 20 feet in length, found in the Philippine Islands.

Dr. W. A. Stuhr reports cases of poisoning and death due to certain species of fungi that grew upon grass in certain localities and seasons in Iowa. In the course of a day or two the faeces of the affected horse would be thoroughly studded by colonies of the peculiar fungi, found upon the plant, that in many cases had produced fatal results.

It was moved, seconded, and carried that a committee of three be appointed by the President to present the beautiful gold headed cane, purchased by the members present, to Dr. H. L. Ramacciotti. The Doctor, meeting with misfortune which resulted in the amputation of his left foot, was unable to attend the meeting. He has been a faithful worker in the profession and deservedly commands the respect of all. Drs. A. T. Peters, S. Stewart, and D. H. Miller were appointed on this committee.

The Committee on Resolutions made the following report, which was accepted and ordered spread on the minutes :

RESOLUTION OF SYMPATHY.

" WHEREAS, Our fellow-member and co-worker, Dr. H. L. Ramacciotti, has suffered infection even unto the door of death ; and

" WHEREAS, He has met with the irreparable loss of his left foot, be it

" *Resolved*, That we, the Missouri Valley Veterinary Association, congratulate him on his courage and his success in the battle for life ; and, be it further

" *Resolved*, That we extend to him our most heartfelt sympathy in the physical disability he must hereafter endure ; and, be it further

" *Resolved*, That we have fullest expectation of his complete restoration to general good health and look forward to many years of professional coöperation and goodfellowship."

RESOLUTION OF THANKS.

" *Resolved*, That we are under lasting obligations to the local committee for their hospitality and attention to our personal pleasure and comfort, and extend to them our thanks.

" *Resolved*, That we fully appreciate the faithful labors of the outgoing officers in arranging the successful and valuable meetings during the Association year just ending and extend to them our sincere thanks."

It was moved by Dr. G. R. Young and seconded by Dr. J. H. McNeil that the Missouri Valley Veterinary Association extend an invitation to the American Veterinary Medical Association to meet in Kansas City in 1906, and that this Association assume part of the responsibilities of the committee on local arrangements should Kansas City be chosen. Carried unanimously.

Moved, seconded, and carried that the President appoint a committee of four, one from Nebraska, one from Iowa, one from Kansas, and one from Missouri, to present the invitation at the coming meeting of the American Veterinary Medical Association. President J. S. Anderson made the following appointments on this committee : Dr. S. Stewart, Kansas City, Mo., Chairman ; Dr. H. Jensen, Weeping Water, Neb.; Dr. J. H. McNeil, Ames, Iowa ; Dr. A. Plummer, Ft. Riley, Kan. Meeting adjourned to luncheon to meet at 1 P. M.

1 P. M.—Meeting called to order by Dr. J. H. McNeil.

Dr. L. D. Brown reported a case of tuberculosis in a young calf, which was probably congenital. Dr. S. Stewart reported a case of tuberculosis in the free extremity of the penis of a bull, which would make it possible to transmit the tubercle bacilli through the act of coition, and another case in which tuberculosis was found in the foetus.

Dr. V. Schaefer then gave an interesting talk upon the subject of actinomycosis, reporting a case of actinomycotic polypus in the pharynx, which greatly interfered with respiration and deglutition.

Dr. W. A. Stuhr, of Iowa, then read a paper on "Supposed Cockle-bur Poisoning in Cattle," prepared by Dr. D. F. Lucky, of Missouri.

Under reports of cases, Dr. H. Jensen reported an interesting case in a mule. While standing there would be a spasmoidic contraction of the nasalis longus muscles.

Dr. J. H. McNeil extended an invitation to the members of the Missouri Valley Veterinary Association to attend the course in stock-judging at Ames, Iowa, which would be conducted in January.

Meeting adjourned.

B. F. KAUPP, *Secretary.*

TEXAS VETERINARY MEDICAL ASSOCIATION.

Pursuant to a call issued by President Francis, members of the Texas Veterinary Medical Association assembled at 1 P. M. in the National Live Stock Exchange Building, Fort Worth, Texas, March 24th, for its third annual meeting. The Executive Committee having met at 11.30 A. M., and the members of the Association having viewed and discussed several interesting pathological specimens, collected through the efforts of Drs. Blount, Paxson and Ruth, of the B. of A. I., the President promptly at 1 P. M. called the meeting to order.

The following members responded to roll-call: Drs. W. C. Bower, Fort Worth; T. A. Bray, El Paso; H. D. Paxson, Fort Worth; A. Ruth, Fort Worth; L. E. Warner, Dallas; S. L. Blount, Fort Worth; J. H. Rietz, Fort Worth; A. E. Flowers, Dallas; W. G. Langley, Dallas; E. L. Lewis, Waxahachie; W. A. Knight, Houston; M. Francis, College Station.

The minutes of the last meeting were read by the Secretary, and being found correct were approved. The report of the Treasurer, after being audited by officers of the Association,

was found correct and approved. The election of new members being next in order, the following applications were submitted, and upon vote the applicants thereof were declared elected members of the Association: Drs. C. E. Mauldin, El Paso; Wm. M. McKellar, Fort Worth; M. A. Peck, Fort Worth; R. Lee Rhea, McKinney; Jas. Lewis, McKinney; S. G. Bittick, Fort Worth.

Through a clerical error in the application of Dr. J. W. Burby, of San Antonio, action was deferred thereon until the next meeting.

The election of officers to serve for the ensuing term was now entered upon, which resulted in the following gentlemen being elected to serve:

President—Dr. A. E. Flowers, Dallas.

First Vice-President—Dr. T. A. Bray, El Paso.

Second Vice-President—Dr. S. L. Blount, Ft. Worth.

Treasurer—W. G. Langley, Dallas.

Secretary—E. L. Lewis, Waxahachie.

Dr. W. A. Knight, of Houston, was elected State Secretary of the A. V. M. A.

It was moved by Dr. Owens and seconded by Dr. Paxson, that a new edition of the Constitution and By-Laws, including the Code of Ethics, be ordered printed in appropriate style, and distributed among the members. Carried.

The details of the regular order of business having been disposed of, the reading of papers came next on the programme. In the order read and discussed they were as follows:

"Behring's Work on Suppression of Tuberculosis," by Dr. J. H. Rietz, of Fort Worth.

"Traumatisms in Beef Animals," by Dr. H. D. Paxson, Fort Worth.

"Cattle and Sheep Scab," Dr. J. W. Parker, San Antonio.

"Food Poisoning," by Dr. E. L. Lewis, Waxahachie.

"Fistulous Tracts and Their Treatment," by Dr. W. G. Langley, Dallas.

Extended and interesting discussions of these admirably prepared papers were indulged in by the members present. In answering and defending themselves the writers evinced a carefulness of preparation and thorough mastering of subject very gratifying to all present. Their length forbids reproduction here: suffice it to say they were of unusual merit, as was evidenced by the hearty applause that greeted the reading of each and by the animated and sustained discussion which followed.

A vote of appreciation and thanks was tendered the members presenting the papers. Under this head, it was moved by Dr. Bray and seconded by Dr. Blount, that a vote of thanks be also extended the officers of the Association for their untiring and successful efforts during the past year in behalf of the Association and in the interests of the profession generally in the State. Carried.

It was with anticipations of the keenest pleasure that the members now called upon Dr. M. Francis, Professor of Veterinary Science in the Texas A. and M. College, and an active member of the profession, to relate the story of his visit to Europe, upon which occasion he visited some of the renowned veterinary institutions of the Old World. With a few preliminary remarks upon points of interest *en route*, he spoke first of the great Government School at Hanover, Germany. He said it would be a revelation to an American and to the American student especially. This is a magnificently equipped institution, splendidly managed, and perfectly arranged, its cost approximating one million dollars. The buildings, all of the most modern and approved type, were absolutely fireproof. The demonstrating, operating, chemical, clinical and hygienic departments were marvels in their way; especially does the Doctor emphasize the superior and unexcelled method of clinical instruction, together with unlimited clinical material—all so perfectly arranged and organized that there is no discord anywhere. He remarked that the dog and cat clinics as well as those for numerous others of the smaller species, would also be a revelation. With wonderful care and perseverance, everything that may serve to lighten erstwhile darkened paths of science and enrich the knowledge of human kind, is observed, studied, experimented upon, until some definite result is obtained. He gives the palm to Hanover among the German schools as the one which would prove very probably the most satisfactory to the foreign student. Technical thoroughness is there combined with the principles of practical application. He enlarged upon the courteous treatment and attention shown him on every hand and of the high character professionally and otherwise of the officials and instructors of these schools. He said it would make any one feel proud of the profession to go through one of such places. His next stop was at Berlin, which college he praised highly, but did not regard it as the equal of Hanover. The dog clinics and hygiene of the Berlin institution, he said, were unsurpassed. A tour of the Dresden

and Munich schools was also made, and he was everywhere given every opportunity to see all that was to be seen. In summarizing the results of his tour, the Doctor said that the maintenance of such extensive institutions under our system of government was impossible, but that to visit them was an education in itself and would be of incalculable benefit. He thinks the German would "tackle" anything and that their attention to minute detail is amazing. In horsemanship he does not regard him equal to other nations. For instance, in casting a horse, when not using a table, they use sixteen men where we use four. But in thoroughness of technique, management and arrangement, in hygiene and clinical instruction they are unequalled. The Doctor was warmly thanked for his graphic and instructive account of a memorable visit.

It was now moved by Dr. Flowers, seconded by Dr. Warner, that Dallas be selected for the next annual meeting. Arguments *pro* and *con* were indulged in, and a vote being called for, Dallas was selected.

By a unanimous vote strong praise was accorded the REVIEW for its able work along lines of mutual interest, for its maintenance of a high standard among professional publications, and its staunch and unwavering championship of all that pertains to our professional welfare.

Although we did not extend our deliberations into several morning and evening sessions, with clinics, demonstrations, etc., this was nevertheless the most successful meeting ever held of the Texas Veterinary Medical Association. Organized only three years ago with a handful of men, we have now an active membership of 35. Several attempts have been made to obtain legislative recognition and protection, but as yet there are no results. Texas is on the jump in developing all lines of industry, the class of stock is grading higher every year, a better class of men of our profession are seeking locations in this vast empire. It is but the proverbial question of time before we will be recognized and given that which is but the just dues of men.

E. L. LEWIS, *Secretary.*

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

The fifteenth annual meeting was held at the Hotel Sherlock, Racine, Feb. 21, at 2 P. M., with the following members present: H. Arpke, S. Beattie, B. L. Clark, D. B. Clark, C. M. Crane, H. F. Eckert, C. C. Evely, E. R. Flack, R. S.

Heer, G. Ed. Leech, E. H. Newton, G. W. Noble, J. F. Raub, Chas. Schmitt, L. C. Tasche. Those arriving later were E. D. Roberts, E. A. McCullough, H. P. Clute, A. Alexander and A. H. Harting. Visitors present were Dr. C. J. Rhodes, Dr. G. H. Harland, Dr. H. D. Pattison, Dr. G. W. Minshall, Dr. R. M. Thompson and Dr. Stone.

The minutes of the previous meeting were read by the Secretary and adopted. The Secretary's report of accounts was read and adopted. The Treasurer's report of accounts was read and adopted.

The Censors reported five applications for membership, and the following gentlemen were unanimously elected: Drs. C. J. Rhodes, Beloit; R. M. Thompson, Darlington; G. H. Harland, Sussex; H. D. Pattison, Beloit, and G. W. Minshall, Viroqua.

The Legislative Committee reported on new Veterinary Bill, which was read by the Secretary. Dr. H. P. Clute moved that Drs. Alexander, Roberts and Beattie be appointed as a committee to follow the Veterinary Bill and employ a lobbyist to assist in trying to get the bill through the Legislature. Carried.

A motion was also laid before the house to empower the Secretary to tax each member present a fee of one dollar and take the sum of twenty-five dollars from the treasury to use in support of the Veterinary Bill. The motion was seconded and carried.

On motion, Dr. Beattie was appointed Secretary of Committee on Legislation and was instructed to keep a record of accounts, which should be reported at our next meeting.

A motion was made and seconded that the Committee of Prosecution be dropped. Motion lost.

A motion was made and carried that the Chair appoint a new Committee on Prosecution, and the following gentlemen were appointed: Drs. A. H. Harting, J. M. O'Reilly, G. W. Minshall, L. C. Tasche, A. H. Arpke, and R. M. Thompson.

Dr. Raub moved that the by-laws be suspended to elect officers for the ensuing year.

Dr. Raub moved that Dr. Schmitt be nominated for President. Dr. Leech seconded the motion. There being no other nominations for President, Dr. Arpke's motion was seconded by Dr. Tasche to declare Dr. Schmitt the unanimous choice of the Society, and that the Secretary cast the ballot for Dr. Schmitt for President.

Dr. Schmitt moved that Dr. Arpke be nominated for Vice-

President. Motion seconded by Dr. Eckert, and no other nominations being made the Secretary was authorized to cast the ballot for Dr. Arpke for Vice-President.

Dr. Beattie was declared the unanimous choice of the Society for Secretary and elected. Dr. Crane moved to elect the Secretary as Treasurer, which was voted on by the Society and Dr. Beattie was elected Treasurer.

Drs. Rhodes, Newton and Arpke were nominated for Censors, and by motion the Secretary was authorized to cast the ballot for the above and they were elected.

The President-elect now took the chair, and after a short address, the Society adjourned to meet at 7 P. M.

7.30 P. M.—Dr. Raub reported a case of uræmic poisoning in a colt three years old while running at pasture, the patient having three different attacks. The patient was treated with potassium iodide and made a good recovery. Discussion by Drs. Crane, Leech, Alexander, Schmitt and Eckert.

Dr. Alexander reported on a new treatment for barren cows, which he says has been quite successful. The treatment consists of the injection of an aqueous solution of common yeast twelve hours before breeding.

Dr. Schmitt read a paper on "Nervous Colics of the Horse," which was discussed by Drs. Alexander, Leech and Arpke. The essayist was excused by motion and a vote of thanks was extended to Dr. Schmitt.

Various places were considered, throughout the State, as the most suitable place for holding the semi-annual meeting, which were voted on, and Sheboygan receiving the largest number of votes, was chosen.

S. BEATTIE,

Secretary.

CONNECTICUT BOARD OF VETERINARY EXAMINERS.

Under the recent law passed by the Connecticut Legislature, the Governor has appointed the following veterinarians as members of the Board of Examiners: Dr. Richard P. Lyman, Hartford, five years; Dr. Frank A. Ingram, Hartford, four years; Dr. B. K. Dow, Willimantic, three years; Dr. J. H. Gardner, Norwich, two years; Dr. Thomas Bland, Waterbury, one year.

NEW YORKERS who are unable to go to Cleveland should keep the Ithaca meeting steadily in mind.

THE ALUMNI SOCIETY OF THE VETERINARY DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA

held its annual banquet on the evening of June 14th. It was announced that a friend of the department who wished his identity withheld had given \$100,000 for maintenance. The \$100,000 appropriated by the State legislature is now available and work will shortly be begun on the new buildings for the department. A purse of \$500 was presented to Dr. Leonard Pearson, dean of the department, and he was appointed a delegate to the Eighth International Veterinary Congress, which will be held at Budapest in August. The following officers were elected : President, Dr. W. H. Ridge ; Vice-president, Dr. A. F. Schreiber ; Secretary and Treasurer, Dr. D. T. Woodward. Dr. John W. Adams was toastmaster. Toasts were responded to by Dr. B. F. Senseman, Dr. W. Horace Hoskins, Dr. S. S. J. Harger, Dr. William Herbert Lowe, Dr. Eugene W. Bradley, and Dr. Leonard Pearson.—(*N. Y.-Phil. Med. Journal*; July 1.)

MASSACHUSETTS VETERINARY ASSOCIATION.

The annual outing of the Massachusetts Veterinary Association was held Wednesday afternoon, June 28th, on board the tug *Comorant* down Boston Harbor.

Members present were : Doctors Emerson, Burr, Boutelle, Babbitt, Lewis, Watson, O'Connel, Stratton, Winchester, Rogers, Pierce, Howard, Winslow, Sherman, Bunker, Thayer, Cleaves, La Baw, Paquin, Quinlan and Playdon.

There were also several guests present.

A short business meeting was held, at which Dr. R. A. Sibley was elected a member, also the name of Dr. John M. Farquhar was proposed for membership.

All enjoyed the fishing, beautiful sail and, last but not least, the excellent dinner provided. Committee, Drs. Rogers, Burr, and Lee.

F. J. BABBITT, M. D. V., *Secretary.*

DELEGATE TO INTERNATIONAL VETERINARY CONGRESS.—
Albany, N. Y., July 21—Dr. William H. Kelly, of Albany, Chief Veterinarian of the State Department of Agriculture, has been appointed by the State Department at Washington as delegate for the United States to the International Veterinary Congress, to be held at Budapest, Hungary, September 3-9.

NEWS AND ITEMS.

DR. G. D. NOBLE, of Boise City, Idaho, has been appointed State Veterinarian of Idaho.

THE veterinarian who absents himself from Cleveland on the 15th to 18th inst. is to be both centured and pitied.

DRS. HAYNES AND SON, Jackson, Mich., have recently added a veterinary horse ambulance to their hospital equipment.

DR. W. FRAZER, of Salt Lake City, Utah, has been appointed Veterinarian in the U. S. Army, stationed at Manila, P. I.

DR. F. C. GRENSIDE, of New York, officiated as a judge of heavy harness horses at the recent Plainfield (N. J.) horse show.

DRS. ROSCOE R. BELL, of Brooklyn, and E. J. Robbins, of Bayshore, will be the veterinary judges at the Bayshore (L. I.) horse show, August 3-5.

DR. T. BENT COTTON, of Mt. Vernon, Ohio, spent nearly a week with Dr. Gribble, of Washington, C. H. The latter was quite busy and the wooing was done riding about in the buggy.

DR. J. V. NEWTON, of Toledo, Ohio, is going to tell of his twenty-seven years' experience in veterinary practice at the Cleveland meeting. This item alone is worth twice the cost of the trip.

"It gives me great pleasure to send you remittance for another year of the REVIEW. It has been a very valuable publication, and the last year has been the best. I would not be without it for many times its cost."—(H. S. Richards, Pittsburgh, Pa.)

VETERINARY HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA BURNED.—On the evening of July 6th the temporary hospital of the veterinary department of the University of Pennsylvania was destroyed by fire. Twenty dogs of more or less value were burned. Seven horses and thirty head of cattle were rescued. One of the horses, valued at \$4,000, had been trephined a few days before.

NICHOLAS F. BRADY, New York City, son of Anthony J. Brady, has opened a home for the superannuated fire horses of Gotham. Heretofore it has been the custom to sell off the fire horses when they grew too old or otherwise were incapacitated from active duty, but from this time onward instead of going to peddlers' carts and similar uses they will have comfortable homes.

THE profession of the country will learn with great regret of the misfortune which befell their colleague, Dr. H. L. Ramacciotti, of Omaha, Neb., recently, occasioned by an infected wound of the foot, resulting in amputation of the diseased member. Those who attended the A. V. M. A. meeting in Omaha in 1898 have pleasant recollections of the many courtesies shown them by the Doctor, and will be glad to know that beyond this physical disability his health is unimpaired, though for a time his life was seriously menaced. The profession, especially of the West, needs Ramacciotti, for he is one of the self-sacrificing, loyal workers who are profession-builders.

W. C. MILLER, D. V. S., of New York City, late House Surgeon of the American Veterinary Hospital, and clerk of the New York-American Veterinary College, at present engaged in private practice in Gotham, was married June 14th, to Miss Elizabeth F. Murphy, at the Church of the Paulist Fathers, 59th Street and Columbus Avenue, New York City. The wedding tour consisted of a trip to Montreal, Ottawa and other Canadian cities, in the first of which he visited the Veterinary Department of LaSalle University. We congratulate the genial young doctor upon the happiness which he so well deserves, and trust that now he will settle down and frequently give our readers an account of some of the interesting cases which come under his observation, as his opportunities are only exceeded by his capacity to transcribe them for publication.

VETERINARIANS LICENSED TO PRACTICE IN NEW JERSEY.—The following gentlemen were successful at the June Examinations of the New Jersey State Board of Veterinary Medical Examiners at Trenton and have been duly licensed to practice veterinary medicine, surgery and dentistry in^{*} that State: Ezra S. Deubler, V. M. D. (U. of P.) Tunkhannock, Pa.; Ernest C. Dingley, V. M. D. (U. of P.) Villa Nova, Pa.; William D. Howatt, V. M. D. (U. of P.) White Plains, N. Y.; Thomas J. Mahaffy, V. M. D. (U. of P.) Wilmington, Delaware; Frank V. Matthews, M. D. C. (Chicago Veterinary College), McKeesport, Pa.; Oscar Nelson, V. M. D. (U. of P.) Woodcliff, N. J.; William H. Paxson, V. M. D. (U. of P.) Solebury, Pa.; Carroll T. Rogers, V. M. D. (U. of P.) Woodbury, N. J.; and Matthew S. Suttle, V. S., M. D. V. (Ontario Veterinary College, also McKillip Veterinary College) Paterson, N. J.

TO IMPROVE THE BREED OF HORSES IN AUSTRALIA.—Professor Angus remarked on Tuesday that nothing appealed to a stranger in South Australia with a knowledge of horses more

forcibly than the number of unsound animals that were being used for stud purposes. "Efforts are, however, to be made," the professor said, "to discourage this practice—or rather to encourage the breeding of sound animals. Arrangements have been made by direction from the Minister of Agriculture whereby the services of Veterinary Surgeon Desmond will be placed at the disposal of all agricultural societies between Port Augusta and Mount Gambier. The object is to make an examination of all stallions and brood mares that are to be exhibited at shows, and to grant certificates to those found to be perfectly sound. If entries for shows can only be restricted to those animals which pass the test the certificate will have additional value and an important bearing on the improvement of horses in this State. Strong endeavors have been made in the old country to compel the premium horses to possess certificates."—(*Adelaide, Australia, Register.*)

CANINE PSYCHOLOGY.—It was something that happens every once in a while, but there was one little incident connected with this fire that might cause John Burrows, naturalist and a friend of President Roosevelt, to change his attitude and admit that, after all, animals do reason. Anyway, this is what a bright and fussy Scotch terrier did early yesterday morning when a fire broke out in No. 615 Tenth avenue—which is a factory building communicating with the tenement house next door—after a late celebrant had set fire to the factory by sending off a misdirected rocket. Pete, the terrier, leaped on the bed of Charles Seidler, the janitor, and barked and scratched all the bed clothes to shreds in informing the sleeping man there was a fire and everybody was in danger of strangling to death. All of which, in the eye of Burrows, of animal life fame, simply would mean that Pete was locked in the room, and the mere instinct of self-preservation would impel him to have somebody let him out; that he had no thought of others. Well, the janitor and the terrier got out, both half strangled, and the police and firemen came and there was a great row when it was discovered the janitor's wife and young son were missing. The firemen and policemen made a race for the second story, where the woman and boy were found unconscious. And, besides, there was Pete skipping about, half scorched and strangled, barking like mad and tearing at the clothes of his playmate, the boy. Both were saved, all right, but what admirers of singed little Pete would like to have the scoffing John Burrows explain is why did the terrier return to his playmate's side after the

animal had got out once safely itself.—(*New York Press*, July 6.)

THE SPAYING OF MARES.—Once more a correspondent wants to know if it is practical to spay mares, and if a mare so treated is any more valuable than one not operated on. This subject has already been dealt with fully in this journal in various connections. A skillful veterinarian can perform the operation of spaying a mare with very little risk of death ensuing and when recovery is complete and the operation has been properly done the mare is to all intents and purposes the same as a gelding. She does not come in heat and in general keeps on the even tenor of her way much the same as the gelding. It does not appear, however, that there is anything to be gained save among race horses by spaying mares, except on rare occasions. Sometimes on account of some physical malformation or affliction a mare is continually in heat or becomes vicious when she is. In such cases the removal of the ovaries generally puts an end to the trouble. A thoroughbred or harness racing mare spayed when young knows not the troubles from which her sex suffers always in the earlier months of the racing season and therefore as a racing tool may be made more useful for the time being than her open sisters. But of course the future of the spayed racing mare is just as dark as that of the gelding, for after she can no longer win on the track she must seek some more lowly walk in which to earn her keep. That quite a number of thoroughbred fillies are spayed each season is well known. We do not think the operation has place on the farm unless in cases of deep-seated malady or vice.

—(*Breeder's Gazette*.)

A DEPARTMENT OF HORSE BREEDING AT WISCONSIN UNIVERSITY.—At the last meeting of the board of regents of the Wisconsin University there was created a department of horse breeding, and Dr. A. S. Alexander was placed in charge of it with a full professorship. Dr. Alexander has done a vast amount of good work during his term at the Badger college and now will enjoy greatly enlarged opportunities. In addition to conducting the new department he will continue his work in veterinary science. It is pleasant to be able to relate that this step has finally been taken. As has been pointed out repeatedly in these columns the agricultural colleges and experiment stations have done much work with cattle, hogs and sheep, but the matter of the horse has been shamefully neglected. A farm may prosper without meat making stock, for we have instances of

that fact at hand, but it cannot get along without teams, even though automobile or steam engine power may be used for the heavier duties of plowing and the like. It has therefore seemed all the stranger that so little attention has been paid to the horse. That the example of Wisconsin will quickly be followed is devoutly to be hoped. To be sure, it is not every State that has been so munificent in its support of its college of agriculture and station as has Wisconsin, but there is not one of the States in the cornbelt that is not amply able to install such a department if the powers that be would make the right sort of an effort in that direction. It is not necessary that a farmer should be a full fledged veterinarian to succeed on the land, but it stands to reason that if he understands the equine structure and its more common ailments he will many times be able save himself time, money and horses. Wisconsin and Dr. Alexander are to be congratulated.—(*Breeder's Gazette*.)

THE PASTEUR PREVENTIVE TREATMENT OF RABIES.—The New York Health Department gives the Pasteur preventive treatment for rabies at the Research Laboratory at the foot of East Sixteenth Street. In addition, the virus is sent out mixed with a preservative, to be administered by the attending physician to persons desiring to take the treatment at home. When sent from the laboratory it is mailed daily by special delivery. The results of treatment given by the latter method have been as satisfactory as when administered at the laboratory, but it is considered advisable that not more than two days should elapse between the mailing of the virus and its injection into the patient. The course of treatment lasts from two to three weeks. It is strongly recommended that wounds inflicted by rabid or suspected animals be thoroughly cauterized with fuming nitric acid, or, if this is impossible, with the actual cautery. Immediate washing out of the wound is also advisable. When possible, it is recommended that animals suspected of rabies be securely chained and kept under observation for eight days. If rabies exists, symptoms will develop so that a definite diagnosis is possible within this time. If the animal is killed the carcass may be sent to the laboratory for diagnosis. The routine is to make an examination of smears and stained sections of the brain tissue, and also to make animal inoculations. By the former method a positive diagnosis may be reached in from thirty-six to forty-eight hours. A failure to find the characteristic lesions does not, however, exclude rabies. In the event of a failure to find the lesions, the animal inoculations are relied on for a diag-

nosis, which usually requires from eight to eighteen days. In sending animals from a distance it is recommended that, if small, the entire body be sent. If this is impossible, the head alone should be sent. The animal or head should be securely fastened in a box, and packed with a considerable quantity of ice and sawdust; the whole to be shipped to the laboratory in a larger box.

HEREDITARY UNSOUNDNESS IN HORSES [*F. C. Grenside, U. S., in Breeder's Gazette, April 12*].—The question of hereditary unsoundness in all its aspects is by no means an open book to the horse breeder, and it is one well worth studying by him, if as thorough a knowledge as is possible of this subject will tend to lessen the percentage of unsound stock produced. Of the various causes which tend to make horse raising disappointing and unprofitable, this is one of the important ones, if not the most important. Literally speaking it is not so much the inheritance of a disease itself that we fear, but it is the tendency to the development of this disease. Comparatively few foals are dropped with unsoundness that impairs their value ultimately, but there are many that are foaled with predisposition to the development of unsoundness. The study of this subject, then, practically resolves itself into a consideration of what constitutes the predisposing causes of unsoundness. They may be divided into several heads, viz.: defective formation, defective quality and insufficient quantity of tissue and temperament. Within certain limits the practised eye of the observant horseman can determine in sire or dam the existence of these defects that are transmissible to the offspring and predispose it to the development of unsoundness. It is claimed by some authorities that some horses and mares possess a peculiar habit of body, an indefinable something about them which predisposes them to the development of some unsoundness and also their progeny. Such cases are rare, however, and their supposed existence is very frequently the result of the inability of an observer to appreciate the existence of detectible predisposing causes. If this indefinable something is the determining cause of predisposition in some cases, then the only positive evidence of its existence is the developed unsoundness. This theory presupposes that none of the detectible predisposing causes already mentioned exists in sufficient degree in such cases so that when subjects of them are subjected to more than ordinary exciting ones, they would develop unsoundness unless the peculiar habit of body exists. It also is an acknowledgment of the helplessness of breeders in

a considerable degree to prevent breeding colts with an inherent tendency to unsoundness. No matter how capable and careful a breeder is he will produce a certain percentage of unsound stock, due to heredity, but with care it can be reduced to a small one. Many breeders use a sire from convenience or from some quality that he possesses, such as speed, action, style or disposition, knowing that they are taking a chance of perpetuating some tendency to unsoundness that he possesses. Favorite mares are also bred with a disregard to the well-established principle that like begets like even when they are the victims of hereditary unsoundness or a strong predisposition to it. The successful breeder must divest himself of all sentiment and be capable of appreciating all defects which constitute predisposition to unsoundness. Of the predisposing causes defective formation is the most fertile one. The predisposition to navicular disease is hereditary. Horses with narrow deep heels and short hoofs are predisposed to it. Some observer may say : "But look at the large number of horses one sees with narrow deep heels and short hoofs that have not got navicular disease." Of course such an argument is fallacious, as there may be many compensating conditions that will tend to neutralize the tendency to this disease in some subjects. A horse with the formation of foot described, even although he is subjected to the exciting causes of hard, fast and steady work and irrational and infrequent shoeing, may be endowed by nature with a very light step. Nothing tends to prevent wear and tear of the legs and feet like light stepping. Here then is an example of an influence which tends to counterbalance the ill effects of a defective formation, but renders complicated the study of formation in predisposing to unsoundness. One then has to weigh the influence of compensating conditions in determining the ill consequences likely to result from defective formations of foot when transmitted to offspring. That defective formations of feet are handed down to progeny there is no manner of doubt. The predisposition to ringbone is undoubtedly hereditary, and one seldom finds it unless it is the result of some extraordinary exciting cause when the pastern is of good formation. The two extremes of long, light, oblique pasterns and the short, straight coarse ones, are both predisposed, the former from the tension to which the ligaments are subjected and consequent tendency to sprain, and the latter from the increased tendency to concussion. As we proceed up the front leg we find defective formation in the neighborhood of the knee predisposing to unsound-

ness. Many horses that are more or less knee-sprung are practically sound. Others become progressively weak and are decidedly unsound, so that we are not much amiss in characterizing the condition called knee-sprung as an hereditary unsoundness. A commission was appointed some years ago in England to make out a list of hereditary unsoundnesses, which they made as small as possible. The list included navicular disease, ringbone, spavin, sidebone, periodic ophthalmia or moon-blindness, and roaring. It will be observed that knee-sprung was not included. In order not to complicate matters they made the list as short as possible and only included the most serious forms of unsoundness or those that are very obstinate in yielding to treatment or are incurable. Unsoundnesses such as knee-sprung, curb or splint, though the tendency to them is undoubtedly hereditary, were not included. It was because these conditions seldom permanently interfere with a horse's practical soundness. A horse is what is called "tied in" below the knee when the leg immediately below the knee is narrower from before backwards than it is just above the fetlock. In this condition the tendons behind the knee are not well developed and are placed too close to the shank-bone at this point. This imperfect tendonous development in a front leg is not usually confined to the tendons behind the leg, called the flexor tendons, as an imperfect development of these tendons is usually associated with an impaired development of the tendons running down the front of the leg called the extensor tendons. Such a condition frequently results in shaky knees, if the subject experiences hard work, which is likely to become progressively worse. In some cases the flexor tendons appear to be much better developed than the extensors and in an individual so formed, particularly if he is inclined to stand with his fore feet well back under him, there is inordinate strain on the extensors leading to relaxation and a corresponding tendency to contraction of the flexors. Here we have a lack of balance between the extensors and flexors, and consequently a knee-sprung condition. Although shaky-kneed or knee-sprung horses are not frequently incapacitated for work the breeder should not lose sight of the fact that this condition is apt considerably to depreciate a horse's value in the market, particularly for some purposes, and the breeder can seldom afford to ignore this fact. It is not intended to advise breeders never to breed to a sire that stands a little over in the knees, especially if sufficient cause can be assigned for it, but we would recommend

them to be very wary about using sires and dams that show a congenital tendency to this defect. Purchasers of horses usually look with considerable disfavor on a horse that is at all knee-sprung. Personally I would rather buy a horse for my own use that is a little forward in the knees, than one that stands back in the knees or is what is called calf-kneed. A horse with the former defect is almost sure to be much more elastic in his step than one with the latter and consequently will not suffer to the same extent from the ill effects of concussion. A calf-kneed horse is also much more likely to suffer from strains. Knee-sprung, unlike the other unsoundnesses given in the list of hereditary trouble, is not very infrequently congenital. Swan-necked horses and those with thick, coarse throttles are considered to be of the formation most liable to develop the defect of the wind called roaring. In Great Britain and Ireland and on the continent of Europe breeders are usually very particular about avoiding roarers for breeding purposes. The climatic conditions there seem very favorable to its development, but in this country it is not nearly so much to be feared, and I would not hold aloof from an otherwise desirable sire on account of his being a roarer, though I admit the predisposition to the trouble may be transmitted. The predisposition to periodic ophthalmia or moon-blindness is handed down from parent to offspring, but it is not nearly so common in this country as it once was when the sanitary conditions were not so good; and it may be that some care has been exercised in breeding so as to avoid its propagation. The only appreciable evidence of a predisposition to this unsoundness outside of the existence of the disease is the small or what is called the "pig eye." I knew a sire well that had "pig eyes," but sound ones, and that remained sound throughout his long life. Certainly ten per cent. of his progeny developed moon-blindness. The tendency to stringhalt is undoubtedly transmissible from parent to offspring. Horses with snappy hock action are most likely to develop it. Nowadays it is not feared nearly so much as it formerly was for, if it should develop, a very large percentage of cases are curable by not a very difficult and by no means dangerous operation which consists in the cutting of a tendon and the removal of a small portion of it. A change has taken place in the generally accepted view as to the nature of stringhalt. It was considered a purely nervous malady until it was found that the cutting of a tendon would cure it. Curb, although not as I remember it included in the list of hereditary unsoundnesses, is decidedly hereditary as well as the

predisposition to it. It is not an infrequent occurrence to find foals dropped with curbs, which frequently disappear in a large measure, but there is always some trace of them remaining. It is the rarest possible occurrence to find a broad hock and one with the tendon standing well out behind with any sign of curb. Narrow hocks and those with the point dipped forward towards the body of the joint ; a leg with small circumference immediately below the hock, or what is commonly called tied-in ; those with the back tendon not standing out posterior to the bone at the back and outer part of hock, and in addition to these indications of weakness and tendency to curb, if the joint is crooked or what is called sickle-shaped, the predisposition is much increased. Curb is not so much feared by some breeders as it seldom causes permanent lameness. It is, however, a great eye-sore : it depreciates a horse's value very considerably, and it is liable to cause recurring lameness. Crooked hocks, unduly straight hocks, narrow hocks, small hocks, those bent inwards or outwards, are all of weak formation, and consequently predisposed amongst other unsoundnesses to bone spavin. Even though a horse should happen to have a bone spavin, providing he has a strongly formed hock, I would rather take the chance of breeding to him than one with a sound hock, but of weak formation. So far we have run over briefly most of the defective formations that predispose to serious hereditary unsoundness. We have divided the causes into four heads, the second one of which was insufficient quantity. The old saying : " Size is strength, other things being equal," applies to a horse's extremities. We frequently hear it said that such and such a horse has " plenty of timber under him." By this is meant that the individual in question has sufficient substance in the various structures that make up his legs and feet to give them strength and ability to stand wear and tear. The practical horseman of experience learns that the horse with disproportionately small feet seldom stands much work without going sore from some unsoundness of these organs. So with the slender-pasterned horse ; he is not only subject to strain in that point, but predisposed to ringbone. The horse light under the knee is apt to suffer from strains of the tendons and ligaments in that situation as well as troublesome splint. Proportionately large joints give great wearing ability to the legs. This is well exemplified in the case of hocks with plenty of tissue in them. The sire that transmits small hocks to his offspring has handed down to him one of the most prolific sources of unsoundness in those joints. Defects of for-

mation of these joints are often a cause of trouble as has already been pointed out, but not so much so in my experience as a lack of size. Stating that a horse has plenty of timber under him does not cover all cases, as some horses have plenty of tissue in their front legs and are deficient in their hind ones. In addition to formation and quantity of tissue, quality is of vast importance in influencing the wearing ability of the legs and feet. Parents transmit with great faithfulness to their progeny defects in the quality of the horn of the hoofs. Shelly brittle hoofs are strongly predisposed to crack, developing sand and quarter-cracks on slight provocation, and giving rise to that very troublesome inability of being unable to hold the shoes tightly. Brittle hoofs are not necessarily coarse in fibre. Hoofs of coarse fibre lack the density of structure which generally contributes to toughness. Undue size of foot, low heels and flat soles, with a tendency to be easily bruised, are apt to be associated with a lack of quality in the horn structure. A horse with bone of a spongy character or lacking in density is deficient in quality. Such an individual is predisposed to inflammatory diseases of bone, such as splints, sore shins, ringbone and spavin. The lack of quality in a horse is particularly well shown in the skin of his legs. The tendency to the development of cracked heels, stocked legs, mud fever and grease is very evident on slight provocation. Sires deficient in quality are apt to transmit to their progeny the tendency to what are called soft-legs, in which there is not only the inclination of the skin to swell up from little cause, but windgalls, puffy sheaths of tendons and boggy hocks are easily induced. If then we accept these statements with regard to quality, as it would appear that every practical horseman must, we must admit that coarseness or lack of quality is by no means an unimportant factor in contributing to hereditary predisposition to unsoundness. Temperament is the last of the four heads into which we divided the predisposing causes of hereditary unsoundness. Although it must be admitted that it has an influence we look upon it as the least important of the four. The nervous horse that jumps and gets excited on slight provocation, the anxious horse that is always up in his collar and against the bit are more taxing on the physical mechanism than easier-going horses. We perhaps cannot afford quite to ignore this question of temperament, in selecting sires and dams, but if the legs and feet have sufficient substance and are made up of a good quality of tissue, they will generally stand any taxing that may result from a high strung temperament.

AMERICAN VETERINARY REVIEW.

SEPTEMBER, 1905.

EDITORIAL.

EUROPEAN CHRONICLES.

BRUNOY, FRANCE, July 15, 1905.

TUBERCULOSIS CURED BY A NEW SERUM.—Some time ago I was glancing through one number of the *Progrès Vétérinaire*, when my eyes were attracted by an article headed "Treatment of Bovine Tuberculosis by the Serum Cuguillère," and I read the full history of a positive case of tuberculosis cured. The description of the symptoms left no doubt. Their clinical significance was certain. Tuberculin had confirmed the nature of the trouble and the diagnosis of pulmonary and ganglionary tuberculosis. Then followed the history of the treatment, which consisted at various intervals in subcutaneous injections of the serum prepared by a physician, Dr. Cuguillère. After receiving 400 cubic centimetres of serum from May 31 to July 19, the animal, which improved gradually, in which the glandular enlargements had resumed their normal aspect, in which auscultation had failed to detect the manifestations shown at first, and with respiration almost normal, and finally in which, to confirm the apparent clinical recovery, the test of tuberculin was resorted to and gave a negative result. Was it a true case of recovery? The post-mortem answered affirmatively and the lesions that were found justified the conclusions of the article, viz.: Bovine tuberculosis recognized clinically and scientifically has been cured with the Serum Cuguillère. The recovery has been established scientifically by the tuberculin and macroscopically by autopsy.

* * *
A month later another article from the same author on the same question—a case of generalized tuberculosis. The animal

was also put under the same treatment, and received over 500 cubic centimetres of the serum, when for private reasons the cow was condemned to be destroyed. However, before being killed, she was submitted to the tuberculin test, with the result that there was absolute absence of general reaction, while the thermic was only of 0.7° . The symptoms of the animal during the last part of the treatment had improved, but not as well as in the first case, and the result of the post-mortem was not so satisfactory. Some of the lesions were not as much improved in aspect as others, which were evidently recovered. We are told that the histological examination of the specimens taken from the two animals will be published later on.

* * *

These two records, well written and published under the signature of a sanitary veterinarian, created quite a sensation, and at a meeting of the Society of Application of Medical Sciences the new treatment was brought up for consideration by the author of the treatment himself, Dr. Cuguillère. The serum is not a secret compound, the Académie of Médecine in Paris knows all about it, and for the ordinary martyr all he needs to know is that the serum is a yellow liquid, with a strong odor of garlic, which gives rise to sharp pain at the point of inoculation when introduced under the skin. It has already done wonders and cured people. After the meeting three cows which had positive tuberculosis, by clinical examination and by tuberculin test, received their first dose of serum—30 cubic centimetres of serum—and from that day will receive one dose every week. On June 5 they were to be examined and killed according to their condition. I have not read of the results.

* * *

VALLÉE'S PREVENTIVE INOCULATIONS.—But to come back to the undoubtedly more important and practical part of the tuberculous problem, the prevention of the disease, what about the test which has been carried on by the Société Médecine Vétérinaire Pratique and of which I have already spoken in preceding chronicles?

The second vaccination took place on March 12 (that was three months exactly after the first), in the presence of many veterinarians and of others interested. It consisted also in the injection of a vaccinal emulsion in the left jugular, the dose, however, being four times as high as the first. After the operation Prof. Vallée held a conference, where among lots of interesting facts relating to tuberculosis in general and its prevention, I read the following points: "The chances of success in our experiments are good. The animals that have received the first inoculation are presenting the best aspect. Their condition is excellent, they have grown in fair proportion to the rather unfavorable conditions under which they are kept. Not one has a cough; in none can a sign of tuberculosis be detected. One died accidentally without presenting any tubercular lesion. Of the twenty that remained and which were tuberculinized in February, four at that time had a characteristic reaction to tuberculin. There is nothing in this to make us feel anxious or to surprise us; as the bacilli inoculated in the first vaccination not having been resorbed without giving rise to the formation of microscopic lesions, these were not yet healed and what remained was sufficient to promote tuberculin reaction. There is no doubt that all the animals would have reacted also had the test been applied nearer the time of the first vaccination."

* * *

The last stage but one of the experiment—that is, the stage of control—took place on June 15. This had been planned out by the Commission, and it was decided that a number of animals, among the twenty that remained, should be submitted to various modes of infection (subcutaneous and intravenous injections), while others would be exposed to infection by cohabitation with animals affected and carrying open lesions. Indeed, on that day, June 15, the Commission and many invited being present, the plan was carried out. Seven vaccinated animals and seven healthy témoins received an intravenous injection of a tested well-known culture; seven vaccinated and seven healthy had one subcutaneous; two vaccinated and two witnesses were

placed in a stable by diseased animals, and the four last are to be kept to be tested at various epochs, so as to determine the length of duration of the immunity.

Can any conclusion be arrived at so far? No, says Prof. Vallée, and repeating almost his own words of the last conference he held, he says, "everythiug looks favorable. Truly one of the subjects has reacted since the second vaccination—it has not received the injection of infected culture; it would have been useless, and it is not impossible for this reaction to subside and disappear. By the post-mortem when it is killed the effects of the vaccination will be found out. But at any rate the process of vaccination is perfectly harmless."

* * *

When is the result likely to be known? Towards the end of July or beginning of August something will be known. It is certain that the twenty subjects which have been inoculated or exposed will manifest some symptoms which will leave little doubt as to their condition, while, on the contrary, we must hope that the twenty subjects which were vaccinated previous to their being infected, will remain in the same good condition as they were on June 15.

I shall witness the post-mortem, and will in my next chronicle, I hope, give my readers the results.

The experiment above alluded to, however, relates to the question of the value of the vaccination of von Behring. But it may be remembered that Prof. Lignières had also demanded that a mode of vaccination of his should be tried at the same time. The Commission consented. I have so far little to say about it, as the results seem to be rather unfavorable to this mode of vaccination.

* * *

Some of our friends may fancy that I have dwelt on that experiment rather lengthily. If it is the impression, I regret it. But if one would have seen this handsome herd of forty young cattle, heifers and bulls, of several kinds of breeds, which for many months have been watched and carefully followed with the

greatest care so as to settle one of the most important questions of the day in veterinary science, and realizing the execution of an experiment carried on with all possible precautions to avoid denial or discussion on the result, the first large experiment of control after all, certainly I could not say less than I have done, and if I am blamed for it I am glad, however, that the remarks improperly applied to my friend Prof. Leonard Pearson by Dr. Siebert cannot be repeated. Dr. Siebert, who, I believe, is one of von Behring's assistants, wrote: "After bovovaccine of Behring has been tried scientifically in the most extensive manner and introduced in agricultural practice by the summities of veterinary art with successes promising the greatest expectations, it must seem presumptuous for Pearson in America to advance detailed divulgations, and with all that speak of the superiority of his (Pearson's) so-called method, when it seems that the existence of bovovaccine is known to him only by what he has read." We know differently. Dr. Pearson, I am sure, has seen the trials of bovovaccine in Germany, and if he does not believe in it, there are many Germans like him.

* * *

AN HISTORICAL AUTOPSY.—Leaving the subject of tuberculosis aside for a moment, I must tell of a post-mortem whose lesions I had an opportunity to examine at the Société Centrale de Médecine Vétérinaire of Paris, where they were exhibited. The history of the case is probably known to many of our readers. One day, during the visit that Alphonse XIII, King of Spain, made to Paris, a bomb was thrown on his passing the Rivoli Street, killing one horse and wounding a number of persons. The horse belonged to an officer of Cuirassiers, who commanded the escort of the King. Of course, all the details were made public and do not belong here. The horse killed on the spot was sent to Alfort, where the post-mortem was made by no less officials than the Director of the school himself, M. Barrier, and Professor Petit. The report made by those gentlemen reads as follows:

Skin and natural openings:—A circular cutaneous opening

some 18 millimetres in diameter on the posterior border of the left olecranon muscles—on a level with the tuberosity of the acromion spine, superficial contused wound; one also on the superior part of the neck; some cutaneous abrasions on the head; blood escaping from the mouth and nostrils, upper lip cut;

Extrathoracic lesions on the left side after removal of the left leg:—Under the circular cutaneous opening extensive bloody infiltration and a wide torn space, indicating the course of the wounding body; between the shoulder, the pectoral muscles and the left thoracic wall cellular tissue contains an enormous infiltration of blood; between the fifth and sixth left ribs, costal muscles and pleura are torn and posterior border of the fifth rib scratched with the projectile;

Lesions of the thoracic cavity:—After removing the left costal wall it is found that the left pleural sac is filled with an enormous clot of blood, extending from the first rib to the diaphragm. This clot has surrounded the left lung, which is pressed upon and pushed in the right pleural sac in tearing through the posterior mediastinum. The left pulmonary lobe, on a level with the cardiac notch, is pierced through and through by a large haemorrhagic tear. The pericardium is also torn near its base and its cavity filled with blood. The trunk of the pulmonary artery is pierced through and through and this lesion has given rise to the large intrathoracic and intrapericardial haemorrhage. The right pulmonary lobe offers the same lesion as the left, and finally the right thoracic wall is identically injured as the left—perforation between the fifth and sixth ribs, scratching off of the posterior border of the fifth.

Right extrathoracic lesions with right fore-leg taken off:—Exact repetition of those found on the left side and in the thickness of the muscle, large extensor of the forearm, the projectile, cause of these fatal lesions, viz.: a bolt of 20 millimetres in diameter which was used to cork the bomb after its being loaded. There were no other lesions.

* * *

ACKNOWLEDGEMENTS AND REVIEWS.—I have been favored

of late with a number of books and communications, coming as they have almost from the four cardinal points of the United States—from Louisiana by the arrival of the *Louisiana Planter*, with the articles on molasses feeding by our friend Dr. Dalrymple; then from Maine with the *Horse Breeder*, where Dr. G. H. Bailey always defended his theory against the trotting of a mile in two minutes. [Poor fellow: it was his last to me; I learned of his death a few days after.] From the East and from the West I had announcements of colleges [unfortunately they show little change from their last year's aspect], but that of the New York State Veterinary College is interesting. I also had from Chicago the first volume of "Veterinary Surgery," by Dr. Louis A. Merillat, which is published by A. Eger, of Chicago. In this volume "Animal Dentistry and Diseases of the Mouth" are treated. A nice work of 250 pages, well illustrated by 160 good plates, which, if I am not mistaken, is the first book treating entirely of the subject, and which on that account will prove of great interest to all practitioners. The general manipulations to obtain the dexterity that American horse dentists alone possess, are very correct. Volume II and III will be anxiously looked for.

* * *

A more important book I also had lately—"Thérapeutique Vétérinaire Appliquée"—otherwise "Special or Applied Veterinary Therapeutics," by Mr. H. J. Gobert. This is again an addition to the Cadeac Encyclopœdia, but forms a complement to the one on general therapeutics alluded to in a previous chronicle. The arrangements of the drugs, adopted by the author, differ from those generally admitted; he has grouped them according to the changes, to the modifications that they produce in the different functions: modifying agents of the digestive apparatus, of nutrition, of respiration, circulation, nervous system, urinary apparatus, genital system, milk secretion and finally modifying agents of all the tissues. Exceptionally, in the first chapter, the study is found of those agents which act on the cause itself of the disease, when this cause is external to the or-

ganism: such as the antiseptics and the antiparasitics. This plan of the author makes his work essentially practical—it is a therapeutic of symptoms well made out. For each drug the physiological effects are given, the indications being derived from them, the doses, modes of administration, and when treating of toxic substance, the indications for using antidotes. The book is like the preceding ones issued by the house of J. B. Bailliere, rue Hautefeuille, Paris. Cost 5 fs.—one dollar. Whoever reads French will be pleased with the work. A. L.

A GRAND MEETING OF THE A. V. M. A.

One of the most potent evidences of professional prosperity and progressiveness is the interest taken in the associations for advancement in knowledge, and when the meetings are sparsely attended and interest lagging they are as certain indications that the condition of that profession are unstable and unsatisfactory. If this line of reasoning is accepted as reliable law, those having the welfare of the profession in this country at heart must have a complacent feeling as they read the story of the Cleveland meeting of the American Veterinary Medical Association, for it was far and away the most valuable as well as the largest gathering of veterinarians ever brought together on the American Continent. This estimate of the importance of the late meeting may sound familiar to REVIEW readers, as the same expressions have been used to describe each convention for a number of years in succession; but we have no apologies to offer for our seeming lack of descriptive English, for the statements have always been exactly true to the facts, and we sincerely trust that we may be permitted to indulge in the same precious tautology next year, and the next, and the next.

Study the abridged report of that meeting in this journal, and supplement it by the official record soon to be published in book form; look at it from every viewpoint, and say if it was not a great gathering of the profession—one to reflect credit upon any scientific organization, and to make one feel a thrill of pride to be counted as one of its number.

The papers read embraced every phase of professional endeavor, from the most advanced thought and research in pestilential diseases to the every-day problems in surgery and practice; and in a practical sense from the exhibition of pathological specimens of infective diseases to the demonstration of simple surgical procedures.

The educational problem, which has been pressing with such force for action that would tend to uniformity in the product of the colleges, received a real impetus at Cleveland in the reorganization of the Association of Faculties and Examining Boards of North America. The A. V. M. A. authorized its President to appoint three delegate-members to the Faculties Association, to discuss and harmonize the uneven balance in the quality of the work being done by the schools, and to report back to the Association the minimum requirement which the schools agree to conform to. It will then become the business of the Association to know whether they violate their agreement or not. Of course, there are many details to be considered, and it is not known how great an advance step can be taken by the schools having the lowest grade; but the plan offers the most promising results of any that have been suggested.

Failure to attend is not compensated for by the efforts of this journal to give a faithful account of all that transpired; but we hope to publish as many of the papers as we are able to obtain.

We congratulate the Association upon its grand meeting, and the profession upon having such an Association to represent it.

THE NEW YORK STATE MEETING.

The annual meeting of this society has earned a national reputation for the excellence of its clinics, which are acknowledged to have set the high standard that characterizes the surgical clinics now universally in vogue. It is but a few years since this educational feature of veterinary meetings was introduced, yet its popularity has increased each year until now a meeting with the clinic omitted would be shorn of more than

half of its value and interest. We are not certain just where the first one was inaugurated, but we do know that the New York State Society has brought it to its highest estate, and in recent years its meetings are attended by veterinarians from many States, attracted chiefly by the reputation it has acquired along this line. Here operations are demonstrated with every detail of technique, and with every regard for the principles and practice of the highest conception of antisepsy and anaesthesia, and it is doing as much benefit to practicing veterinarians as a post-graduate course in a good school.

This year the officers of this Society can be relied upon to maintain all the prestige of the past, and to take a step well in advance. Not only will the surgical feature be thoroughly upheld, but the literary programme is most excellent, and we refer our readers to the regular department of "Society Meetings," where this section is fully detailed, and which will be found to embrace every line of thought—from the intricate problems of State medicine to the reports of simple cases met with in daily practice.

If you were in attendance at Cleveland, or were forced to remain away, you cannot afford to be absent from Ithaca, on Sept. 12 to 14.

DRS. MERILLAT AGAIN WITH THE "REVIEW."

We are pleased to announce that Drs. Louis A. and Edward Merillat, of Chicago, have again assumed direction of a department of the REVIEW devoted to surgery. A few years ago these well-known veterinarians edited a pretentious series of surgical papers for this journal, which were greatly appreciated by the profession. Their present undertaking will aim to supply our readers more with the "news" of the surgical world, grouping it in paragraphs under the broad heading of "Surgical Items." As the senior compiler is engaged in the preparation of a text-book upon the subject, he must necessarily keep abreast of all that is transpiring, by extensive reading and otherwise; and thus our readers are to have the advantage of his great opportunities.

ORIGINAL ARTICLES.

THE ARTIFICIAL IMMUNIZATION OF CATTLE AGAINST TUBERCULOSIS.

BY LEONARD PEARSON AND S. H. GILLILAND.

(*From the Laboratory of the State Live Stock Sanitary Board of Pennsylvania*)

A Paper presented to the 42d Annual Meeting of the American Veterinary Medical Association, at Cleveland, Ohio, Aug. 15-18, 1905.

Efforts to produce artificial immunity against tuberculosis have been conducted for a number of years and along many lines. In 1890, Robert Koch announced the discovery of tuberculin. It was claimed at that time that by the use of tuberculin resistance to tuberculosis could be increased in such a way as to assist in withstanding infection, and also that some infections already established might under the use of tuberculin be overcome. But extensive experimentation has shown that these effects are not sufficiently uniform, lasting or powerful to be of distinct practical value.

Following this pioneer work of Koch came the work of many investigators with modified tuberculins and with extracts from tubercle bacilli made in a variety of ways. Repeated experiments with all these substances have shown that it has not been possible by their use to render animals immune to tuberculosis permanently, or to a practical degree. Experiments have been made by several investigators to test the immunizing value of dead tubercle bacilli and of bacillary pulp. The results have been about the same as have followed the use of extracts from tubercle bacilli.

It became evident years ago that immunity against tuberculosis, to be of value, must confer protection against the organism of tuberculosis as well as against its toxins. There must be bacterial as well as toxic immunity. Efforts to immunize animals against living and virulent tubercle bacilli by inoculating them with living tubercle bacilli of low virulence were made as early as 1891 by Granchez and Ledoux-Lebard. In 1892 and

1893 Trudeau* found that by inoculating rabbits subcutaneously with living cultures of avian tubercle bacilli, he was able to increase their resistance to infection from mammalian tubercle bacilli of a culture known to be virulent for rabbits. De Schweinitz† in 1894 discovered that it was possible to very greatly increase the resistance of guinea-pigs to inoculations of tuberculosis by inoculating them with attenuated tubercle bacilli of human origin; the process of attenuation consisting in prolonged cultivation (twenty generations) on glycerin beef broth of acid reaction. Tubercle bacilli of human origin grown in this way lost their virulence for guinea-pigs, but guinea-pigs inoculated with this non-virulent culture developed so much resistance to tuberculosis, that when they were afterwards inoculated with tuberculous tissue from a cow they remained healthy, while other guinea-pigs inoculated with the same material from the cow died of tuberculosis in seven weeks. DeSchweinitz injected very large quantities of human tubercle bacilli into cattle subcutaneously, intravenously and intraperitoneally. He found that by gradually increasing the dosage enormous quantities could be tolerated without injury. He administered as much as 500 c.c. of a heavy suspension of tubercle bacilli at one time.

McFadyean‡ in 1901 and 1902 reported that he had found that the resistance of cattle to tuberculosis may be very greatly increased by the use of successive inoculations with tuberculous material or tubercle cultures of low virulence. In a paper of McFadyean's entitled "Further Experiments Regarding the Immunization of Cattle Against Tuberculosis,"§ the author states this conclusion:

"It appears to be justifiable to conclude that, whatever may have been the degree of natural immunity possessed by these three experimental animals, it was much increased by the suc-

* *New York Medical Journal*. July 23, 1893.

† *Medical News*, New York, December 8, 1894.

‡ *Journal of Comparative Pathology and Therapeutics*, June, 1901, and March, 1902.

§ *Journal of Comparative Pathology and Therapeutics*, March, 1902.

cessive intravenous inoculations to which they were subjected. The immunity was not absolute, but it may be doubted whether a degree of resistance that would merit that term is obtainable by any method in cattle."

Von Behring announced in December in 1901 that he was engaged in studying the immunization of cattle against tuberculosis, and he has since issued several reports upon his work. Von Behring has made a very large number of experiments in this field; he has endeavored to produce immunity by the use of tuberculins, by the use of other tuberculosis toxins, by anti-toxins, by the use of dead tubercle bacilli, of tubercle bacilli weakened by chemical agents and by the use of tubercle cultures of low virulence. A method for the vaccination of cattle against tuberculosis has been formulated by von Behring, and it is based on the use of tubercle bacilli of human origin that are non virulent for cattle. In making this "vaccine" the tubercle bacilli are dried and ground to a powder. The vaccine material is sent out in this dried state. It is necessary to make a suspension of it in normal salt solution, whereupon it may be administered by intravenous injection. A number of investigators as Lorenz, Schlegel, Eber and Hutyra have tested the resistance of cattle treated by von Behring or according to von Behring's method. It has been shown that the resistance of these animals to tuberculosis has, in most cases, been increased and sometimes considerably so.

It is to be observed, however, that many of the cattle reported upon by the above authors, were not vaccinated according to the method that von Behring now recommends, and as Eber says* " * * * The tuberculin test is not a reliable means for determining the freedom of tuberculosis of an animal that has been treated with mild bovine or human tubercle bacilli unless a long time (generally more than a half year) has elapsed since the last administration of infectious material. * * * Since neither of the treated cattle was vaccinated by the two vaccination methods with attenuated human tubercle bacilli according

* *Zeitschrift fur Thiermedizin*, Band IX Heft 3-4, 1905.

to the method now recommended by von Behring, the conclusions that are reached as a result of my investigations have only a relative bearing on an estimation of the value of the method now recommended by von Behring.

"The results of the investigations show, however, that it is possible to confer upon cattle by treating them with attenuated bovine or human tubercle bacilli a certain degree of resistance to artificial tuberculosis infection.

"Whether this resistance, as produced by the two-vaccination method, with attenuated human tubercle bacilli, that is now in use, furnishes protection against natural infection can only be determined by years of careful observation and the greatest possible number of animals immunized in this way and controls at the time of slaughter."

Hutyra* has reported some work conducted by him in 1903 and 1904 at the Royal Veterinary College of Hungary wherein he tested the immunity of calves vaccinated according to von Behring's method with material furnished by von Behring and also with material prepared from cultures made by himself. Hutyra tested the resistance of his vaccinated animals by inoculating them with virulent bovine tubercle bacilli and their resistance was compared to that of unvaccinated animals. He found that nearly all of the vaccinated animals had more resistance than the unvaccinated animals. One animal treated with von Behring's vaccine (No. 3) appeared to have received no immunity as a result of vaccination. Hutyra's own vaccine material from different sources appeared to give a noticeably higher degree of immunity than that obtained from von Behring's.

Recently, a large number of cattle, amounting to several thousand, have been vaccinated after the von Behring method in Germany, Austria and Hungary. The process does not appear to be free from danger in every instance, as is shown by the reports of Marks, Casper and others. It is as yet impossible to draw any conclusions whatever as to the efficacy of vaccinations

**Berträge zur Experimentellen Therapie*, Heft 9, 1905.

from the results of this great number of vaccinations of cattle on farms. The only conclusion at which one may fairly arrive is that vaccination appears, *in most cases*, to be unattended by danger to the vaccinated animals. Whether immunity is conferred and, if so, whether it is sufficiently powerful or lasting for practical purposes is not yet shown by the practical application of von Behring's method. Of the animals that have been vaccinated on farms and afterwards exposed to infection a number have been slaughtered and some have been found to be afflicted with tuberculosis, others have been found to be free from tuberculosis. The presence of lesions of tuberculosis is taken by some of von Behring's observers to mean that the animal was tubercular before it was vaccinated. Of course, this may be true. But it must be remembered that the absence of lesions of tuberculosis in vaccinated animals cannot fairly be taken to signify the existence of a serviceable degree of immunity unless it is shown that the conditions under which these animals were kept were such as to lead to the infection of a considerable proportion of unvaccinated animals. And this evidence is in most cases lacking.

Klimmer has carried out some very useful investigations upon the immunization of cattle against tuberculosis at the Royal Veterinary College at Dresden.* Klimmer protests against sending out vaccine material in the dry, powdered state on account of the great danger to the operator who attempts, in the field, to prepare this material for use. Klimmer's practice is to prepare suspensions of tubercle bacilli in the laboratory, just as has been done for a number of years at the laboratory of the Pennsylvania State Live Stock Sanitary Board.

The vaccine material that has been prepared in Dresden appears to be harmless to the vaccinated animals, and indications thus far are that it confers a serviceable degree of immunity, but it is not yet possible to draw final conclusions from this work for the reason that the vaccinated animals are still living and it is impossible to determine positively whether they are

**Berliner Tierärztliche Wochenschrift*, July 5, 1905.

free from tuberculosis. Klimmer proposes the use of a vaccine material made of mammalian tubercle bacilli that have been rendered less virulent by passage through a cold blooded animal. The advantage from such a culture would lie in the total absence of danger to the operator.

Work upon the vaccination of cattle against tuberculosis at the laboratory of the State Live Stock Sanitary Board of Pennsylvania commenced in the year 1900. It has, therefore, been underway for about five years. We were able to show three years ago* that it was possible to increase the resistance of animals to tuberculosis to a very high degree by treating them with several intravenous inoculations of non-virulent tubercle bacilli of human type. Two cattle thus treated were inoculated intratracheally with a suspension of bovine tubercle bacilli, and both of them wholly resisted the inoculation. The only lesions in either of these animals was a slight thickening upon the wall of the trachea at the place where the hypodermic needle was inserted. Two unvaccinated animals, inoculated at the same time, in the same way, with the same quantity of bovine tubercle bacilli, from the same culture, became extensively infected with tuberculosis, showing the lesions on the mucous membrane of the trachea and bronchi, in the lungs, and in the bronchial, mediastinal and postpharyngeal lymphatic glands.

The immunity that was obtained in the case of these two animals resulted from the administration of seven intravenous injections of vaccine material during a period of ten weeks. The doses of tubercle bacilli ranged from 13 to 26 mg. While this experiment, and other similar experiments, were sufficient to lead us to the conclusion that animals may be rendered immune to tuberculosis, it was at the same time evident that a process depending upon the application of vaccine material seven different times, would be of comparatively small value in general practice. Therefore, we set ourselves to the study of the effects of other methods of vaccination and to the development of a simple and effective method. During the past three years

* *Philadelphia Medical Journal*, November 29, 1902.

we have attempted to determine the immunizing effects of several strains of tubercle bacilli. We have administered vaccines in different doses, at long and short intervals and with varying numbers of doses.

For these experiments we have been supplied by the State Live Stock Sanitary Board with a large number of animals. For two years we have had the use of a farm where about one hundred cattle have been kept for experimental purposes. We have also had the use of stables at the Veterinary Department of the University of Pennsylvania, where from twenty to twenty-five cattle have been kept, together with numerous goats and small laboratory animals. Through the use of the farm, we have been enabled to keep a considerable number of cattle under practical farm conditions.

During the time that they have been under observation in our experiments, the resistance to tuberculosis of vaccinated animals has been tested through exposure to natural infection and by inoculation. When vaccinated animals have been exposed to infection and when they have been inoculated, unvaccinated, control animals have been equally exposed or inoculated. We regard this use of controls of the highest importance, because it is only in this way that a definite standard for comparison can be provided in order to measure the extent of resistance to a given amount of exposure. Moreover, it is only by the use of controls that one can ascertain whether exposure under natural conditions has been sufficient to lead to the infection of unvaccinated animals.

It is not enough to associate vaccinated cattle with tubercular cattle and then to conclude that the vaccinated cattle were immune because, when they were killed, they did not show lesions of tuberculosis. It might readily happen that the exposure was not sufficient to lead to the infection of unvaccinated cattle; but if, upon equal exposure, we find that the unvaccinated cattle are tuberculous, and the vaccinated cattle are free from tuberculosis, then we may safely and justly conclude that the vaccinated cattle received immunity from their vaccination.

Our proof is based upon such clear evidence as this, frequently repeated.

Our experiments have shown that different strains of tubercle bacilli have different immunizing values. Avian tubercle bacilli may produce an intoxication resulting in great emaciation, but avian cultures do not appear to confer upon animals so much immunity as results from the use of mammalian cultures that are non virulent for the animals upon which they are used. In order to produce artificial immunity in mammals it appears to be necessary to vaccinate with an attenuated mammalian culture.

We have not found any advantage either in respect to the degree of immunity or economy of time in the use of several vaccines made from cultures of different and progressive degrees of virulence.

The amount of immunity bears a rather definite proportion to the number of vaccinations and the amount of vaccine material used, provided however, that the animal be not "over vaccinated;" that is, that the vaccinations are not too close to one another, and that an excessive amount of vaccine is not administered. By over vaccination the resistance of an animal to tuberculosis may be reduced to a point below normal, or a fatal toxæmia may be caused.

Experiments have been made wherein animals vaccinated with different doses and different numbers of doses have been inoculated at the same time, and in the same way. While the resistance of all of the vaccinated animals to the inoculation has been much greater than the resistance of unvaccinated animals, it has been possible to observe a marked difference between animals vaccinated in different ways. For example, an animal vaccinated five times has more resistance than an animal vaccinated four times, and other conditions being equal, an animal vaccinated four times has more resistance than an animal vaccinated three times.

From the practical standpoint, it is more important to ascertain the amount of vaccination that is necessary to protect ani-

mals under customary conditions of exposure and the shortest possible time during which a sufficient degree of immunity may be conferred, that it is to determine how great a degree of immunity may be produced.

Since it has been necessary to try a great number of different methods of vaccination, and since the time required for an experiment of this sort is much greater than is usual in experiments conducted through laboratories of hygiene, it has been difficult and time consuming to accumulate evidence upon which to base a general method for the vaccination of cattle.

It is already clearly evident that different degrees of immunity, and serviceable degrees of immunity, may be obtained at will. Under natural conditions, animals differ in respect to their inherited or acquired resistance to tuberculosis. Conditions of exposure differ, being very much greater upon some farms and in some herds than in others. Therefore, it seems to be reasonable to conclude that animals will require more artificial immunity to tuberculosis under some conditions than under others. The case is similar to the protection of cattle against anthrax by vaccination. In Pennsylvania we have found by experience, extending over a series of years, that the immunity conferred by vaccinating with the first and second vaccine of Pasteur usually is sufficient. On a few farms, however, the exposure appears to be more intense and it is found that on such farms it is necessary to use the third vaccine of Pasteur. Experience may show that it will be necessary to vaccinate different breeds of animals, and animals kept under different conditions, in slightly different ways.

The amount of immunity that is conferred by three vaccinations is rather high, and will probably be sufficient in most cases. Indeed, two vaccinations may supply a sufficient amount of immunity under some conditions. Under other conditions it may be necessary to vaccinate four times.

The subject of the duration of immunity is very important, and is one that can be solved only by observations upon a large series of vaccinated cattle, some of which may be killed and ex-

amined post-mortem from time to time during a term of years. Of course it is necessary that animals kept for this purpose shall constantly be exposed to infection and unvaccinated controls must be similarly exposed, and the post-mortem results must show that the amount of exposure was sufficient to cause the infection of the unvaccinated animals.

Our own experiments indicate that artificial immunity may endure at least two years, and there is every reason to expect that additional experiments will show that immunity will be of longer duration than this. Perhaps it may last throughout the entire life of the animal; but conclusions on this point are entirely premature.

The effect of tuberculosis vaccination upon cattle already infected with tuberculosis has also received our attention*; it has been found that intravenous injections of tubercle bacilli of human type, non virulent for cattle, have a very marked influence not only in restraining the progress of existing lesions but also in causing them to become encapsulated and to recede. In other words, such treatment appears to have a marked curative effect on some tuberculous animals. But this statement should be accompanied by a note of warning. We do not for a moment wish to imply that it is practicable, or even possible, at this time, to cure tuberculous cattle. The observations to be made in this direction are regarded by us as of importance chiefly as tending to throw additional light on the subject of immunity. It was shown that the treatment given had the same immunizing effect upon infected animals as upon healthy animals. The effect of the immunization in these cases was, first, to prevent the further dissemination of infection and, second, to cause the encapsulation and delimitation of the existing lesions.

It is probable that this method of treatment may prove to be of value with relation to young animals, or animals known to be but recently infected with tuberculosis. Such treatment will always have to be carried out with the most extreme care and

* University of Pennsylvania Medical Bulletin, April, 1905. AMERICAN VETERINARY REVIEW, 1905.

under conditions that can be very fully controlled. It is not to be recommended for general practice.

As to the application of vaccination against tuberculosis: vaccination, properly applied, is effective and we believe that it will prove to be of very great practical value. It is not possible on most American farms to establish a separate herd of infected cattle and to keep the infected cattle as separate and distinct from the uninfected cattle as is necessary, if tuberculosis is to be treated according to the Bang system. The alternative, if tuberculosis is to be eradicated, is to destroy all of the animals that react to the tuberculin test. The latter plan involves a great deal of waste and loss, which, heretofore, has been unavoidable and which has been amply justified because it has been less than that resulting from the continuation of the infection in the herd.

But it is important that a better, a less expensive, and, if possible, a more effective method shall be devised. It appears to be highly probable that vaccination may supply this method. It is admittedly impossible to test with tuberculin all of the tuberculous herds of a state. Therefore, it is not possible to discover and to either destroy or sequester all of the cattle that may be distributors of tuberculosis. Herds freed from tuberculosis by the use of the tuberculin test are always exposed to re-infection and must be guarded by the double testing of all recruits and by systematic re-inspections of the herd. All of this may be, and is, carried through successfully, and should be practiced to a much greater extent than it is, unless an equally effective and cheaper method can be devised.

It will be a great step in advance to be able not only to discover that an animal is free from tuberculosis, but also to render that animal permanently immune to infection. It will be a great advantage to be able so to treat young cattle that they may resist tuberculosis even though they are continually exposed. The advantage to the breeder, of being able, not only, to grow a herd free from tuberculosis, but immune to tuberculosis, will be very great. We believe that all of this may be looked for-

ward to ; but until more experiments and observations are completed, vaccination should be applied only under such conditions as will permit exact observations to be made, and each vaccination must, for the present, be regarded as a scientific experiment.

THE HORSE'S FAILING.—Hans, the ruralist, was in search of a horse. "I've got the very thing you want," said Bill Lennox, the stableman, "a thorough-going road horse. Five years old, sound as a quail, \$175 cash down, and he goes ten miles without stopping." Hans threw his hands skyward. "Not for me," he said, "not for me. I wouldn't gif you 5 cents for him. I live eight miles out in de country, und I'd haf to walk back two miles."—(*Norman, Oklahoma, Voice.*)

YEAST TREATMENT FOR BARRENNESS.—Dr. A. S. Alexander, Chief of the Veterinary Department of Wisconsin Agricultural College, recommends a trial of the following formula for yeast mixture, to be used in case of barrenness of cows, sows and mares: Mix an ordinary two-cent cake of yeast to a paste with a little warm water, and allow to stand for twelve hours in a moderately warm place; then stir in one pint of freshly boiled, lukewarm water and allow to stand for eight to twelve hours. Mixture then will be ready for use, and entire quantity should be injected into vagina of animals to be bred. Use the mixture, when period of heat is first detected, and breed when period is about ended. The same treatment is recommended in the case of cows which have aborted.

A NOVEL FEATURE AT A STATE FAIR.—A special exhibit at the Wisconsin State fair will be made by the Wisconsin State Live Stock Sanitary Board. The exhibit will consist of the slaughtering of animals diseased with tuberculosis, indicating how the disease shows itself, how the symptoms can be detected and other valuable information. The exhibit will be in the immediate charge of Dr. H. L. Russell, bacteriologist at the State University, and Dr. E. D. Roberts, State Veterinarian, and they will have a sufficient number of assistants. Dr. Russell will present lectures of popular-scientific character so that the demonstrations will be easily understood by all and the lectures will be accompanied with practical exhibitions, in which the stock shown will be slaughtered and the diseased parts dissected and explained.

A REVIEW AND CRITICISM OF THE EIGHTH DECENTRIAL REVISION OF THE PHARMACOPÉIA OF THE UNITED STATES.

BY E. L. QUITMAN, V. S., CHICAGO, ILL.

Read before the 42d Annual Meeting of the American Veterinary Medical Association at Cleveland, Ohio, August 15-18, 1905.

At last, after a lapse of five years (two years longer than usual) following the meeting of the U. S. P. Convention, the U. S. P. of 1900 has made its appearance, a larger, a better and a more accurate work than any of its predecessors, yet not entirely free from adverse criticism, which, however, is considerably overbalanced by the many commendable changes.

On account of so many radical changes I have assumed that an article of this kind, at this time, will be of more value to the veterinary profession than if I had held to my originally announced subject ("General Remarks on Veterinary Therapeutics") inasmuch as the changes are as important to our fraternity as they are to the medical profession, and it matters not whether you prescribe or furnish medicine from your own pharmacy, it is of the most vital importance that you become conversant with these changes from the U. S. P. of 1890.

In a number of instances you will have to learn entire new names for old favorite drugs, in other cases you will have to learn new doses, especially as applies to tinctures; for in this condition the very commendable attempts to unify the strength of tinctures has been carried out.

It shall be my purpose to give only a very brief review of the U. S. P. of 1900, mentioning only the more important changes as far as they relate to the veterinary profession, with the hope that you will become sufficiently interested to procure for yourselves a copy of this most important work, by doing which you will save yourselves many grievous errors and at the same time encourage a work that has done more than any other single line of work, in bringing order out of chaos. Think for a moment what a chaotic condition of affairs in medicine there

would be if there was no book of this kind to define exactly by what name and of what strength certain preparations of a drug should be—prescription writing would be an impossibility, doses would be entirely arbitrary and each drug known by as many different names as there were manufacturing druggists—writings or conversations on *materia medica* and therapeutics would be almost unintelligible to the practitioners of various parts of the country—one manufacturer would make a certain tincture or fluid extract of one strength, another of another strength, and so on; and, again, the various preparations, extracts, fluid extracts, tinctures, etc., would have a variety of fantastic names instead of well-defined terms and processes of manufacture.

The U. S. P. of 1900 becomes official from Sept. 1, 1905. With these prefatory remarks, I will now proceed with the work in hand :

We first notice that more definiteness has been placed on the standard of purity for the purpose of making a dividing line between medical and commercial products of the same agent; next our attention is called to more thorough alkaloidal assays than heretofore existed, as the new *Pharmacopœia* contains a greater number of alkaloidal strengths of the more active and important vegetable drugs than the previous editions. This is of the utmost importance in medico-legal matters aside from its value in the manufacture of the pharmaceutical preparations and the study of physiological actions and therapeutics; then an average (human) dose is given, this being the first time that such has been done, it is specifically stated, however, that such doses are not obligatory nor is the physician forbidden to exceed them; thus it is seen that they, unlike the other matter of the book, are not so given as "law," but merely as a guide.

A praiseworthy feature was the readoption of the spelling of alkaloids with the final *e*, which serves to distinguish them from glucosides; thus morphine, quinine, etc., will be spelled as heretofore, and not morphin, quinin, etc., as advocated by Gould and other chemical writers.

An attempt is also made to do away with the innumerable synonyms, by omitting them from the text of the book and by adding an appeal to the medical profession and pharmacists to use only the proper Latin or English titles given. This is a feature that we should all join in, as it will do much to avoid confusion in prescribing and dispensing and in literature or conversation relating to drugs.

One of the most, or perhaps *the most important change*, and to which I call your special attention, is to the standardizing of the strengths of tinctures of the potent drugs to *ten per cent.*—most notable of which and important to veterinarians on account of its extensive use in our practice is the tincture of aconite, which is now practically only of 10 per cent. strength instead of 35 per cent. as formerly, thus the dose of the new official tincture will be about three and a half times as much as the former tincture, also tincture of veratrum is now 10 per cent. instead of 40 per cent., thus its dose will have to be increased fourfold; tincture of strophanthus is increased from 5 per cent. to 10 per cent. Thus its dose will have to be cut in two.

The less potent tinctures, with but few exceptions, have been made of a standard of 20 per cent. strength.

Inasmuch as the veterinarian uses mostly of the fluid extracts and but comparatively few of the tinctures, he will be less affected by this change than the practitioner of human medicine. However, considerable caution will have to be shown for some time to come after September 1, 1905, in prescribing, so as to know whether the druggist is dispensing the tinctures of the old or of the new standard—this, of course, will also have to be watched in getting drugs from the wholesale dealer.

These changes will, of course, result in considerable confusion at first and perhaps some serious errors may occur, which I hope will be averted by extensive advertising of the changes. However, they are a change in the right direction, as heretofore the tinctures varied in strength from 1 to 50 per cent. The standard of strength of fluid extracts (100 per cent.) and of the liquid arsenical preparations (1 per cent.) remain as heretofore.

Of the serum products only one was admitted, diphtheria antitoxin, under the official title of "serum antidiphthericum."

Two of the animal products were admitted, namely "glandulæ thyroideæ siccæ" and "glandulæ suprarenales siccæ."

The titles of a number of the old official articles were altered, as stated by the Pharmacopœia, "for the purpose of bringing them into harmony with the principles of nomenclature followed in other parts of the work, or to make them more expressive of the character of the article or preparation which they designate." One of the most important, and I might say unique, among the changes is that of the Latin name for *fluid extracts*. This, as is well known, was formerly designated, for example, as "extractum belladonnæ fluidum," which under the new nomenclature becomes "fluidextractum belladonnæ," or, in other words, the U. S. Pharmacopœia Convention has coined a new word by making one word of what has previous to this time been two words, and I fear they have laid themselves open to criticism by philologists for compounding a word which is half English and half Latin.

I also fear that it will cause errors by pharmacists in reading prescriptions, as it will be by lazy prescribers abbreviated into "Fe.", which if hastily or poorly written may be read as "Tr." (for tincture) and *vice versa* a poorly written abbreviation for tincture (Tr.) may be read for the abbreviation Fe. for fluid extracts. Their only excuse is that it renders the indexing of drugs easier, clearly separating the fluid extracts from the extracts in an alphabetical manner.

Among other important changes of drug nomenclature may be mentioned the changing of acidum arsenosum to arseni trioxidum; acidum chromicum to chromii trioxidum; acidum carbolicum to phenol; chloral to chloralum hydratum; amyl nitris to amylyis nitris; apomorphinæ hydrochloras to apomorphinæ hydrochloridum; cocaineæ hydrochloras to cocaineæ hydrochloridum; ferri oxidum hydratum to ferri hydroxidum; glyceritum acidi carbolici to glyceritum phenolis; all salts ending in hydrochloras become hydrochloridum; likewise hydrobromates

become hydrobromides; liquor potassæ becomes liquor potassii hydroxidi; liquor sodae becomes liquor sodae hydroxidi. Naphthalinum is changed in spelling to naphthalenum; potassii bichromas is transformed into potassii dichromas; resorcinum becomes resorcinol; salol is phenylis salicylas; sodii hyposulphis to sodii thiosulphus; spiritus glonoini to spiritus glycerylis nitritatis; the above and other similar changes in nomenclature are changed for "chemical" reasons, the new names being correct from a chemical standpoint.

Aloe barbadensis and aloe socotrina will be considered equal under the official title of "aloe"; colchici radix is changed to colchici cormus; veratrum viride to simple "veratrum." The above mentioned are but a few of one hundred and thirty-nine changes and are deemed sufficient to cause the profession to look up the matter more thoroughly by reference to the original work.

One hundred and seventeen (117) new drugs have been added, among the better known of which are acetonum, acidum camphoricum, acidum hydriodicum dilutum, aconitina, adeps lauæ, antipyrina, bismuthi subgallas and subsalicylas, codeinæ phosphas and sulphas, colchicina, cresol (commonly known as cresylic acid), elixir ferri, quininæ et strychninæ phosphatum and a glycerite of the same of four times the strength (the syrup has been and is still official), acetic acid fluid extract of lobelia, fluid extractum staphisagriae, fluid extractum stramonii, guaiacol, guaiacolis carbonas, iodolum, liquor antisепticus (similar to listerine), liquor cresolis compositus (similar to creolin), liquor formaldehydi, oleatum atropinæ (2 per cent.), cocaineæ (5 per cent.), and quininæ (25 per cent.), pelletierinæ tannas, strophanthinum, syrupus hypophosphitum compositus, unguentum hydrargyri dilutum, zinci phenolsulphonas (formerly known as zinc sulphocarbolate), etc.

One hundred and fifty-one (151) articles heretofore official have been dropped; among which are twenty-five extracts, several of the drugs or preparations are of undoubted value, more so than some remaining official; for instance, tincture arnica root is dismissed; this is more active internally than the tinct-

ure of the flowers, which remains official ; elixir, oil and spirit of phosphorus, carbonate of lead, tincture of bryonia and too many others to enumerate here. It might be well to add that petrolatum molle and petrolatum spissum have been dropped ; one word ("petrolatum") is now used to embrace both.

RECAPITULATION.

Articles official in 1890, 994 ; articles official in 1900, 958 —decrease 36 ; articles dismissed in 1900, 151 ; articles added in 1900, 117 ; names changed 139.

It can readily be noticed from the brief outline of the changes noted above that the practitioner of medicine, the dispensing druggist and the manufacturing druggist, all will be materially affected in various ways by the changes, the most dangerous of all is the change of strength of tr. aconite. Think what it will mean to the patient, either human or veterinary, if the prescriber writes for tr. aconite in dosage of the new strength (10 per cent.) and a dull brained druggist fills the prescription with some old (35 per cent.) tincture.

In my opinion all of the tinctures had best be dropped from the Pharmacopœia ; they are a useless addition to the long list of medicines, their doses do not compare with the crude drug in a direct ratio, as does the fluid extracts ; and, again, their action is often altered by the large amount of alcohol used as a menstruum and occasionally a dangerous concentration occurs due to evaporation of the alcoholic solvent, thus concentrating a former tincture to nearly a fluid extract strength.

With the fluid extracts there are no such objections, they are more permanent, not sufficient alcohol to alter the physiological actions of the drug used, strength in uniform ratio of drug used, dosage is easily remembered and in every way they are superior to tinctures.

Let us hope that the next or ninth decennial revision of the U. S. P. will drop out the tinctures for the good of all concerned.

If the above random notes have served the purpose of attracting your attention towards matters new in the U. S. P. of 1900, the writer will feel himself amply repaid.

AZOTURIA.

BY I. A. RUBY, V. S., PLYMOUTH, OHIO.

Read before the Ohio State Veterinary Medical Association, January 18, 1905.

This mysterious and occult disease was not chosen as a subject, with the object in view of enlightening the veterinarians of this Association. It is only hoped that something may be said which will provoke a discussion that will benefit us all; however, this paper has been prepared on the presumption that no questions shall be propounded to the writer, and I hope the President will defend your servant by indorsing the presumption. The purpose is to depart to a certain degree from the threadbare doctrines found in the old text books, and think a little for ourselves. The writer has been accused of ignoring text books and "cut and dried" formulæ on certain occasions, but we must not lose sight of them. They are the snub-posts around which we occasionally throw our coil of rope to hold us to our moorings. It is pleasant at times to deviate from the trodden paths of established science, into the byways of nature's undisturbed fields, and now and then pluck some wild flowers that we may carry them back to compare the beauty of their petals with those of their cultured relatives. We are inclined to do a little speculating if we be able to obtain the necessary means without "Chadwicking" any of our fellow practitioners; but hark! while we are, in our imaginations, toying with poetical fancies, an alarm comes from the great chemical laboratory of animated nature.

The contents of some unlabelled test tube or other receptacle has escaped, and coming in chemical contact with other elements, threatens the destruction of the whole apparatus. Two things are obviously necessary, viz.: to devise some means of avoiding a present catastrophe, and learn the nature of the cause in order to prevent a recurrence of the phenomenon. We shall now turn from the fanciful to the real, and note a few observations in connection with azoturia, and endeavor to make deductions therefrom. We note first, that the solidungulous only

are susceptible ; second, that the attack follows a season of rest ; third, emaciated animals are not attacked ; fourth, that the subject is an animal that feeds and assimilates readily ; fifth, that the first symptoms follow a certain amount of physical exercise. The above observations will form a basis for a series of questions, first of which is, why is the disease confined to solipeds ? Is it not much more than probable that it is due to a peculiar feature of angiology in the visceral organs of the horse ? For some unknown reason, according to Dr. Jas. Law, a part of the foetal circulation is not eliminated ; and in consequence a portion of the new and unprepared blood is carried from the portal vein and emptied into the general circulation, skipping the portal circulation, and thereby lacking the elaboration of some partially understood function of the liver. The liver may be in normal condition, and perfectly able to perform the task, but if the work is not brought to its office, it cannot be done. In view of the facts that none but solipeds have this disease, and none but solipeds have this peculiar freak in the circulation, is it not plausible that here is the basis of the pathological process observed in this disease ? This alone, however, will not make clear the various conditions which will arise. It will be necessary to keep in mind the observations above named.

We will not repeat them, but will take them up as necessary in the process of our discussion. We have already put the liver in the sweat box, examined it with reference to its connection with the trouble, and have granted it an honorable acquittal. Other organs, however, become associated with the existing abnormal conditions. The next question to arise is, why will the horse not be attacked while standing ? Instead of taking this question alone and following with others in their order, we shall call a subject into the line of mental vision, and watch the pathological progress and note the results. The horse now stands before you ; he is a good feeder ; he is able to absorb the nourishing elements from the ingesta ; he has been standing idle with good rich food ; he is in a plethoric condition ; his spirits are high and he looks able for fatigue duty ; his blood is laden with

albuminous and nitrogenous matters which are doing no harm, for they are not poisons.

Now bring out the horse. He is hitched, and away he goes with more than his ordinary vigor. As a result he breathes faster and more deeply, and the excess of oxygen, coming in contact with the crude blood above named, in the process of osmosis in the capillary circulation of the pulmonary system, changes the previously harmless elements into urea and hippuric acid, which are poisons. These being produced in large quantities viciate the blood, so that in passing through the ramifications of the cerebral circulation, the nerve centres are functionally deranged and the large plexi appear to become the storm centres. At least the large and powerful muscles which are situated in relation to them are the ones commonly affected. These largely developed muscles, such as the *caput magnum* and *glutens maximus*, having such an abundant blood supply that they may be acted upon topically by the viciated blood in passing through them. The various poisonous elements in the blood, under normal conditions, are excreted by the kidneys, and we find the purest blood in the renal vein. In this disease a vast flow of blood containing the poisonous elements above named, as well as those existing under normal conditions, and perhaps disintegrated blood corpuscles, are forced upon the kidneys and after a vain effort to perform the Herculean task, they fail. The skin as a dear excretory friend flies to their assistance, and after a futile effort and a flood of tears it also gives up in despair, and last of all comes the doctor, but it is not always easy to tell how many animated agencies have been sandwiched between the skin and the doctor. Up to this point nothing has been said with reference to the nosology of the disease, but you will more than surmise that we classify it as a blood disease. The lymphatic system being a part of the vascular system, no doubt has more or less connection with the conditions in azoturia.

Nature is a rigid economist and makes a vigorous effort to prevent any of its material from being wasted. When the animal is at work, the excess of albuminous and nitrogenous mat-

ter is consumed and no ill results follow; but when he is idle, the rich and nourishing elements are carried to the tissues as usual, and what is not needed to support him in idleness, is again absorbed by the lymphatic glands and poured into the general circulation through the thoracic duct and right lymphatic vein. This will do no harm while he is quiet, as before remarked. How harmoniously the work is carried on when all the absorbing and secreting and excreting glands are able to do the work set before them. In regard to preventive measures, little need be said in addition to what may be implied from the foregoing.

The horse undoubtedly was given to us as a laboring servant, and whenever there is any deviation from nature's intentions, a penalty must be paid unless precautionary means are practiced. Unless the animal is working, the feeding should be moderated and the excretory organs should be kept in active condition. One of the principal unwritten laws of nature might be expressed in a single word; *work*. But in order that work may be accomplished, the conditions must be favorable. The products of machinery must be taken out of the way that work may continue. A ferment will not act in the presence of its own product. A full tail-race will stop the mill. The questions might be asked—are mares more susceptible to azoturia than horses? and is the subject in more danger of future attacks because of his having had it once or twice? I would answer both in the negative. My observation would lead me to answer "no" to the first, as well as the fact that I do not believe the nervous temperament, peculiar to sex, has primarily any connection with the pathology of this disease. I have known very few subjects to have a second attack. This may be due, in part, to the following of advice given as to care in the future, but as I do not regard it as an organic disease, I fail to see the necessity of a recurrence, if the cause of the first attack is completely removed from the system. This leads us to the consideration of the treatment; and in respect to this, the general directions might be couched in a single word, viz.: *Eliminate*.

Stimulate the bowels, the kidneys, and the skin to their full

capacity in ridding the blood of the offensive matter. Take all feed away in the early part of the treatment, but allow a plentiful supply of water. Throw the governor belt, lift the pop-valve, open the stop cocks, pull out the fuel, scatter the fire, and let the machine run down. Now what shall be said as to specific remedies? I would like to see the list of drugs that have not been prescribed in treatment of this disease. First, if possible, get the patient into comfortable quarters with ample room, and if not able to stand give a deep, dry, and clean bed. If there is danger of self injury, control him mechanically and by means of chloral, or cannabis indica. Give eserine one and one-half grains and pilocarpine three grains, and if not followed by copious evacuations, follow in two or three hours with a bolus of eight drachms of socotrine aloes and a drachm of calomel. Give sweet spirits of nitre one ounce, and elixir of acetate of potash, juniper and buchu, one ounce every two hours, until the kidneys are sufficiently active. Give one ounce of bicarbonate of soda three times a day, until the color of the urine approaches the normal. When further continuance of the above is no longer indicated, finish the treatment with Fowler's solution, one oz., fluid extract of nux vomica one dr., and fluid extract of gentian one dr., given four times a day. Slings may be used to advantage in some cases, but in others they are a decided detriment. The practitioner should be guided by his judgment in each individual case. As to the use of the catheter, little need be said, as that subject was thoroughly discussed at the last meeting of this Association, at which time it was the concensus of opinion that the use of the catheter in all cases where it is possible should be discarded, and superceded by warm applications and digital pressure. Many other points might be mentioned, but no doubt they will come up in the line of discussion. There are many things yet to learn in connection with azoturia, but as in parturient paresis, some one may come up with a simple specific.

In conclusion it might be remarked parenthetically, that, should the morning star of science arise above the horizon of the

veterinary domain, and shed its rays of light upon this disease, discovering and revealing all its intricacies, it is to be hoped that in consideration of the interests of all devoted and legally qualified veterinarians, no government bureau or editor with veterinary proclivities will add further utility to the "bike pump" whose appendix of rubber tubing and milk siphon, hangs in pendulous protrusion from the trouser pocket of farmers, charlatans and empirics.

Will Secretaries of the State Board of Veterinary Examiners please send their names and addresses to the REVIEW, as we purpose publishing a list of all such boards and their Secretaries. Twenty-two States now have laws regulating the practice of veterinary medicine.

AMBULANCE FOR THE EQUINE.—The *Veterinary Journal*, April, 1905, comments editorially upon the fact that notwithstanding the enormous number of horses that meet with accidents upon the streets of London, it is only recently that provisions have been made whereby maimed or wounded animals can be removed instead of being allowed to lie upon the pavement unable to get up and blocking traffic in many cases for several hours. Through the efforts of a philanthropic society known as the Dumb Friend's League, equine ambulances to the number of five, are stationed in different parts of London and these ambulances are freely placed at the services of the public. We are pleased to state that nearly every city of note in the United States is supplied with both public and private ambulances. The public ambulances are in most instances owned and operated by Humane Societies at an expense to user only sufficient to operate the same. In most of our large cities many veterinary hospitals are equipped with a modern apparatus for the transportation of crippled animals. Ambulances of the equine variety are an absolute necessity in all well regulated cities, for aside from the humanitarian point of view it is a great convenience to be in a position to be able to immediately move disabled animals from the crowded streets, where most of the accidents to beasts of burden occur. We know of no more pitiful sight than that presented by a poor dumb animal unable to rise to its feet and in its unavailing struggles bruising and cutting itself upon the hard pavement. Hence the great need of some appliance that such cases may be removed to some place where the proper attention can be given them.—(*Western Vet.*)

OPEN ARTICULATIONS.

BY DR. W. A. AXBY, HARRISON, OHIO.

Read before the Ohio State Veterinary Medical Association, January 17, 1905.

In the veterinary profession, as in all others, there are many difficulties that have to be overcome; but by overcoming these difficulties they prove to be the conditions of our success. A life freed from all its difficulties would be shorn of all its possibilities of power, for power not called into active exercise lies dormant, and, powers suffered long to lie dormant die.

Difficulties are a spur that awakens and compels us to exert our power, this exertion giving us new power. And so out of our difficulties is born new strength, not so much to result in something modern and startling, but rather the correct and scientific use of old means toward acquiring a definite end.

On an occasion of this kind we are prone to recite the treatment of some rare disease or the performance of an unusual operation, but the success of the veterinarian is dependent far more upon his ability to apply the knowledge at his command in a methodical and thorough manner, to the cases in daily practice, than in the performance of a major operation.

Therefore in consenting to read a paper before this Association to-day, I do so, not with the idea of telling you something new, but rather with the hope that something old might be said in new or differently arranged sentences, concerning a "difficult condition," which will lead to a discussion, from which conclusions might be drawn that would be beneficial to all.

This, gentlemen, is the only excuse I have to offer in asking your indulgence for a short time, while we relate our conclusions, based on actual experience and observation, on the surgical and therapeutical treatment of "Open Articulations," one of the most difficult, serious, and frequent traumatic conditions we are called upon to treat in practice; also one given but little attention by authors on veterinary surgery, and in the light of modern wound treatment a condition that is more often improperly treated than any with which I am acquainted. Many vet-

erinarians of to-day are using the same treatment recommended years ago, failing to apply in these cases the rational treatment given simple traumata.

I deem a narration of the symptoms of this condition unnecessary, as you are all familiar with them, but a brief perusal of its pathogenesis will remind us of the serious nature of the trouble.

An open joint is a wound in which common integument, ligaments, and synovial membrane are ruptured, allowing the escape of synovia, and a mode of entrance for pathogenic organisms. These finding an ideal field for development, set up an irritation, causing inflammation, with its attendant train of symptoms; especially synovitis and often arthritis.

Soon after the injury to the joint a limited swelling makes its appearance, and a small amount of pure synovia is discharged. Later, as the inflammation increases we have increased flow of synovia, which coagulates on the wound as an amber colored clot. The joint now rapidly enlarges, becomes painful, then the temperature rises, the animal is restless, and the limb is kept in a constant state of motion; unless it be the elbow or stifle joint. There is total inability to bear weight on the limb, and should the animal lie down there is difficulty in rising.

Emaciation progresses rapidly, the animal is tucked up, the discharge from the joint becomes thin and watery and mixed with pus.

If the case be allowed to progress, the articular cartilage becomes necrotic and ulcerates; allowing the exposed ends of the articulation to come in direct contact. The discharge is now offensive and streaked with blood. The limb is greatly swollen; multiple abscesses make their appearance around the joint, these rupture, terminating in sinuses, which lead into the articulation. The swelling becomes indurated, all the symptoms become aggravated, and unless the animal be destroyed, death will usually ensue in from two to four weeks.

Should the case assume a milder course, ankylosis of the

joint may ensue, the parts to remain permanently enlarged, and if it be a joint of considerable motion the animal's usefulness is lost unless it be for breeding purposes.

One of the essentials in the rational treatment of any condition is a clear understanding of its etiology. In open joint the true cause of the phenomena previously mentioned is sepsis : or the intrusion of bacteria into the joint.

It would be difficult indeed to imagine a more fertile media for germ propagation than such a wound affords ; the synovial membrane being very sensitive yields readily to their irritating influence.

The germs usually gain entrance into the wound at the time of injury. A true knowledge of the cause of the various changes taking place in the open joint will avail us little in its successful treatment, unless we are enabled thereby to adopt a technique that will not only destroy this cause, but also protect the wound till nature repairs the damage.

The early, thorough and painstaking application of the principles of antiseptic wound treatment fulfills every requisite of an ideal treatment, and the practitioner who does not care to overcome the difficulties attendant upon their proper application in injuries of this kind, need not expect to become famous from their successful treatment.

The use of poultices in treating open joint are never indicated (meaning by this flaxseed, bran, etc.) as they only tend to increase the vitality and development of the germs present. Blisters are little better ; they increase the pain by producing extension of the inflammation to the superficial parts without reducing it within the joint. True, this swelling produced tends to closure of the external opening, but this has but little effect upon the destructive process within the joint, and by retaining the germs, increases the liability to abscess formation.

We will now describe to you a line of treatment that has given excellent results in our practice.

As the condition of the wound at the time treatment is re-

quested, makes a radical difference in the technique, we shall first consider the treatment of a recent case, one in which there is little inflammation. First, inquire into the history of the case; then clip or shave the hair from an extensive area around the wound, wash with iodide of mercury soap and hot water, then with 1-200 Hg. Cl₂ sol. Now the wound may be thoroughly examined without danger of carrying infection into the depths of the joint. Remove all shreds of tissue and foreign material if present, and irrigate the wound with 1-5000 Hg. Cl₂ for 30 min., using for this purpose a fountain syringe with an extra length of tubing fitted with an ordinary milk tube. Should the opening into the joint be very small, enlarge sufficiently for thorough disinfection. The case is now ready for the occlusive dressing; and as the open joint secretes profusely, apply an abundance of absorbent material; first, a quantity of tannoform and boric acid (1-8); over this multiple layers of gauze and cotton, the whole to be retained by a bandage, as immobility of the part is always to be desired. Apply as an external dressing a starch bandage, this not only limits motion but acts as a safe barrier against the intrusion of germs from without.

Should there be no indications of sepsis, as indicated by the usual symptoms, this dressing may be allowed to remain for four or five days; when removed the wound is gently irrigated with hot sterile H₂O and again protected in the same manner.

If the progress of the case under this line of treatment should prove unsatisfactory, the temperature become elevated, and the limb be kept in a constant state of motion, and the wound secrete freely, there has been a failure in rendering the parts aseptic. In this case, remove the dressing, enlarge the original wound and irrigate with 1-2000 Hg. Cl₂ sol. for one hour; then for 30 min. with 1-5000 same sol. and apply an aseptic pack of gauze and oakum, keeping the same saturated with an antiseptic sol. for 24 hours. If at the expiration of this period the symptoms are improved the dry dressing as previously recommended may be employed, this to be changed as necessary and the wound kept bandaged until entirely healed. Should the case be one

of longer duration with severe pain, swelling, unhealthy discharge, and secondary abscess formation, the treatment should be directed first toward thorough disinfection of the joint, and the reduction of the inflammation, this being best accomplished by freely enlarging the original opening and the bold incision of all abscesses. Irrigate freely with antiseptic sol. and inject 5 per cent. sol. of protargol ; this non-irritant, penetrates into the tissues and has a specific effect against pyogenic bacteria. The joint should now be enveloped with gauze and oakum and a stream of hot normal salt sol. applied until the inflammation subsides and the pain and discharge has improved, when the dry dressing as previously mentioned is to be applied and changed daily ; the joint to be irrigated and protargol sol. injected until the secretions become pure. Should the inflammation in the joint remain to any extent as healing progresses, the use of the plastic dressings, as "Thermofuge" or "Oxychlorine," applied to the entire joint, will assist materially in its reduction, at the same time protecting the wound from further infection.

Where the application of bandages is not practical, as in the shoulder, hip and stifle joint, the swelling is usually excessive ; the wound requiring free incision to allow the escape of secretions and thorough application of the antiseptic sol. The parts should be irrigated three times daily with an antiseptic sol. for 30 min., protargol injected, packed with the tannoform, a thick layer of cotton applied, retained by adhesive strips. This absorbs the secretions and effectually excludes all germs.

As healing progresses and the inflammation subsides, daily dressing will be sufficient.

Open navicular joint due to picked-up nail is a common occurrence and unless given opportune and proper treatment either ends in death of the animal or renders it permanently lame. If the case is seen early, remove the shoe, pare the insensitive frog and sole until quite thin, thoroughly disinfect the foot, enlarge the wound, and treat as open joint in any other region, with the exception that tar bandages should be used in all cases of this kind. Where the wound is suppurating freely, the

limb swollen, and the pain severe, excellent results may be expected from passing a small probe-pointed bistoury into the bursæ and enlarging the opening one-half inch in each direction, the granulations curetted away from the old sinus, and the bursa irrigated with 1-1000 Hg.Cl₂ sol.; this is now removed by sterile water and a sol. of iodine and pot. iod. in sterile water injected; the foot is now enveloped in oakum and kept saturated with a hot creolin sol. The joint should be irrigated twice daily and iodine sol. alternated with protargol injected until the discharge becomes healthy, when the dry dressings may be applied. Should the bone become diseased and the recovery be slow, resection of the flexor pedis tendon should be performed. Curetting away all diseased parts, the resulting wound thoroughly disinfected and retained in an aseptic condition; for, unless we succeed in thoroughly cleaning the joint the operation will prove a failure.

Open articulations treated in this manner almost invariably make complete and prompt recoveries, the inflammation subsides, the flow of synovia gradually decreases, the wound granulates and heals without suppuration. Should the joint remain enlarged and indurated and lameness persist, the use of blisters or the actual cautery may be beneficial.

The sling should be used in all cases where there is inability to bear weight on the limb for any length of time, bearing in mind the necessity of a properly regulated diet and good hygienic surroundings.

With your permission, gentlemen, I will describe a few cases in various conditions, treated by us in practice, with the results obtained in each case.

Case No. 1.—Called at 7 A. M. to attend a bay road mare, the property of Mr. Wm. Fowler, City. Found a small wound on the supro-internal surface of the hock, due to a kick from another horse inflicted during the previous night. The wound was discharging synovia freely, parts swollen and very painful, with inability to bear weight on the limb. The hair was clipped from the internal surface of the hock, and the parts thoroughly disinfected. 1-5000 bi-chloride solution was allowed to trickle over the wound for four hours, when the pain and swell-

ling had somewhat diminished. The dry dressing as recommended in this article was then applied, the animal cross tied and kept standing. There being no unfavorable symptoms, this dressing was allowed to remain four days; when removed the parts were aseptic, inflammation and lameness entirely subsided. The wound was again gently irrigated with a normal salt solution and protected as before. This line of treatment was persistently carried out for three weeks, when the wound was entirely healed and the animal given the freedom of a box stall. Gentle driving was begun at four weeks, the mare making a complete recovery without scar or filling of hock.

Case No. 2.—A sorrel mare, the property of John Bielman, Sater, O. Open fetlock joint, due to the animal having fallen through a bridge. The wound being located on the antero-inferior aspect of the joint the size of a silver dollar, with skin and underlying structures excoriated, laying bare the articulation. The patient was led five miles over a dusty road after the accident occurred. I saw the case eight hours later. The owner had applied lard and turpentine and bandaged the wound, dust and all. The pain was great, leg swollen to carpus and wound filled with dirt and coagulated synovia. All shreds of tissue and the hair around the wound were removed, the part cleaned with soap and boiled water, then irrigated for one hour with 1-2000 Hg. Cl. sol., after which the occlusive dry dressing was applied and the mare kept standing. On making the second visit three days later, I found the lameness and swelling entirely abated, and on removal of the dressing parts were clean and the wound filled with a firm clot of synovia, which was removed by irrigation and the dressing applied as before. This wound was again dressed in three days, when granulations were making their appearance over the wound and discharge of synovia greatly diminished. The dressing was now changed every fourth day and at the expiration of 21 days the wound had almost healed and the flow of synovia ceased entirely. As there was slight inflammation in the joint, "Thermofuge" was now applied and changed every second day until at the end of five weeks, the wound being entirely healed, exercise was ordered. There remains but a small cicatrix, being due to the destruction of skin.

Case No. 3.—Bay mare, owned by Dr. J. L. Axby; open stifle joint, due to a kick. The injury was discovered early in the morning, pain was severe, leg swollen, and synovia trickling down to the hoof. The wound was about one inch in length and located antero-inferiorly. This was cleaned as the

others and the wound packed with pure "Tannoform," a pad of gauze and cotton applied, retained by adhesive strips. This was left in position until the following morning, when the limb was badly swollen and the pain more severe than on the preceding day. After again irrigating, hot sterile water bathing was persisted in the entire day, which reduced the swelling and pain. Tannoform again was used and the wound protected as before. This irrigation was used night and morning and the treatment as outlined continued with the addition of 5 per cent. Protargol sol. once daily. The inflammation gradually subsided, the flow of synovia became less each day, the wound being healed on the 20th day. There still remained slight lameness, which responded to a mild blister, leaving neither scar nor blemish.

Case No. 4.—Large bay horse, the property of the city of Aurora, Ind. The horse had been injured three weeks previous, having suffered a nail prick, involving the bursa of the coffin joint. The treatment previous to my visit had been removal of the shoe and the application of flaxseed poultice at night and clay and vinegar during the day. The original opening had been slightly enlarged also. This horse was intensely lame, the limb was swollen to the elbow, coronary band enlarged and purulent synovia discharging from the wound in the foot and from an abscess that had ruptured in the hollow of the heel. Temperature was 105° F., pulse 70, and respirations hurried.

Treatment: The foot was first thoroughly disinfected and as the insensitive frog was detached, this with a portion of the sole was removed. The region was again cleaned with Hg.Cl₂ sol. and a probe-pointed bistoury passed into the joint and the original opening enlarged freely, and the granulations curetted away, the joint then being irrigated with 1-1000 Hg. Cl₂ sol., rinsed with sterile water and Iodine sol. injected. Tannoform? was now inserted into the joint, and the gauze drain applied, boracic acid was plentifully dusted on the sole, the foot enveloped in oakum and a tar bandage applied. The attendant was instructed to remove the bandage in 48 hours and thereafter twice daily to soak the foot in hot salt sol. for one hour, then irrigate with Hg.Cl₂ sol., injecting the iodine sol. in the morning and Protargol sol. in the evening, packing the abscess cavity and the original wound with Tannoform and bor. acid. Marked improvement was noticeable after the third day, pain decreased, inflammation subsided, discharge less in amount and healthier in color or character. The part was now dressed once daily until at

the expiration of six weeks the wound had entirely healed, a shoe was placed on the foot and the animal exercised daily. Lameness rapidly disappeared, the animal entirely recovering, leaving only the bulb of the heel slightly enlarged.

WRITING PRESCRIPTIONS.—Many veterinarians are beginning to realize that the writing of prescriptions is an exceedingly bad practice for many reasons. In the first place the druggist charges 1,000 per cent. profit in almost every instance and it is impossible to convince the laity that the veterinarian does not get a share of this profit. Then again many druggists will repeat the prescription not only for the original client but for the whole neighborhood, and in this way beat the veterinarian out of legitimate fees. Many druggists will also give a copy of a prescription to the client, a rival practitioner, or any empiric that calls for it. If a mistake is made in writing or filling a prescription the druggist is only too willing to throw the responsibility on the veterinarian. Every veterinarian should, if possible, dispense his own medicines. In this way he will avoid the experience of which the following illustration is a good example. In conversation with a practitioner regarding this subject he stated that the day before, a good client drove up to his office with a horse having a sore back. Having no facilities for dispensing the proper remedy he took the client into a neighboring drug store and wrote him a prescription for a quart of white lotion, for which the druggist charged \$1.75; yet the cost of same, including the bottle, could not have been more than ten or fifteen cents. In this case the druggist obtained all the profit of the transaction, as the veterinarian did not like charging a fee for this simple advice to a good client. On the other hand, had the veterinarian been in a position to dispense his own medicines he could easily have handed the client a quart bottle of white lotion and have collected a fee of from a dollar and a half to two dollars with mutual satisfaction to the client and himself. However, if the practitioner has not the facilities for dispensing medicines properly, it is better to write prescriptions, even if the druggist does reap the profits, than to do as we heard of a veterinarian recently, who dispenses medicine in beer bottles, wrapped up in old newspapers. Unless the veterinarian can do better than this or can exercise the same care as the druggist regarding bottles, corks, labels, and wrappers, it is inadvisable to do otherwise than write prescriptions.—(*Western Veterinarian.*)

RETAINED AFTER-BIRTH IN COWS.

BY SIDNEY D. MYERS, WILMINGTON, OHIO.

Read before the Ohio State Veterinary Medical Association, January 18, 1905.

It is impossible to say how soon after parturition the presence of the foetal membranes ceases to be a natural and leads to a pathological condition.

For practical purposes it is usually safe to assume that, if the membranes do not come away in from 24 to 36 hours, they should receive attention.

We have, however, on numerous occasions, found cases that have not run over 24 hours where they were in a state of decomposition.

The causes of retained after-birth may be classed as predisposing and exciting. Among the predisposing we have debility, resulting from preexisting disease, or from insufficient nourishment, protracted or premature labor, and abortion.

The condition is usually more prevalent in the early spring, especially after a severe and protracted winter, when we find many cows in an emaciated condition. Exposure to cold, and drinking cold water, may also act as factors.

The exciting causes are not well understood, from the fact that the process by which the normal expulsion takes place is not definitely known. Some cases are caused by a too rapid contraction of the os uteri, which may be caused by drinking cold water, or in the case of an animal that has aborted, it may, in some instances, be due to ergot.

Some writers attribute retention to a tardy or suppressed involution of the uterine walls. We can readily see how this may play an important part in some animals, as the mare and the sow, but we cannot see how it would have much effect where the placenta is attached as it is in the cow.

Others find a possible cause in an inflammatory exudate thrown out of the maternal cotyledons causing them to adhere to the foetal cotyledons. This could hardly be true unless the condition existed before parturition, as the foetal cotyledon has,

in reality, become a foreign body, and it does not look reasonable that the exudate would cause adhesions between the two.

The symptoms of retained after-birth are usually plain, the condition, as a rule, being diagnosed by the owner or attendant.

In cases where the membranes are not exposed, some of the following symptoms are usually presented: Dullness, partial or complete anorexia, elevation of temperature, decubitus, suppression of milk, a more or less fetid discharge from the vulva, arched back, and straining. Another prominent and reliable symptom is the absence of the mucous plug, which, if found in the vagina or os uteri, is a good indication that the cow has cleaned.

The treatment prescribed, especially by the older writers, is both medicinal and surgical. The former, except as an adjunct to the latter, is, in our opinion, worse than useless, as it does not seem to be of any benefit, but on the other hand often delays rational treatment.

Among the remedies used for the expulsion of the secundines are savin, rue, coriander, cumin, parched grains and fat meat.

With the possible exception of ergot, the so-called remedies have little or no effect on the uterus. Ergot is advised by some to produce contraction of the uterus, but as it causes a contraction of the os uteri as well, it is contraindicated.

In preparing for the removal of the after-birth the surgeon should attire himself in a similar manner as for ordinary parturition. The clothing should be as little as is consistent with the environments, and should be such as may be readily sterilized with boiling water.

We find an old wool sweater with the sleeves entirely removed, a pair of stout overalls, and a pair of rubber boots, make a good outfit.

The cow should be placed in a narrow stall or tied up close in a corner. An assistant holds the tail out of the way and keeps the animal pushed well over against the side of the stall.

The vulva and surrounding parts should be washed and dis-

infected. The hands and arms should then be washed with soap and warm water, to which has been added some good antiseptic.

The hand and arm that are to be introduced should be anointed with fresh lard which has been mixed with some reliable non-irritating disinfectant, such as creolin, lysol, zenoleum, or such like.

Lard has several advantages over oil or vaseline. It makes a better coating on the arm ; that is, the fluids in the uterus do not remove it as quickly as the oil or vaseline, and should it get on one's clothing, as it is very apt to do around the arm holes, it may be washed out more readily than the other lubricants mentioned.

Dr. Liautard writes of a preparation which he attributes to Dr. J. B. Murphy, of Chicago, that may be of service in some cases ; I quote him as follows : "After washing his hands for five minutes with tincture of soap, and then rubbing them with alcohol, he dries them thoroughly. Then, pouring in the hollow of one hand a solution of one part of gutta-percha in twenty-five parts of benzine, the whole is spread thoroughly over both hands and forearms, with the principal care at the region of the nails and in the interdigital spaces.

"Keeping the hands open and fingers apart, the coating is allowed to dry. This takes two or three minutes. By this process the skin is covered by an isolating, antiseptic, impermeable, soft, thin and transparent coat, insoluble in water or alcohol, and, therefore, can be disinfected between the various steps of an operation. To remove it only a little friction with benzine is necessary, and underneath the epidermis remains soft and smooth. It has only one objection, which is that when an operation lasts too long, it may break off here and there on the fingers."

However, the application of a little more of the solution of gutta-percha will readily remove the trouble. Some practitioners advocate flushing the uterus with several gallons of an antiseptic solution before commencing the operation of removing

the membranes. We do not do this unless we suspect that septic conditions are present, as the cow, in straining, throws the fluid out on the operator, which makes the task more disagreeable than it otherwise would be. A pail of warm antiseptic solution should be at hand, in which to wash the hands and arms as the operation proceeds.

As stated before, the animal is held by an assistant. We are now ready to proceed with the operation proper. If any part of the membranes are on the outside of the vagina, they should be grasped with one hand while the other is passed gently into the uterus. Light traction should be made by the free hand while the other one follows up the membranes until the first cotyledon with placenta attached is encountered, which should be carefully peeled off, and then to the next and so on until all have been removed. The traction on the outside serves to steady the cotyledon while this is being done. If no part of the secundines are exposed, that part which is first encountered should be loosened and brought out to be held as described.

This operation, in some cases, is quite easy, but in others it is quite tedious and tiresome, especially where the attachments are firm and far down in the horns of the uterus.

We have found in these difficult cases that it sometimes helps matters to inject a quart or a half gallon of warm antiseptic solution. This changes the slimy character of the fluids in the uterus so that the cotyledons may be more readily manipulated with the fingers. This, however, has the disadvantage of causing a contraction of the uterus on the hand, which makes the operation tiresome.

Prof. W. L. Williams advises where the placentæ are enlarged, firm, and rapidly becoming necrotic to twist them off. It is admitted that the surface of the cotyledon is much larger than the small neck that is twisted off, but, on the other hand, we have a fresh wound which is more dangerous than the necrotic surface that has been removed.

It is our aim to remove all of the membranes that can be removed without making any new wounds. We frequently meet

with cases where the os uteri is contracted to such an extent that the hand cannot enter without making a laceration. In such cases the after-birth is usually loose, so that by gentle traction on the outside and with the fingers in the os it can quite often be removed in its entirety.

We never aim to dilate the os to the extent of making a new wound, but trust to the after-treatment, which consists in thoroughly flushing the uterus and vagina with a warm anti-septic solution. The antiseptic which we have found most satisfactory is zenoleum, one and one-half ounces to the gallon of water, which should be injected at a temperature of 100 to 104° F.

The injection should be made with a fountain syringe, which can be made of galvanized metal. It should be fitted with a tight cover and provided with a bail, by which it may be suspended from the ceiling.

The syringe should be made to hold from 8 to 12 pints. Should it be much larger, the depth would be such that in the ordinary stable it could not be elevated high enough to get the desired force. When the syringe is not in use the hose should be detached, washed and placed within the reservoir of the syringe, where it will be kept clean.

In our opinion the common veterinary injection pump is not a proper instrument with which to wash out the uterus, as it is almost impossible to use it without getting more or less filth in the solution. Besides, it is difficult to get a vessel in which the solution should be mixed.

Some advise flushing once or twice daily. This we deem unnecessary, besides it would be impossible in a country practice. We find that one washing in ordinary, and two or three at intervals of two or three days in extreme cases, are usually sufficient.

In irrigating the uterine cavity too much force should not be used or too much fluid injected at one time, lest it pass through the fallopian tubes into the abdominal cavity and there be the cause of peritonitis.

After the uterus has been irrigated we find it is better to allow the animal to be turned out of doors, when the weather is favorable.

There the cow can move about at will ; thus the liability to strain is reduced.

In cold weather the chill should be taken off of the drinking water.

Plethoric animals would, in most cases, be benefited by a dose of magnesium sulphate.

Weak, run down animals should receive stimulants or tonics according to the exigency of the case.

In those cases where there is an elevation of temperature and loss of appetite, we find benefit from fluid extract of nux vomica $\frac{1}{2}$ ss, carbolic acid $\frac{1}{2}$ ss, given in a pint of water or gruel, three times a day. We do not wish to imply that carbolic acid has any direct effect on the blood, but it has a tendency toward rendering the alimentary canal aseptic and thereby having a salutary effect.

The sequelæ are usually of a septic nature, and should be treated as soon as they are recognized according to their individual requirements.

THERE are now seventeen graduate veterinarians in Tennessee ; 26 licenses have been issued by the Board of Examiners. The new law goes into effect on Jan. 1, when only graduates can register.

A SERIOUS OPERATION.—A husband came home one evening to find a note left for him by his wife. Carelessly he opened it, but as he read his face blanched. " My God ! " he exclaimed, " how could this have happened so suddenly ? " and, snatching his hat and coat, he rushed to a hospital which was near his home. " I want to see my wife, Mrs. Brown, at once," he said to the head nurse, " before she goes under the ether. Please take my message to her at once." " Mrs. Brown ? " echoed the nurse. " There is no Mrs. Brown here." " Then to which hospital has she gone ? " asked the distracted husband. " I found this note from her when I came home," and he handed the note to the nurse, who read : " Dear Husband : I have gone to have my kimono cut out."

PRACTICAL OBSTETRICS.

BY J. D. FAIR, D. V. S., BERLIN, OHIO.

Read before the 22d Annual Meeting of the Ohio State Veterinary Medical Association
at Columbus, January 18, 1905.

I mean to address more particularly the younger members of the profession. However, I will be pleased if you will all be generous with your past experience, and I hope you will be free in making practical suggestions. I consider veterinary obstetrics a very difficult and complex art, and is attended with a great deal of danger, exposure and hard labor. To be a successful obstetrician it is well to have a thorough understanding of the various methods of manipulation of the different authors, together with original thoughts, good judgment, persistence, determination and a great amount of physical strength. I am located in an agricultural and stock-raising district and the country is rather hilly. The farmers use their mares for all kinds of farm work, which, together with the condition of the country, I think has a tendency to increase the number of cases of dystokia. Making a conservative estimate, I think I have twenty-five cases of dystokia each year in mares and cows. In eighteen years' practice it would make a total of four hundred and fifty cases. Of this number I delivered only a few living colts that matured, but quite a number of calves. I have come in contact with all the different presentations described in the various text-books and many positions and conditions that are not given in the books, and will continue to find new conditions —hence it requires originality, practical knowledge and good judgment to deliver special cases. Cases that were very difficult for me when I first came in contact with them are now comparatively easy.

First, what are the necessary preparations? How should we dress for this kind of work?

Some practitioners have a special suit and keep it there in readiness, made out of canvas, duck or oil cloth, made like overalls, with a waist attached to it without sleeves, buttoned up in

front or back, and after they get through some one can scrub you off with a broom and water, and can be used again. But the suit soon becomes filthy and undesirable. I have adopted this plan: I carry a pair of overalls and ask the owner to furnish me an old undershirt or shirt of some kind. I cut the sleeves out and when I get through I rip it up in the back or front and throw it away. I treat the overalls the same way.

There are a great many obstetrical instruments. Nine-tenths are not practical in my judgment. I have a great many and use but few. When I am called to see a case I take with me a pair of French hobbles, a case of embryotomy knives, obstetrical saw, a repeller, a few sharp hooks and blunt hooks, some strong rope and some soft, pliable rope, and chloroform. When I get through I throw the soiled rope away. I avoid the use of all sharp instruments as much as possible. If you use them, be very careful. If the case dies the owner and others assisting may say: "He slashed and cut and with his iron hooks he tore her all to pieces." This may not be just, but for policy sake I do as little of it as possible. I rely on my hand and arm, smooth rope or cord, to bring the parts into proper position. However, if the case demands it, I use and do whatever is necessary to deliver.

I remember well when I was called to see a black Norman mare, with massive quarters, weighing about eighteen hundred pounds. She was found in the morning and her condition indicated that she had been in labor for the greater part of the night. I made an examination and found a sterno-abdominal presentation, two fore and one hind limb presenting. I could see the feet when she had a pain. I could not find the head nor the other hind leg. I concluded that I had a very hard case. The mare was laying down. I put the hobbles on her and proceeded to deliver. I thought of and tried to do a great many things, and failed. Finally I corded the three legs. I pushed the hind leg back into the uterus behind the pubis, then I ordered them to pull on the one front leg and draw it out, and

with safety I amputated at the knee ; this left a nice smooth surface. I made traction on the other and amputated at the knee. I pushed those stubs back into the uterus. The next thing was to secure the missing leg. I brought into the pelvic inlet and the other which I had corded was easy to get. Now I pushed those amputated legs back and forward ; as far as possible push over a point so that when you make traction they will extend. I ordered them to pull on the hind limbs, made a posterior version and delivered. If you can locate the head make anterior version ; be sure to cord all the feet you can find first ; bring the head up ; deliver as far as you can, then amputate ; repeat the remaining parts, make posterior version, and delivery will be easy.

I was called to see a gray Norman mare ; I found an anterior presentation. The head and neck were born and I could see three feet. On making an examination I found these to be two front feet and one hind foot. I corraled both front feet and pushed the hind foot back into the uterus ; I flexed the foot on the fetlock and pushed it back as far as I could. I then ordered the men to pull on the front legs. They straightened out, but they failed to pull the colt. I made an examination and I found that the hind leg would not slip back as I expected. The ankle apparently moulded itself into the bed of the uterus and the hock braced itself against the sacrum ; the shaft was too long and I could not move it at all. I tried to rotate the foetus. I tried everything, but could do nothing. I worked until I was almost exhausted. I concluded to try and deliver some other way. I opened the abdominal cavity and removed contents. I cut a flap of skin over the spinal column, divided the body in the lumbar region with my obstetrical saw. I used the flap of skin to cover the divided segment and pushed it back into the body of the uterus. I then corded the legs, brought them up into the pelvic cavity ; posterior version was quite easy and a speedy delivery was accomplished.

I have had a number of those cases ; I have delivered both ways, but to divide the body and perform version is the safest

and easiest way to deliver. Those cases you can deliver in standing position.

A posterior presentation with the hind limbs extended straight under the body of the foetus, extending forward as far as the sternum or elbows, the buttocks entering the inlet of the pelvis, is many times a very difficult condition to meet. The first thing to do is to put the hobbles on them. Elevate the hind parts, then use a repeller (and your arm is the best one to use), push the foetus forward and upward as far as possible. By this time you may be able to reach the tibia somewhere below the stifle; tuck it back inch by inch until you can reach the hock; grasp it and raise it up; bring it up as far as possible, then push it forward and in an upward direction and place it behind the anterior crest of the ilium. Slip your hand down the leg to the foot; flex it on the ankle and with rather a rotary movement bring it up over the pubis past the opposite ilium into the inlet. Proceed with the other leg the same way.

I had a case that I was unable to repel. We elevated the hind quarters and another very strong man and myself were unable to push it back. I used a repeller and put two men on that. We four could not push it back. We made a thorough trial, but did not succeed. I located the hip joints, cut the skin and muscles, tore the flesh with my fingers, reached the head of the femur, fastened a hook to it and ordered them to pull. I cut the tendon and they pulled the leg out very easily. I repeated the operation on the other side. To hook onto the pubis and to deliver the remainder was very easy.

I had a case that caused me considerable trouble. I was mistaken, and still not mistaken. This was an anterior presentation, the head and neck turned back, one front leg entered the pelvis. I soon found what I supposed to be the other front leg; I made sure that I had two knees. I straightened the head and neck, corded the legs and ordered my assistants to pull, but they could not pull it. I made an examination and I found a peculiarity below one shoulder. I supposed it was an undeveloped fifth leg. I took it in my hand and slipped it up over the pubis

past the ilium, then ordered them to pull ; I braced the mare and told them to pull hard. They did so, but could not deliver. I told them to stop. I ordered them to pull on one front leg and bring it up with the other, but they failed. I made another examination and found that the one leg was fast to a hind quarter. I shortened their hold by slipping a rope around the body of the foetus, let go of this hind leg and they delivered the colt. This was a three-legged colt. The one leg terminated at the elbow. On that same side the hind leg was always extended forward, over the shoulder and had a perfectly shaped knee. This mare had a large shoe boil on the same side corresponding with the missing leg of the foetus.

In conclusion, I will say : be thorough in your examination ; you can frequently locate points and change them per rectum ; bring parts within reach in this way. Cast as few mares as possible ; use anaesthetics whenever you can with safety ; take advantage of contractions and relaxations ; be careful and conservative with the use of instruments ; use plenty of lard ; keep a steady head ; learn to reason and think well ; make haste by going slow. Do all this and you will be a practical obstetrician.

WHAT'S IN A NAME.—A man with a soft, low voice had just completed his purchases in a store. "What is the name?" asked the clerk. "Jepson," replied the man. "Clipson?" "No, Jepson." "Oh, yes, Jefferson." "No, Jepson; J-e-p-s-o-n." "Jepson?" "That's it. You have it. Sixteen eighty-two—" "Your first name; initial, please." "Oh, K." "O. K. Jepson." "Excuse me, it isn't O. K. You did not understand me. I said 'Oh.'" "O. Jepson." "No; rub out the O. and let the K. stand." The clerk looked annoyed. "Will you please give me your initials again?" "I said K." "I beg your pardon, you said O. K. Perhaps you had better write it yourself." "I said 'Oh—'" "Just now you said K." "Allow me to finish what I started to say. I said 'Oh,' because I did not understand what you were asking me. I did not mean that it was my initial. My name is Kirby Jepson." "Oh!" "No, not O., but K." said the man. "Give me the pencil, and I'll write it down for you myself. There, I guess it's O. K. now."

THE LIVE STOCK INTEREST OF AGRICULTURE AND ITS RELATION TO VETERINARY SCIENCE.

BY HON. FRANKLIN DYE, SECRETARY STATE BOARD OF AGRICULTURE,
TRENTON, N. J.

A Paper presented to the Veterinary Medical Association of New Jersey at its Semi-annual Meeting at Washington Park, N. J., July 13-14, 1905.

An intelligent consideration of this subject requires a knowledge of the number and value of our live stock; the essential character of this industry to the growth and prosperity of other industries, and the necessity of preserving the health of our domestic animals, because of their money value and especially lest, through disease, they become a menace to human health.

As reported by the United States Department of Agriculture, January 1st, 1905, the number, average price and total value of farm animals in the United States are as follows: The number of horses in the United States is 17,057,702, valued at \$1,200,310,020 (\$70.37 per head). The number of mules, 2,888,710, value \$251,840,378 (\$87.18 per head); milch cows, 17,572,464, value \$482,272,203 (\$27.44 per head); other cattle, 43,669,443, value \$661,571,308 (\$15.15 per head); sheep 45,170,423, value \$127,331,850 (\$2.82 per head); swine 47,320,511, value \$283,254,978 (\$5.99 per head.)

In the following table for New Jersey please notice the higher value per head of the same stock in this State as compared with the average value for the United States:

			<i>Difference</i>
Horses . . .	94,278	Value \$ 9,293,580	Per head \$ 98.58 \$28.21
Mules.	4,974	" 564,316	" 113.45 26.27
Milch Cows .	184,618	" 7,261,026	" 39.33 11.89
Other Cattle.	79,599	" 1,591,732	" 20.00 4.85
Sheep	43,344	" 188,841	" 4.36 1.54
Swine	150,988	" 1,570,275	" 10.40 4.41
	557,801	\$20,469,770	

Here is a money value at a low estimate of twenty and a

half million of dollars, equal to \$590.76 for every farm in New Jersey (I take it that the above table does not include horses in cities).

To take care of the health of these animals, we have in round numbers three hundred and fifty veterinarians scattered here and there throughout the State. This would give one veterinarian to every ninety-nine farms, if so many of them were not located in the cities. Jersey City and Hoboken, Newark and the Oranges alone, have over one hundred veterinarians located within them. This leaves for the farms and the other cities and towns, about one veterinarian for every one hundred and forty farms. However, all of our veterinarians are subject to call both in city and country as occasion may require. And it is for this Association to determine whether we have enough good veterinarians in New Jersey at the present time.

The fact that such an Association as this exists and that laws have been enacted within recent years requiring special education for the practice of veterinary science shows that the profession is aspiring to a larger usefulness and a just dignity among the other professions.

Turning now to my second proposition—(the essential character of this industry to the growth and prosperity of other industries): divested of our live stock, what would our farms be worth? They could not all be devoted to truck farming and even if they were, the faithful horse would be needed both in field work and in transportation. And it is worthy of remark in this connection that, notwithstanding the advent of bicycle, trolley car and automobile, horses are higher in value per head than they have ever been before. He is not only the beast of burden in city and country, but also the motive power, *par excellence*, for pleasure driving.

Nor can we eliminate the foster mother of humanity, the dairy cow and her progeny from our business world. Should we do so, the manufacturers of nursing bottles, milk bottles and cans would go out of business. Cream in your coffee, at your hotel, would be a greater luxury than it now is, and beefsteak and

onions for the hearty veterinarian would be a thing of the past. No, we cannot spare the noble horse nor the motherly benevolent cow. Nor will Jew or Gentile be willing to forego the roast lamb from their diet, and most of us Gentiles have a fellow feeling for the hog.

Without going into detail, the merest reference to the place these animals hold in our national economy as food products and in other ways, justifies the assertion that without them other industries, with which they are not so closely identified as they are with agriculture, would be seriously crippled, and the daily diet of their workers would of necessity be greatly curtailed.

The preservation of the health of our domestic animals because of their money value is an important consideration. What the annual loss by unchecked disease, accident, etc., to the domestic animals of New Jersey is, I have no means of knowing, but it is no inconsiderable sum. What it would be without the checks put upon it by the application of veterinary science and skill may be suggested, if we ask to what extent would anthrax spread and what would be its ravages if unmolested. Or suppose we allow glanders free spread among our horses, when and where would it stop?

Or ignoring the possible effects of (the sometimes slow working) tuberculosis among our dairy animals, take no interest in securing those conditions that contribute to health, while preventing disease, nor even remove diseased animals from our dairy herds. What, in a short time, would be the condition of those herds and what the character of their product? And with pleuro-pneumonia, foot-and-mouth disease and many others.

It is in this connection that I wish to emphasize the importance of my fourth proposition : diseased animals a menace to human health.

While some human lives are not worth much to their generation and others an absolute detriment, yet, ordinarily, one human life is worth more than many animals ; and diseases of animals should not be allowed to assail the human race if it is

possible to prevent it. That it is possible to do so, the investigations and practice of veterinary science, in the more recent years, have clearly demonstrated.

As we consider this phase of our subject, either by itself or in connection with the points previously named, the high mission of the veterinary profession appears, and the necessity for an education that combines scientific study with practice. Not only a money value, but human health and human life are also associated in the preservation of the health of our domestic animals.

The profession should give more attention to poultry. According to Secretary Wilson, of the United States Department of Agriculture, "The hens of the country, during their busy season, lay enough eggs in two weeks, at the high prices of eggs that prevailed during the year, to pay the year's interest on the National debt."

The poultry and egg product of New Jersey is more than \$2,000,000 annually. If the diseases of poultry were understood so as to be controlled, the above named sum would be greatly increased.

Our veterinarians should also be able to give the farmers points on breeding for improvement of farm stock. We need now 75,000 well bred cows to take the place of the same number in our herds that pay no profit.

The science of breeding should be better understood by stock-breeders, and educated veterinarians are in a position to help it on among the farmers. Thus a stronger bond of good feeling would prevail between the veterinarian and the farmer.

The farmers have a pecuniary interest in an efficient veterinary science, holding as they do 600,000 head of stock, exclusive of poultry, with a value of twenty and a half million of dollars. It is to their interest, in all cases of serious disease amongst their animals, to immediately call for the services of their veterinarian. Delay frequently means the loss of valuable stock.

For this service they are, or should be, willing to pay a fair compensation and as promptly, at least, as they pay their family physician.

The consumers of meat and milk also have a deep interest in the question of a healthful food supply and, as our intelligent veterinarians are associated with the producers of these products in preventing or curing diseases that may affect their healthfulness, they, the consumers, have an indirect interest in maintaining a high grade veterinary service.

Owing to the necessity of preserving the health of our domestic animals, *because of their money value and especially lost, through disease, they become a menace to human health*, an efficient veterinary service is required: and all that can be done to raise the standard of efficiency in the profession should be encouraged.

THE vital statistics for New York for the past year show that ten hundred and forty persons (1,040) were killed by automobiles, or died from injuries caused by automobile accidents.

GENERAL consumption of horses in Chicago has this year up to the middle of June expanded about 4,000 head as compared with last season. This, despite the depressing effects of the teamsters' strike, shows a most satisfactory state of trade. Arrivals for 1905 total something over twelve per cent. more than for the same period of 1904.

SARCOMATOUS GROWTH OF THE TAIL OF A MARE.—Dr. Felice Cinotti, in *Il Nuovo Ercolani*, for April, 1905, reports the following interesting case: "The history of the various kinds of neoplasms met with on the tails of our domestic animals is rather extensive, and interesting descriptions of many of them may be found in all the veterinary journals, including allusions to their appearance. The following came to the clinic of Prof. Vachetta, of Turin, and is recorded as a contribution to the literature on the subject: In a mare of twelve years a growth began four months before the observation, and grew rapidly. The mare had a very hairy tail, but it was hairless where the growth occurred. This has ulcerated and is as large as a hen's egg; it is perform in shape, and is on one side of the organ, about fifteen centimetres from the base. Sarcoma was diagnosed, and amputation of the tail ordered, which was performed by the flap method. An antiseptic dressing was applied, and cicatrization was secured by first intention. The growth had not returned five months after the operation. The histological examination revealed its nature to be one of sarcoma, with small round cells."

PURPURA HÆMORRHAGICA.

BY WM. R. HOWE, V. S., DAYTON, OHIO.

Read before the Ohio State Veterinary Medical Association, January 18, 1905.

I am listed to-day for a paper on purpura haemorrhagica, but we will not call this an essay, it is only a suggestion. Purpura is a disease or morbid condition, well known to all present: so well that it is not necessary to discuss it. There is little said by authorities on the pathology, but we do know that it is the condition that usually follows influenza, or some debilitating disease; that it is usually recognized by more or less extensive swelling in various parts of the body, with more or less weeping or oozing of blood or bloodish serum through the skin on the site of these swellings; that there is a loss of red blood corpuscles, and a lack of coagulating matter in the blood. Also petechial spots are shown on the mucous membrane. We know that it is a progressive disease, and that it is frequently fatal.

There are many known and recognized forms of treatment. I believe that there is now a toxine treatment that has been used with varied success.

The treatment that I propose is, so far as I know, new. With it I have had better success than with any other form of treatment I know. I have treated seventeen cases with but two deaths. These cases have all made a much more rapid recovery than I have ever known under any other form of treatment. The treatment I suggest is spirits of turpentine in large doses, covered with oil. I usually give two ounces of spirits of turpentine in from four to six ounces of raw linseed oil, followed by an ounce or ounce and a half twice a day until swelling and haemorrhage are checked, then once a day until complete recovery.

Turpentine is a stimulant, astringent, diuretic and antiseptic. I believe it is a natural remedy in this condition; I am quite confident that if followed will give excellent results. Spirits of turpentine is cheap, therefore seldom adulterated, but can be improved in its medicinal action by the addition of one-eighth of its volume of alcohol. This dissolves any resinous bodies that may be left in the solution.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

ANTE-MORTEM BLOOD CLOT IN A HORSE.*

By DR. L. L. DILLER, Iowa.

On March 19, 1904, I was called about five in the afternoon to see a sorrel gelding, owned by Dave Lauterman, living four miles west of Grundy Center, Iowa. When I arrived I found a horse about twelve years old and in good flesh. He had great difficulty in breathing, seemed very anxious and uneasy and at times he would hold his head low in the manger and close his eyes. The jugular pulse was very marked and the jugular looked nearly as large as a broom handle and very tense. The legs were cold and seemed to have poor circulation in them.

I diagnosed congestion of the lungs. The history of the case was that the horse had never had a sick day before as far as the owner knew. He had been hauling shelled corn from a neighbor's place to town the day before, and as the roads were very muddy he had pulled the team rather hard, but did not think he had hurt them. There was a chilly March wind that day and the horse was allowed to stand in it and wait for his load of corn. The owner thought there was a puddle of water where he stood and believed that standing in the water had chilled him. The horse seemed uneasy about noon of the day I was called and had not eaten his dinner.

I had the horse turned loose in his stall, had his legs wrapped in flannel and put a blanket on him. Gave digitalis, belladonna, cannabis indica, and so forth, but got but little results, at least only improvement in the lung symptoms. The horse seemed to ease up some on the cannabis indica.

I began to feel that I had made a wrong diagnosis and commenced to figure out why the jugular pulse was so pronounced, but could not change my diagnosis, unless there was a stoppage in the circulation somewhere.

I stayed with the horse until eleven o'clock, when he seemed a little better and quiet. I left two men with the horse to watch him and give medicine. I told the owner it was a bad case and

*Read before the Iowa State Veterinary Medical Association, Jan. 25-26, 1905.

I thought a hopeless one, and if they thought he was worse at any time to call me again. I was not called again until the morning, when the owner of the horse 'phoned me that the horse was dead, and that he had died very suddenly in the night.

He had been quiet for some time and the men attending him had spread a bunch of hay behind the horse in the back part of the stall, and one had laid down on the hay and gone to sleep, while the other sat up watching the horse. The owner said the horse seemed better after I left and was comparatively quiet, when all of a sudden he raised his head and whinnied, and sat back on his haunches and was dead. The horse in falling fell on the man lying behind him, and if he had been a foot nearer the horse would have killed him. Let this be a warning to us in attending horses in small stalls.

I was interested in the case and told the man not to bury the horse until I came out. I went out and held a post-mortem on him by opening along the median line and up the ribs, so as to expose the lungs. They seemed somewhat congested, but not so much as I had expected. I then opened the abdomen further back and examined the organs in it. There seemed to be little or no disease in this part of the body, so I removed the lungs and made a more careful examination of them. I found nothing abnormal except clotted blood and a rather reddened appearance. I then removed the heart, which seemed to be contracted and rather hard. On slitting open the left auricle I found a clot of blood walled up in a ball-like mass about the size of a hen's egg. I took this out and placed it in a basin of water and found that it unfolded and showed a branched form, and was white in color. I looked for other clots, but found none, and explained to the owner what had killed the horse and that I thought nothing could have been done to save him. I took the clot home with me and mounted it and the branch form can be easily seen.

HELPING THE PROFESSION ALONG.—We notice a very readable account of the late meeting of the American Veterinary Medical Association in the *Breeder's Gazette* of August 23, and from the initials signed to it we suspect our friend, Dr. W. H. Dalrymple, of Louisiana, to be its author. This loyal veterinarian never permits an opportunity to escape him where it is possible to dignify his profession and to keep it prominently before the public. May others follow his good example!

ARMY VETERINARY DEPARTMENT.

THE VETERINARY BILL AND THE A. V. M. A.

In the report of the recent meeting of the American Veterinary Medical Association at Cleveland, Ohio, will be found a ringing set of resolutions, praying the President of the United States to give an attentive ear to the plea of the veterinarians in the Army. The adoption of the resolution carries with it instructions to the President of the Association to appoint a committee to seek an audience with President Roosevelt and to deliver the memorial into his hands, and to personally urge him to approve the measure.

ARMY VETERINARY NOTES.

CHAS. H. JEWELL, Vet. 13th Cav., arrived at Fort Riley, Kansas, Aug. 19, from Manila (July 15), where he is detailed as Instructor in the Farriers' and Blacksmiths' Schools.

THE months of August and September constitute the season of marches, camping and manœuvring in the Army, and our military colleagues are nearly all absent from their garrisons, either in camps of manœuvre or for target practice of artillery.

SOME changes of stations of cavalry regiments, just announced by the War Department, will bring about an exchange of several army veterinarians between the States and the Philippines. The 4th Cavalry is to embark for foreign service by the end of August, which would take away Drs. Plummer and McKibbin, but it is hoped that Dr. Plummer will be retained at Fort Riley, Kan., in his position as senior instructor at the school for farriers and horse-shoers, a position which he has filled so well during the last three years. The 3d Cavalry will embark in November, which takes Dr. Schwarzkopf away from the States. With the return of the 14th and 2d Cavalry from foreign service, Dr. Peter, 14th Cavalry, and Drs. Lusk and English, 2d Cavalry, will arrive home for a well-earned change to a more congenial and healthy climate.

MOVEMENTS OF ARMY VETERINARIANS.—The following changes in the stations and duties of veterinarians are ordered by the War Department under date of July 18: Veterinarian Lester E. Willyoung, A. C., upon the completion of his duties

with the 2d Provisional Regiment, Field Art., will proceed to Fort Riley for duty in the Training School for Farriers and Horseshoers and with the Field Artillery batteries at Fort Riley for a period of one year, relieving Veterinarian Richard H. Power, A. C. Veterinarian Power will proceed to Fort Sam Houston, Texas, for duty with the 2d Battalion, Field Art. Veterinarian Charles H. Jewell, 13th Cav., upon his arrival in San Francisco, will proceed to Fort Riley, for duty at the Training School for Farriers and Horseshoers for a period of one year, relieving Veterinarian John H. Gould, 11th Cav., who will join his regiment.

THE STATUS OF THE VETERINARIAN IN THE ARMY.—The War Department has received many complaints from contract surgeons against the ruling that they are not entitled to campaign badges to be issued for war service except when they perform service as an officer or enlisted man. The attention of the Department is called to the fact that under the orders of the Secretary of War veterinarians are, however, entitled to wear such badges and it is claimed by the contract surgeons that they have been unjustly discriminated against. In some interesting opinions on this subject the Judge Advocate General of the Army goes extensively into the status of a contract surgeon and a veterinarian. He calls attention to the fact that the issue of campaign badges is restricted in General Orders No. 4, 1905, to "officers and enlisted men in the Service" and the right to wear them is restricted to the "officers and enlisted men to whom issued," and it is his opinion that under existing orders a contract surgeon would not be authorized to receive, or to wear a campaign badge even though his service had been such as to entitle him to receive it. "Paragraph 61 of the Uniform Regulations," Judge Advocate General Davis says, "is sufficiently broad to authorize a contract surgeon to wear the campaign badge, but his right to do so is defeated by the restrictive language which is used in General Orders No. 4. If it be thought proper that the campaign badge should be issued to and worn by contract surgeons whose service has been such as to entitle them to it, that end can be obtained by such a modification of the requirements of General Orders No. 4 as will bring it into harmony with Paragraph 61 of the Uniform Regulations." General Davis, with regard to the status of veterinarians, calls attention to Section 2 of the Act of Feb. 2, 1901, which establishes the office of veterinarian in each regiment of Cavalry therein provided for. "A subsequent section of the same enact-

ment fixes the pay and allowances of the office so established," he says, "by requirement that the veterinarians thereinbefore authorized shall receive the pay and allowances of second lieutenants mounted. The office so established is a military office which vests in a particular appointee as the result of an exercise of the appointing power; which is vested in the Secretary of War by Paragraph 200 of the Army Regulations of 1901. Veterinarians are not commissioned officers because their appointments are not made by the President with the consent of the Senate, and are not evidenced by commissions signed by the President; but they are provided with appointments in writing signed by the appointing power, and in all matters relating to pay and allowances, including the clothing allowances, they are assimilated to commissioned officers. It is therefore the opinion of this office that they are entitled to wear the distinctive badge for service in campaign and should be furnished with the badge at cost price."—(*Army and Navy Journal*.)

INFECTED WHILE INJECTING TUBERCULIN.—While testing some dairy cows recently Dr. Richard P. Lyman, of Hartford, Conn., met with an accident that laid him up for ten days or a fortnight. Dr. Lyman was injecting a cow with tuberculin when she kicked wickedly, driving the needle of the syringe through the Doctor's thumb. It is not certain whether some of the tuberculin went into his thumb or not. The wound, however, became infected and blood poisoning set in, and the Doctor was soon a very sick man. We are glad to be able to state that he has made a good recovery.

PROCEEDINGS OF THE CENTRAL CANADA ASSOCIATION.—We have received the printed proceedings of the third annual meeting of the Central Canada Veterinary Association, held at Ottawa, Feb. 8 and 9, 1905. It contains the Constitution and By-Laws, the minutes of the meeting, the papers read and the discussions thereon, together with a list of the active and honorary members. It is edited by the Reporter, Dr. Chas. H. Higgins, Ottawa.

THE NEW EMPIRE STATE EXAMINING BOARD.—Governor Higgins has selected the following five gentlemen from the list of ten given him by the State Society to act on the Board of Veterinary Examiners for New York:—E. B. Ackerman and C. E. Clayton, of New York City; Thomas F. O'Dea, of Saugerties; William H. Kelly, of Albany, and A. G. Tegg, of Rochester.

SURGICAL ITEMS.

BY L. A. AND E. MERILLAT, CHICAGO.

1. *The Merit of Tetanus Antitoxin* as a preventive against tetanus was recognized by veterinarians as early as eight years ago. During the past five or six years it came into general use in the veterinary profession, which circumstance gives to us the credit of demonstrating its worth, as it is only during the past twelve months that the human surgeon has given much attention to this valuable prophylactic agent.

2. *Post-Operative Pneumonia*, with a wider application of surgical operations to the cure of domestic animal diseases, the subject of post-operative pneumonia becomes more and more important. The susceptibility of animals to pneumonia from surgical operations, while not as great as in the "weak-lunged" human being, is sufficient to give the veterinary surgeon who operates a nominal number of cases of this character, and hence warrants some attention. Post-operative pneumonia is always serious and more often fatal than other forms of the disease. The causes leading to the disease are as follows: (1) The aspiration of foreign or putrid matter into the air passages; (2) haemorrhage into the lower air passages; (3) the irritation of inhaled anaesthetics; (4) emboli flowing into the lungs from ligated veins; (5) exposure to drafts or cold of animals recently debilitated by an operation; (6) exposure of animals to infectious diseases of the air passages, prior to or soon after operations. The prevention of post-operative pneumonia must vary with the probable cause. Aspiration of insulting matter into the lungs must always be taken into account as a possible accident of operations performed in the recumbent position, and especially when an anaesthetic is administered. In the ox regurgitated ingesta in large quantities may find its way down the trachea; the dog may vomit and aspirate the mass into the lungs; and the horse is always liable to inhale pus, blood, saliva or medicants when operations are performed along the course of the air passages; blood in any considerable quantity must in some manner be prevented from finding its way downward into the lungs. Anaesthesia must not be unnecessarily prolonged and must be avoided in susceptible subjects. Animals subjected to the trying ordeal of a painful operation must be well cared for by keeping the body warm and comfortable, which precaution will also limit, if not prevent, pneumonia from emboli.

3. *Appropriate Appliances to Secure Patients* should not be wanting in a veterinary surgeon's equipment. A shoemaker without a bench or a blacksmith without a forge is no worse off than the veterinarian without the standard apparatuses to restrain his patients. What is meant by "standard apparatuses" is: (1) An operating table for hospital operations; (2) a casting harness for field work and for operations that cannot be performed upon the table, *i.e.*, cryptorchid castration, herniotomy, etc.; (3) a side-line for "standing" operations; (4) a table for canine and feline operations.

4. *The Surgical Clinic at the Cleveland Meeting*, thanks to the local committee of arrangements, exceeded the highest expectations. The roomy place, the various methods of restraining patients, the seating arrangement, the variety of instructive cases, and the humane and skilful methods of operating, proved more than satisfactory to all who were fortunate enough to attend. Those who are specially interested in the advancement of surgery will join with the masses and laud this clinic, but will continue to guard against the recommendation of some past clinics the A. V. M. A. has stamped with approval. Let us hope that future committees may be able to follow the example set by the local committee of arrangements at Cleveland.

A PECULIAR CASE [*Andrew E. Donovan, D. V. S., Veterinarian A. C., Vancouver, Barracks, Washington, in "Western Veterinarian"*].—A two-year-old stallion was brought to me on the eighth of April, with a discharge of pus from the scrotum. About a year before he had been placed at pasture on an old logging ground, and when taken up three months later was very emaciated. After feeding well on a grain ration he took on flesh and although the owner noticed a discharge at that time he did nothing concerning it. The animal being cast, examination revealed a tubular formation in the median line of the scrotum between the two testicles. This was about four inches long and discharged a large amount of pus. A probe inserted stopped at a hard foreign substance. The animal was anaesthetised and the tube split with a straight bistoury, making an opening about an inch long through the skin and running the entire length of the tube. I inserted forceps and after some manipulation removed in two parts a piece of charred Oregon fir two inches by one and one-half inches by one-half inch. After irrigation with an antiseptic solution the animal was released and made a speedy recovery.

EXTRACTS FROM EXCHANGES

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M. D., V. M.

A CALCULUS IN THE SMALL INTESTINE [*W. Barling, M. R. C. V. S.*].—The presence of a calculus in that portion of the intestinal tract is rather a rare occurrence. It was found in a stallion which had colicky pains, received colic draughts without result, and notwithstanding subsequent treatment of chloridine and cannabis indica, of morphia and atropine, chloral administrations, sedatives, fomentations, etc., finally died. At the post-mortem the stomach was found distended with fluid and gas. The small intestine was inflamed, and in it there was found a calculus weighing 1 lb. 7 oz. The author says: "It is difficult to imagine the obstruction to have formed there and it is almost more difficult to think that it could have moved forward from the large intestine. A portion of the jejunum was bulged and thin, where no doubt the calculus had rested for some time, as it was found some three or four inches posterior to this and almost two feet from the stomach.—(*Vet. Record*, March 11.)

LIGHTNING STROKE IN ANIMALS [*James Smith, M. R. C. V. S.*].—A previous article on the subject suggests to the writer the propriety of recording this "outbreak of lightning stroke." One day a severe thunder storm occurred, and after a particularly vivid flash of lightning the author said to a friend that possibly he would hear of some damage done by it. The following morning he was called to a mare, down in a field and unable to rise. Her head was enormously swollen as in a bad case of purpura, dark colored blood oozed from her nose; she laid with her chin resting on the ground. The mucous membranes were livid color. The breathing stertorous, pulse imperceptible. The mane behind the poll was distinctly singed. Diagnosis, struck by lightning. The animal was destroyed. An hour later, the author was called to see a dead horse on a wide unprotected pasture, where he had been turned out. He had a distinct punctured wound penetrating the chest, about six inches behind the shoulder. The wound was the size of a florin and its edges distinctly charred. A few minutes after he

was called to another dead horse. This one had tried to shelter himself under a hedge and had been knocked through the hedge and across a dyke into the next field. He showed no signs of lightning stroke. These three cases were in a direct line from north to south, the direction followed by the flash, and about one mile and a quarter the distance between the outside cases. In a professional point of view, it is to be regretted that no careful post-mortem examination was made, but the history of the cases, the condition of the bodies and the surroundings seem to warrant an opinion as to the cause of death.—(*Vet. Record, March, 1905.*)

POLYPUS OF UNUSUAL SIZE EASILY REMOVED (*J. A. Meredithe*).—A black charger, seven years old, is examined, and a sloughing growth is detected in the near nostril situated a little distance up. Taking hold of the mass it gradually comes down and drops in the hands of the writer. A small haemorrhage follows, the animal coughs some, but soon everything returns to its normal condition after the use of a few cold douches. The mass proved to be a large polypus, which measured 11 inches in its peduncle. The horse was not a roarer; he had a queer temper previous to the removal of the polypus; now he is perfectly quiet and does his work well.—(*Vet. Record, March, 1905.*)

HÆMATURIA IN A BULL FOLLOWING RUPTURE OF RENAL VESSELS [*H. A. Reed*].—At the Serum Institute of Cairo an Egyptian bull was kept to furnish rinderpest serum; he had already furnished forty-four litres of his blood to that effect, when one day, as he was going to be bled, it was noticed that he passed blood in the urine, blood which coagulated rapidly. As he seemed otherwise in good health, no special treatment was directed. A few days later the hæmaturia had ceased and it was supposed that the animal was well. Two days later blood reappeared. As the animal was losing in condition, he was bled to death for serum. At the post-mortem it was found that severe internal haemorrhage had taken place. The bladder was distended and completely filled with blood. On removal of the right kidney, the capsule was found separated from the organ by a blood clot two inches thick. There were small haemorrhages in the medulla of the gland. The renal vessels were dissected with difficulty, but no definite rupture could be described. The right psoas muscles were also blood stained and softened.—(*Vet. Record, April, 1905.*)

ABNORMAL INGUINAL OPENING—ESCAPE OF INTESTINE—

RECOVERY [*A. Maynard, M. R. C. V. S.*].—The author has castrated about 30 ridglings and has never met with such a condition. A four-year-old horse is to be operated upon. Cast and secured, no testicle is detected on the right side; that of the left is largely developed. The skin is divided and a large quantity of fat is found over the right inguinal canal, and instead of the ordinary opening with strong pillars formed by the oblique abdominal muscles, nothing is found but a large slit extending from one commissure to the other. The hand, introduced in the abdomen, feels for the testicle; none is found; the horse struggles, and an enormous mass of the single colon escapes. With great difficulty it is returned into the abdomen, after careful washing, and the opening closed as well as possible with carbonized catgut. Desirous to finish the operation, the writer looked for another opening, and midway between the prepuce and the inguinal canal he found another slit, similar to the first, but smaller, and right beside it the testicle, which was removed with the ecraseur. The abdominal opening was closed, the wounds packed with oakum dipped in creolin solution and the skin stitched with silk. The same evening the horse had high fever, but the next morning appeared more comfortable. Convalescence followed its course, and the animal recovered in comparatively short time.—(*Vet. Record, April, 1905.*)

ACCIDENTS FROM BEING CAST IN STALL.—*Dislocation of the Tibio-Astragaloid Joint [W. A. Schofield, Lieut., A. V. D.]*.—A horse was reported as having broken its leg during the night. He was found lying on the off side with the heel of the near hind shoe caught fast in the head collar. The collar was cut and the leg released, when it was found to be broken. There was a complete compound dislocation of the tibio-tarsal joint of the near leg with the lower end of the tibia protruding through the skin. The animal had no disease of the bony structure and must have struggled considerably to produce such lesion. *Dislocation of the Cervical Vertebrae—Recovery [H. Mole, M. R. C. V. S.]*.—Found cast in his stall, early in the morning, he is unable to get up by himself, but does so with help, when his neck is observed to be twisted in a peculiar position. The head was pendulous and swung from side to side. In walking the horse knuckles over on the hind fetlocks. The curved condition of the neck indicates that it is due to the fourth or fifth cervical vertebra. “A thick woollen rug was bound round the neck, enclosing a short length of board, and one of the attendants instructed to hit a sharp blow at the spot indicat-

ed,* at the same time pulling firmly on the head by means of head stall." This was done, the blow staggered the horse, he fell and a sharp click was heard. The horse laid down for two hours, then gradually lifted his head, and got up with a slightly sore but straight neck.—(*Vet. Record, April, 1905.*)

BELGIAN REVIEW.

By Prof. A. LIAUTARD, M. D. V. M.

DIAPHRAGMATIC HERNIA OF THE RETICULUM IN A COW—
CHRONIC TYMPANITES AND PSEUDO-PERICARDITIS [*Prof. Lienaux*].—The cow is six years old; for a few weeks she has suffered constantly with tympanites and eats poorly. She is indeed in very poor condition. The following symptoms are observed: pulse weak but normal in frequency; mucous membranes pale; jugular veins at intervals are largely developed and prominent: there is no œdema or swelling of the lymphatic glands; temperature around 38° C; sublumbar glands normal to the touch by rectum; there is permanent not excessive tympanites; faeces normal. The respiration is very slow; exaggerated sound indicates emphysema. The heart's beatings are felt on the right but are imperceptible on the left. There is no cardiac dullness; but on the contrary, dullness on the lower third of the right costal region. The beatings are absent on the left and well heard to the right. These symptoms are resumed in chronic tympanites and troubles about the heart. As the animal is very low she is destroyed. At the post-mortem there was found an infrapericardial tumor, formed by a portion of the reticulum, which was protruding in the thorax through two circular rings of the diaphragm—one situated on the median line immediately above the sternum, the other more on the left. The portion of the organ passed through the first opening was as big as a child's head, that through the second ring as large as the fist. The fibrous and regular borders of the rings were adherent to the protruding organ. The meteorism was easily explained and another cause can be added to the list of those that give rise to it, viz.: diaphragmatic hernia of the reticulum.—(*Annales de Bruxelles, March, 1905.*)

THE INFLUENCE OF PREGNANCY UPON THE APPARITION

* (Where the spot was, is not mentioned by the writer of the article.)

OF CHRONIC HÆMATURIA IN BOVINES [M. Delcroix].—In 1902 the author was called to visit a ten-year-old cow which was urinating blood. She was in good condition, eight months pregnant. The hæmaturia appeared some six weeks or two months before. The same symptom was observed the year before, sometime before delivery. At that time the urine was only tinted red and the trouble passed away as soon as delivery took place, but now the coloration of the urine is much more marked ; simple tonics were prescribed, with no result. The cow delivered a calf in due time and the hæmaturia subsided at once. Fearing another repetition of the trouble the cow was not taken to the bull the next year, but in that following, she again became pregnant, and the hæmaturia symptoms reappeared in the fifth month, and the animal lost condition so fast that she had to be destroyed. Since this case the writer has had several others, and it is not an uncommon thing for him, when inquiring among his clients as to the frequency of this accident, to have had the same answer : "This is nothing, our cow makes blood when she is in calf, but we pay no attention to it, as it passes off as soon as the calf is born."—(*Annales de Bruxelles*, April, 1905.)

LARYNGEAL ECCHONDROSIS IN A HORSE THAT HAD HAD STRIDULENT LARYNGITIS [A Vanden Eeckhout].—The observation was made on an old mare. She suffered some ten years ago with stridulent laryngitis characterized by loud roaring. When the acute symptoms subsided she remained a roarer, but was, however, able to perform a certain amount of work. She died by intestinal strangulation. At the post-mortem the larynx was carefully examined and presented the following lesions : The right arytenoid cartilage is thickened in its whole extent and its internal face is the seat of a hard swelling, elongated and having the shape of a cone. This swelling is three and a half centim. in length and is half a centimetre thick. It forms a kind of growth ending by a rough and projecting tubercle, which is in contact with the opposite arytenoid. The mucous membrane of both cartilages has lost its epithelium and is rather roughened. The right vocal cord is more prominent and the right lateral ventricle is largely developed. The anterior opening of the larynx is irregular. And considered by the subglottal portion it is observed that this is narrowed and that there remains but a small slit, due to the obliquity of the left cartilage and the right occupying half the laryngeal canal. In the lower part the tubercle is observed passing beyond the me-

dian line. The aspect presented by the glottis and the subglottal cavity explained the roaring produced by the tumor, which on minute examination presented the characters of fibro-cartilaginous texture—it was an ecchondrosis. The muscles of the larynx were free of lesions and they were not atrophied.—(*Anales de Med. Vet.*, June, 1905.)

THORACIC TUBERCULOSIS—SIGNS OF PSEUDOPERICARDITIS IN A COW—TUBERCULOUS PERICARDITIS [*E. Lienaux*].—This heifer has no clinical history. Her appetite is good and the digestive functions are perfect. However, minute examination revealed respiratory and circulatory troubles. Her respiration is accelerated (48), she has a dry and strong cough; there is no nasal discharge. Percussion indicates bilateral dullness in the lower part of the chest, a little less marked on the right. Auscultation gives on both sides loud moist râles. The heart is felt beating on the right more than usual; it is not on the left side. Jugular veins are dilated; there is no œdema. Prescapular and mammary lymphatic glands are swollen. Temperature varies between 39.5° and 40° C. Tuberculin gives a negative result, but without it there was no doubt of the diagnosis of tuberculosis. At the autopsy were found a massive tuberculosis of the anterior and middle lobe of the left lung and pleura, with big tubercular products uniting the parietal and visceral layers of the serous membrane. There was also an enormous tuberculous abscess in the lung and pressing against the pericardium, which is pushed to the right. The pericardial cavity is filled with tuberculous products, forming between the layers a complete synechia, two centimetres thick. The heart was small.—(*Anales de Med. Veter.*, June, 1905.)

THE color of milk is a poor guide by which to determine its richness. In many cases it is very misleading.—(*Wagg.*)

DR. FENIMORE, of Los Angeles, Cal., holds the record for colic cases; over thirty in one day.—(*Western Veterinarian*.)

Dr. JAMES MCKEE, of Stapleton, S. I., died recently. He was a graduate of the New York College of Veterinary Surgeons and was a member of the A. V. M. A.

DR. R. T. WHITTLESEY, of Los Angeles, Cal., reports that he has used spelterine, or white rock hoof packing, in the treatment of pneumonia with splendid results. He covers the sides of the chest an inch thick and over this several layers of cotton and a many-tailed bandage.

SOCIETY MEETINGS.

AMERICAN VETERINARY MEDICAL ASSOCIATION.

The forty-second annual meeting convened in the large Assembly Room of the Hollenden Hotel, Cleveland, Ohio, at 10 o'clock A. M. on Tuesday, Aug. 15, and was called to order by President M. E. Knowles, of Montana, who in a few words introduced Hon. Tom L. Johnson, Mayor of Cleveland. The world-wide chief executive welcomed the large gathering to his city in the most cordial words, expressing the greatest confidence in the future of the profession, though acknowledging that his own heart had gone over to the automobile for pleasure riding. No meeting of the A. V. M. A. ever occurred with so many members and visitors in their seats at the drop of the gavel; a large number of ladies and children witnessing the ceremonies. At the conclusion of the Mayor's address, the President called upon Dr. Roscoe R. Bell, of New York, who, addressing the host on behalf of his colleagues, warmly thanked the citizens of Cleveland for their hospitality, and gave a short sketch of the status, aims and ambitions of the National Association.

President Knowles then read his annual address, which was as follows:

THE PRESIDENTIAL ADDRESS.

"*Gentlemen :*

"The field of advice, suggestion for the betterment of the veterinary profession of America, even the rapid progress of our profession has been so ably covered by my learned predecessors that it is extremely difficult to find a new theme of even passing interest for discussion. You are all cognizant of the necessity for improving educational facilities in a number of our colleges, and I am pleased to say progress in this direction is being slowly but certainly made, largely, if not wholly, through the untiring efforts of this Association. The general condition of prosperity of the profession in America has never been so good as it is to-day, and there is every reason to believe that the usefulness of the veterinarian is increasing rapidly as the lay public more fully recognize the value of the educated veterinarian's services, not merely as a practitioner alleviating the suffering of our domestic animals, but in the still higher sphere of the sanitarian.

"The value of the veterinarian as a sanitarian is inestimable,

particularly relative to the prevention of disease, suffering and death among the human family by the prevention and repression of animal disease communicable to man. While his mission as a practitioner is a most noble one, the part he plays in preserving human life is far more important. To be better able to be of greater service to humanity, every veterinarian should make a close study of comparative medicine, and, particularly, inform himself as to the symptoms in man of the various well-known communicable animal diseases, notably glanders, since this of all animal diseases communicable to man is so infrequently recognized by the average practitioner of human medicine.

"The transmission of milk-born diseases should receive no little attention from the veterinarian, to the end that he may be the prime factor in the prevention of numerous child-destroying diseases.

"The cultivation of the friendship of the human physician in the sphere of your practice, and the frequent discussion of animal-born disease, will be of mutual benefit and redound to the advantage of public health. Keep always in mind the necessity for and nobleness of preventing the dissemination of animal disease communicable to man and the preserving of human life, not neglecting the fact that this grand accomplishment has, so far as the animal is concerned, both the humanitarian and commercial view point.

"During the past year Pennsylvania has recognized the importance of the veterinarian as a sanitarian by making our distinguished colleague, Dr. Leonard Pearson, a member of the State Board of Health. I congratulate Pennsylvania on the exercise of such an excellent selection.

"It is largely within our power to see to it that every State in the Union has upon its board of health a capable veterinarian. Let us make vigorous efforts in this direction by a strenuous attempt on the part of each member of our Association, and collectively, to show the medical profession and the lay public the important relation of animal disease to public health. Nothing will contribute to your success and standing more than to make yourself indispensable to your fellow-man. Is there a better method of so doing than by protecting his health?

"A number of our States now have fairly good live-stock sanitary laws that are being intelligently and vigorously enforced, which means that much good is being accomplished toward the prevention and repression of contagious and infectious animal disease.

"Our Bureau of Animal Industry, under the efficient direction of Dr. Salmon, is doing a great work and rapidly increasing its scope, giving position and standing to a large number of veterinarians.

"The veterinary sanitary service of Canada under the direction of that most progressive veterinarian, Dr. Rutherford, has made wonderful strides during the past few years under his capable direction, and is giving desirable positions to numbers of capable veterinarians.

"A connection with the sanitary service of a Federal, State, or Municipal government tends to give standing and position to the individual and certainly enhances the value of our profession as a unit; but the individual practitioner must obtain social and commercial position through his own effort, which I again say he has within himself to do, largely by convincing the public through deeds of worth and value of being necessary to their welfare.

"It is believed some advance has been made toward army legislation. I certainly trust this is true. We, as an association, must continue to make every endeavor in our power to the end that the veterinary service in our army at least equals that of the armies of England, Germany and France. It is much to be regretted that ours, the most progressive nation in the world today, is the only one refusing to give rank and properly deserved recognition to our veterinary service in the army.

"Feeling that it was fully the sense of the Association, and acting by and with the advice of your Executive Committee, at the urgent request of Ex-President Bell and many other members of our Association, I signed a warrant immediately after our 1904 meeting, for \$100, as a contribution to the Nocard Monument Fund. You will remember that Dr. Bell made a strong plea for such action on the part of the Association in his annual address, but unfortunately the matter was overlooked during the rush of business incident to our 1904 meeting, and was unfortunately neglected. I fully believe that it was the unanimous opinion of the Association that this slight contribution on our part should be made to the memory of this most distinguished member of our profession, not alone because he was an honorary member of our Association, but on account of his most valuable work and contributions to veterinary literature. I trust the Association will sustain my action.

"I would suggest, upon the recommendation of the Chairman of the present Programme Committee and the advice of our ex-

cellent Secretary that the Programme Committee be abolished, and that the work be, as it was prior to this year, left in the hands of our efficient and capable Secretary.

"I cannot close this brief address without some reference to that distinguished American citizen and patriot, the Mayor of this beautiful city.

"We have the good fortune to meet this year in what is not only one of the most beautiful of the many beautiful American cities, but, what is of far greater importance to the citizen, in what a writer who knows says is the best governed city in the United States. That writer, Lincoln Steffens, attributes the excellent and most honest government of this city to the magnificent civic spirit of its people, led by Mayor Tom L. Johnson. As members of a scientific profession we should take a more than passing interest in Mayor Johnson, his methods and his position among the wealthy men who take an active part in what we call politics.

"We are more than professional men. We are citizens, and were citizens before we were veterinarians. As members of a scientific profession we owe to the State the duty of standing for what is best and most scientific in the great organization that we call 'Government,' and we may learn a valuable lesson from the career of Mayor Johnson. Possessed to an unusual degree with the ability to get money, his civic spirit and his love for his fellow-men have prevented him from degenerating into that most worthless type of the animal creation, a mere human machine for collecting dollars. I am aware that Mr. Johnson is spoken of as a 'crank' by many of his fellow-citizens; but what man in all history who had ideas for the elevation of the human race has not been called a crank? In my State and in other States men have been called cranks and fools because they refused to sell their votes as citizens or as legislators.

"Of Mayor Johnson it cannot be said that he is content to collect dollars, and that having collected them he is indifferent to the needs of his city, his State and his fellow-men. So, let it not be said of us that we are content to exist as mere collectors of fees for our professional services, and that having got our fees we are indifferent to the welfare of our cities, our States and our country. As members of a scientific profession we should recognize the fact, as citizens, that there is a Science of Government, and that otherwise government would have no right to exist, just as we recognize the fact that Veterinary Medicine has no right to exist except as a science. Mayor

Johnson had a national reputation before he became mayor of Cleveland, but as mayor of this city he has made a new national reputation, because in practice as in theory, he refuses to uphold unscientific methods in government.

" Let us, then, as workers in our Science, refusing to uphold unscientific methods in our profession, stand firmly against unscientific methods in the greater and more important field of government. Let us recognize such men as Mayor Johnson as our co-workers in science. We will add but little to the progress of humanity if we confine our efforts to the prevention and cure of the diseases of animals, and neglect the diseases of our civil, our political life. We add to the wealth of the Nation by preventing and curing the diseases of dumb animals, and whether or not we have the same beliefs as Mayor Johnson, let us stand with him in his efforts to prevent and cure the ills of society, and thereby add still more to the wealth of the Nation and to the happiness of mankind, for whatever may be a man's profession, he is the best citizen who follows truth wherever it may lead, and in the light of truth recognizes the diseases of civil government and insists that scientific methods shall be used for the prevention and cure of those diseases.

" Do not understand me as urging you to become politicians, but as members of a scientific profession to take your proper position as scientific men among the real benefactors of mankind. Your reward may not appear in your bank books, but it will be none the less sure, in the greater esteem of your fellow-men and the approbation of your conscience. By pursuing an entirely different course, Mayor Johnson would, I believe, now be counted among those who count their wealth in nine figures ; but I do not believe he would exchange his reputation as the best mayor of the best governed city in America for the ability to count his wealth in ten figures.

" While we are practicing the best methods of dehorning cattle, let us learn and practice the best methods of dehorning the grafters that trouble society. As year after year we practice the dipping of cattle to eradicate the parasites that infest them, let us learn and practice the art of freeing society from the social parasites that feed upon it. Let us keep in mind the fact that he is not a good citizen who does not give back to society as much as he gets from society, who does not render to his fellow-men a full equivalent for every service that they render to him. That is one of the valuable lessons that we may learn from the mayor of this city, who considers himself merely the chief ser-

vant of this great municipality, which has 150,000 more population than the State in which I live.

"Coming from the State of Montana, the third in area of all the States, sparsely populated, and living in a city that has less than 15,000 people, very naturally I take an interest in the splendid city in which we meet—in its immense buildings, its broad streets teaming with life and business, its beautiful residences, and all the material things that together make what we call a great city. But, after all, the object of most interest to me, the chief exhibit of this Queen City of one of the greatest and most progressive States in the Union, is Mayor Johnson, who is devoting his wealth, his energies and his great business abilities to the betterment of government, of citizenship and of humanity. Gibe, jeer and jest do not turn him from his purpose, defeat does not dishearten him, success has not made him autocratic, scandal has not smirched him, money does not tempt him from his purpose, and those who conspire against their fellow-men do not ask him into their councils.

"I say these things to you, representatives of a scientific profession, because what Mayor Johnson is doing for good government in Cleveland will in the end inure to your benefit as citizens of a great country. You and your children, on the Atlantic or the Pacific coast, in the South, in the Mississippi Valley or in the Rocky Mountains, will in the future reap benefits from the seed that Mayor Johnson is sowing in Cleveland. We will be benefited by the service he is rendering to good and clean government, and we will fall short of our duty if we fail to render an equivalent service by standing for what is best in government, as we stand for what is best in our chosen profession."

As has been the custom for a number of years, the calling of the roll was dispensed with, and the attendance determined by registration cards furnished at the entrance, where badges were supplied to all members and visitors. The attendance was the largest in the history of the Association, and the list as supplied by the Secretary is as follows:

THE ATTENDANCE.

Members.

W. J. Armour, Goshen, Ind.

F. E. Anderson, Findlay, O.

John W. Adams, Philadelphia, Pa.

F. Abele, Quincy, Mass.

Francis S. Allen, Philadelphia, Pa.

- E. P. Althouse, Philadelphia, Pa.
S. Burrows, Cleveland, O.
M. C. Baker, Montreal, Can.
Tait Butler, Raleigh, N. C.
S. Brenton, Detroit, Mich.
W. W. Boucher, Ottawa, Can.
J. H. Blattenburg, Lima, O.
J. C. Burneson, Chicago, Ill.
Roscoe R. Bell, Brooklyn, N. Y.
Geo. H. Berns, Brooklyn, N. Y.
A. H. Baker, Chicago, Ill.
E. C. Beckett, Boston, Mass.
T. Earle Budd, Orange, N. J.
J. Black, Richmond, Mich.
W. L. Beebe, St. Paul, Minn.
Thos. Bland, Waterbury, Conn.
E. Burget, Wadsworth, O.
W. L. Baker, Buffalo, N. Y.
G. B. Blackman, Chatanooga, Tenn.
H. W. Brown, Columbus, O.
W. S. Cass, St. Louis, Mo.
T. Bent Cotton, Mt. Vernon, O.
A. E. Cunningham, Cleveland, O.
J. H. Crawford, Harvard, Ill.
Chas. E. Cotton, Minneapolis, Minn.
A. S. Cooley, Cleveland, O.
G. W. Cliffe, Upper Sandusky, O.
G. W. Dunphy, Detroit, Mich.
Wm. Dougherty, Baltimore, Md.
W. H. Dodge, Leominster, Mass.
W. H. Dalrymple, Baton Rouge, La.
H. Fulstow, Norwalk, O.
Paul Fischer, Columbus, O.
J. W. Groves, Hamilton, Ont.
S. H. Gilliland, Philadelphia, Pa.
G. D. Gibson, Adrian, Mich.
J. M. Good, Cincinnati, O.
J. T. Glennon, Newark, N. J.
D. Gorsuch, Glencoe, Md.
J. O. Greeson, Kokomo, Ind.
W. C. Holden, Delphos, O.
T. B. Hillock, Columbus, O.
R. H. Harrison, St. Paul, Minn.

- C. H. Higgins, Ottawa, Can.
C. H. Howard, Coldwater, Mich.
W. H. Hoskins, Philadelphia, Pa.
H. Hoopes, Forest Hill, Md.
J. G. Hill, Jacksonville, Fla.
W. G. Hollingsworth, Utica, N. Y.
G. A. Jarman, Chestertown, Md.
G. B. Jones, Sidell, Ill.
J. J. Joy, Detroit, Mich.
J. W. Klotz, Noblesville, Ind.
A. T. Kinsley, Kansas City, Mo.
G. C. Kesler, Holley, N. Y.
R: W. Kenning, Pembroke, Ont.
M. E. Knowles, Helena, Mont.
A. J. Kline, Wauseon, O.
James Law, Ithaca, N. Y.
G. Ed. Leech, Winona, Minn.
R. P. Lyman, Hartford, Conn.
E. L. Loblein, New Brunswick, N. J.
G. W. Loveland, Torrington, Conn.
W. H. Lowe, Paterson, N. J.
J. P. Lowe, Passaic, N. J.
R. Muir, Grand Rapids, Mich.
J. C. McNeil, Pittsburg, Pa.
D. McAlpine, Brockville, Ont.
W. C. McGuire, Cornwall, Ont.
M. H. McKillip, Chicago, Ill.
R. N. Mead, St. Paul, Minn.
A. E. Moore, Ottawa, Can.
R. J. Morrison, Detroit, Mich.
R. C. Moore, Kansas City, Mo.
C. J. Marshall, Philadelphia, Pa.
L. A. Merillat, Chicago, Ill.
H. J. Milks, Candor, N. Y.
J. H. McNeall, Ames, Ia.
S. D. Myers, Wilmington, O.
J. T. Nattress, Delavan, Ill.
O. G. Noack, Reading, Pa.
J. V. Newton, Toledo, O.
J. P. O'Leary, Buffalo, N. Y.
H. A. Presler, Fairbury, Ill.
E. C. Porter, New Castle, Pa.
E. W. Powell, Bryn Mawr, Pa.

- D. A. Piatt, Lexington, Ky.
J. M. Phillips, St. Louis, Mo.
A. T. Peters, Lincoln, Neb.
L. Pearson, Philadelphia, Pa.
C. H. Perry, Worcester, Mass.
E. L. Quitman, Chicago, Ill.
J. L. Robertson, New York.
J. Robertson, Chicago, Ill.
John J. Repp, Philadelphia, Pa.
J. G. Rutherford, Ottawa, Can.
M. H. Reynolds, St. Paul, Minn.
F. A. Rich, Burlington, Vt.
J. E. Ryder, New York.
J. F. Roub, Monroe, Wis.
G. H. Roberts, Indianapolis, Ind.
H. E. States, Detroit, Mich.
J. W. Scheibler, Memphis, Tenn.
F. H. Schneider, Philadelphia, Pa.
E. H. Shepard, Cleveland, O.
E. P. Schaffter, Cleveland, O.
N. I. Stringer, Watseka, Ill.
T. E. Smith, Jersey City, N. J.
W. Shaw, Dayton, O.
S. Stewart, Kansas City, Mo.
L. E. Tuttle, Bernardsville, N. J.
W. J. Tomlinson, Williamsport, Pa.
T. Thacker, Renfrew, Ont.
Z. Veldhuis, Fremont, Mich.
G. B. Vleit, Hackettstown, N. J.
W. L. Williams, Ithaca, N. Y.
O. G. Whitestine, Huntingdon, Ind.
S. H. Ward, St. Paul, Minn.
G. R. White, Nashville, Tenn.
Robert Weir, Rutland, Vt.
J. F. Winchester, Lawrence, Mass.
Geo. Waddle, Kalamazoo, Mich.
D. S. White, Columbus, O.
W. E. Wight, Pittsburgh, Pa.—(130.)

Visiting Veterinarians.

Canada.—S. J. Jupp, Petrola, Ont.

District of Columbia.—J. D. Robinson, Washington.

Illinois.—F. H. Davis, Chicago; Chas. Frazier, Chicago;

G. P. Frost, Chicago; O. M. Goodale, Kewanee; O. F. Butterfield, Libertyville; W. J. Martin, Kankakee.

Indiana.—D. McMahan, Noblesville; W. C. Clevenger, Winchester; R. G. George, Union City; D. C. Smith, Frankfort; J. S. Donald, Bay City.

Michigan.—W. A. Haynes, Jackson; E. E. Patterson, Detroit; H. S. Smith, Albion; C. A. Waldron, Tecumseh; J. C. Whitney, Hillsdale; F. O. Nottery, Detroit.

New Jersey.—W. Runge, Newark.

New York.—L. L. Bishop, Delavan; Le Roy Webber, Rochester; H. D. Gill, Theo. F. Krey, New York; R. Perkins, Warsaw.

Ohio.—W. A. Axby, Harrison; F. L. Avery, Cleveland; S. E. Bretz, Nevada; O. V. Brumley, Columbus; W. A. Bisbee, Cleveland; J. F. Bluisby, Bellevue; E. H. Callender, Zanesville; J. B. Caughey, Columbiana; W. E. Clemons, Granville; Claude H. Case, Akron; W. F. Derr, Wooster; M. F. Danee, Marion; L. J. Dunn, Cleveland; P. A. Dillahunt, Springfield; R. E. Davis, Toledo; W. H. Derr, Mansfield; N. H. Downs, Cleveland; D. J. Dellenberger, Akron; A. L. Deal, Wilmot; C. W. Eddy, Cleveland; J. D. Fair, Berlin; J. E. Foster, Coshocton; A. D. Fitzgerald, Columbus; F. C. Fadner, Berea; C. B. Frederick, Canton; M. P. Freed, Conneaut; W. F. Foust, Bryan; L. W. Goss, Ravenna; A. D. Greenville, Celina; W. H. Gribble, Washington C. H.; S. W. Gibson, Cleveland; R. F. Holland, Wellington; F. A. Haish, Minerva; R. C. Hill, W. Alexandria; W. R. Howe, Dayton; E. O. Hess, Elyria; A. L. Hoisington, Fremont; G. A. Harvey, Cleveland; C. B. Horr, Shelby; H. N. Jeffries, Greenville; W. E. Kreider, Wadsworth; H. M. Manley, Dayton; W. C. McClain, Zanesville; E. L. Metzgar, Louisville; F. Miller, Ft. Recovery; H. W. McMillen, Brookville; H. Miller, Cleveland; G. C. Mower, Oak Harbor; S. B. McDougal, Youngstown; R. P. Moosteller, Republic; W. H. Turner, N. Amherst; H. W. Riley, Akron; F. Rigdon, Kenton; W. H. Redhead, Cleveland; W. A. Schaffter, Wooster; F. D. Smith, Cleveland; L. A. Severgood, Elyria; W. M. Sprengle, Greenville; F. F. Sheets, Van Wert; W. B. Scott, Middletown; Z. W. Seibert, Crestline; W. T. Sparhawk, Lakewood; O. G. Spidell, Sugarcreek; W. J. Torrance, Cleveland; M. W. Tritschler, Cincinnati; H. L. Williams, Newark; R. W. Whitehead, Youngstown; G. C. Webb, Akron; I. A. Wyman, Kenton; W. B. Washburn, Tiffin; J. Wingerter, Akron; C. J. Williamson, Bucyrus.

Pennsylvania.—E. E. Bittles, New Castle; W. D. Fuller, Somerset; B. M. Freed, Sharon; W. O. McHugh, Pittsburgh; Geo. Magee, Uniontown; J. F. Olweiler, Elizabethtown; H. F. Pegan, Cochranton; J. M. Sloan, Jamestown; L. D. Sloan, Conneautville; W. M. Wilson, Hartstown; A. W. Weir, Greenville.

West Virginia.—G. W. Kinsey, Wheeling.

Wisconsin.—T. H. Ferguson, Lake Geneva—(111).

Ladies.

Canada.—Mesdames J. W. Groves, Hamilton, Ont.; A. E. Moore, Ottawa, Ont.; Miss Lilian McFarland.

District of Columbia.—Mrs. J. D. Robinson.

Illinois.—Mesdames J. C. Burneson, Chicago; A. H. Baker, Chicago; L. A. Merillat, Chicago; N. I. Stringer, Watseka.

Maryland.—Mrs. Dickinson Gorsuch, Glencoe.

Massachusetts.—Mesdames Chas. H. Perry, Worcester; J. F. Winchester, Lawrence.

Michigan.—Mrs. S. Brenton, Detroit; J. S. Donald, Bay City; G. D. Gibson, Adrian; C. H. Howard, Coldwater; H. E. States, Detroit; J. C. Whitney, Hillsdale; Misses Andrews, Detroit; Candor, Detroit; Margaret Veldhuis, Overisel; Lena Veldhuis, Overisel; R. L. Brenton, Detroit.

Minnesota.—Mrs. G. Ed. Leech, Winona; Miss Margaret Cotton, Minneapolis.

Missouri.—Mrs. J. M. Phillips, St. Louis.

New Jersey.—Mrs. Wm. H. Lowe, Paterson.

New York.—Mesdames Geo. H. Berns, Brooklyn; W. L. Baker, Buffalo; Misses Nellie C. Berns, Brooklyn; E. Speed, Ithaca; Ethel Williams, Ithaca; May Williams, New York.

Ohio.—Mesdames F. E. Auderson, Findlay; F. M. Burrows, Cleveland; A. S. Cooley, Cleveland; Paul Fischer, Columbus; L. A. Harsh, Minerva; W. C. Holden, Delphos; S. D. Myers, Wilmington; J. V. Newton, Toledo; L. R. Webber, Cleveland; O. E. Cotton, Mt. Vernon; D. Turner, N. Amherst; G. W. Cliffe, Upper Sandusky; W. H. Redhead, Cleveland; E. H. Callender, Zanesville; H. W. Brown, Columbus; W. B. Washburn, Tiffin; J. D. Fair, Berlin; R. C. Hill, W. Alexandria; H. W. McMillen, Brookville; L. J. Dunn, Cleveland; A. E. Cunningham, Cleveland; W. C. Fair, Cleveland; W. H. Gribble, Washington C. H.; N. H. Downs, Cleveland; Frank Rigdon, Kenton; J. E. Foster, Coshocton; I. A. Wyman, Kenton; Miss M. E. Fair, Cleveland.

Pennsylvania.—Mesdames F. S. Allen, Philadelphia; John W. Adams, Philadelphia; W. H. Hoskins, Philadelphia; C. J. Marshall, Philadelphia; E. C. Porter, New Castle; F. W. Powell, Bryn Mawr; F. H. Schneider, Philadelphia; A. W. Weir, Greenville; W. M. Wilson, Hartstown—(70).

Other Visitors.

Canada.—Gordon Boucher, Ottawa; W. S. Groves, Hamilton, Ont.

Illinois.—I. R. Andrews, Chicago; J. P. Dunn, Chicago; H. D. Dall, Chicago; D. E. Osgoodby, Chicago; Alex Eger, Chicago; Captain A. C. Merillat, Chicago.

Indiana.—Geo. Barcus, Wabash.

Michigan.—R. J. Morrison, Sr., Detroit; L. C. Layson, Detroit; C. N. Anderson, Detroit.

New York.—Bellmont Bell, Brooklyn; Hollingsworth Bell, Brooklyn.

Ohio.—E. Carter, Toledo; W. C. Drake, Cleveland; Hon. Tom L. Johnson, Mayor, Cleveland; O. W. Johnson, Cleveland; W. A. Axby, Harrison; G. Foster, Coshocton; W. E. Burneson, Berea; A. L. Palmer, Cleveland.—(22.)

NEW MEMBERS ELECTED.

At the various seatings of the Executive Committee the following applicants were recommended for membership in the Association, and they were unanimously elected:

Wm. Reid Blair, D. V. S. (McGill U., '02), New York City. Vouchers, Roscoe R. Bell and Wm. Herbert Lowe.

Samuel H. Burnett, D. V. M. (N. Y. S. V. C., '02), Ithaca, N. Y. Vouchers, V. A. Moore and P. A. Fish.

W. B. Fleming, V. M. D. (U. P., '05), Montgomery, Ala. Vouchers, John J. Repp and C. J. Marshall.

George A. Hanvey, Jr., D. V. S. (K. C. V. C., '05), Clemson College, S. C. Vouchers, Louis A. Klein and Benjamin McInnes.

Abram H. Metzger, V. M. D. (U. P., '03), Millersville, Pa. Vouchers, John J. Repp and C. J. Marshall.

Charles S. Moore, V. S. (N. Y. C. V. S., '91), Danvers, Mass. Vouchers, Benj. D. Pierce and Harry Lukes.

Sidney D. Myers, V. S. (O. V. C., '94), Wilmington, Ohio. Vouchers, Walter Shaw and T. B. Hillock.

Z. Veldhuis, D. V. S. (Vet. Dept., Detroit College of Medicine, '96, K. C. V. C., '04), Fremont, Mich. Vouchers, S. Benton and George W. Dunphy.

Enoch Barnett, V. M. D. (U. P., '05), Philadelphia, Pa.
Vouchers, John J. Repp and Clarence J. Marshall.

Eugene W. Bradley, V. M. D. (U. P., '05.), Philadelphia, Pa.
Vouchers, John J. Repp and Clarence J. Marshall.

H. W. Brown, D. V. M. (O. S. U., '02), Columbus, Ohio.
Vouchers, T. B. Hillock and John V. Newton.

G. W. Cliffe, D. V. S. (Ohio V. C., '92) Upper Sandusky, Ohio.
Vouchers, T. B. Hillock and John V. Newton.

Charles L. Colton, V. M. D. (U. P., '01), Hartford, Ct.
Vouchers, Richard P. Lyman and Thos. Bland.

W. R. Edwards, M. D. C. (C. V. C., '05), Vicksburg, Miss.
Vouchers, W. H. Dalrymple and M. M. White.

Charles F. Flocken, D. V. M. (N. Y. S. V. C., '01), Havana, Cuba.
Vouchers, Nelson S. Mayo and John S. Buckley.

G. D. Gibson, V. S. (O. V. C., '93), Adrian, Mich.
Vouchers, George W. Dunphy and S. Brenton.

R. R. Hammond, V. S. (O. V. C., '85), Cherokee, Iowa.
Vouchers, H. C. Simpson and J. I. Gibson.

James J. Joy, V. S. (O. V. C., '89), Detroit, Mich.
Vouchers, S. Brenton and Geo. W. Dunphy.

Aquila Mitchieil, D. V. S. (A. V. C., '95), Skaneateles, N. Y.
Vouchers, W. J. Coates and J. L. Robertson.

Robertson Muir, M. R. C. V. S. (Glasgow, Scotland, 1875),
Grand Rapids, Mich. Vouchers, Geo. W. Dunphy and S. Brenton.

George B. Vliet, V. S. (O. V. C., '91), Hackettstown, N. J.
Vouchers, William Herbert Lowe and T. E. Smith.

W. B. Washburn, V. S. (O. V. C., '93), Tiffin, Ohio.
Vouchers, E. H. Shepard and John V. Newton.

W. E. Kreider, V. S. (O. V. C., '94), Wordsworth, Ohio.
Vouchers, E. Burget and John V. Newton.

C. W. Springer, V. M. D. (U. P., '05), Mount Carmel, Pa.
Vouchers, John J. Repp and C. J. Marshall.

Reinstatements.

The following were reinstated to full membership on recommendation of the Executive Committee :

G. Allen Jarman, Chestertown; Md.

D. W. Curtis, Cadillac, Mich.

David S. White, Columbus, Ohio.

William R. Howe, Dayton, Ohio.

J. D. Fair, Berlin, Ohio.

George B. Blackman, Chattanooga, Tenn.

W. E. Wight, Pittsburgh, Pa.

The reading of the minutes of the 1904 meeting was also not done, but the printed minutes of the proceedings were submitted by the Secretary and were approved by the Association.

REPORTS OF REGULAR COMMITTEES.

It is not the purpose of the reporter to go deeply into the exhaustive and extremely valuable reports furnished by these committees, as they will be published in full in "Proceedings," but simply to enumerate the points treated of.

Intelligence and Education.

The Committee on Intelligence and Education reported in sections, the Chairman having assigned to each member a subject for his investigation.

Chairman Clarence J. Marshall, of Pennsylvania, read the general report in which he reviewed the condition of the profession throughout the country. He showed that there was an increase everywhere in the investigation of animal diseases, and an improved nomenclature, particularly parasitic diseases, their causes, treatment, etc., and the literature was so rapidly developing that it is hard for one to keep abreast of the times. In reference to the schools the Chairman said it was very difficult to obtain reliable reports, and the only means he has had of forming a judgment was through the quality of their graduates as developed through the examining boards. These sources of information indicate that recent graduates show a decided improvement over those of a few years ago; probably the most conspicuous deficiency in the modern graduate is his lack of knowledge of horsemanship and upon practical subjects, which they have to acquire after graduation, either in the capacity of assistant to an established practitioner or at the expense of their clients. The Chairman recommended that future committees keep in touch with the examining boards as affording the best means of knowing the quality of the work being done by the colleges; the questions propounded by the boards and the answers obtained would show the weak points in the schools.

Dr. M. H. Reynolds, member of the committee, rendered a report of recent literature, and it was a most exhaustive and valuable one. He did not give a dry enumeration of the product of veterinary and comparative minds in the past year, but he gave a charming review of the salient points in many of the more important works, showing that he had been an extensive

reader in all fields that have a bearing upon comparative medicine. His report, to be published in "Proceedings," should be carefully read by every man who wishes to keep in touch with all that is transpiring in the busy world, and from his estimate of the importance of the various works one can know just what is best to read. Few men have the ability to read to the extent that Dr. Reynolds does, and his conclusions should be of the greatest value to those who have time for only limited reading. Dr. Reynolds thought that it might be better for future committees to take up one or two subjects each year (infectious diseases, surgery, tuberculosis, etc., and thoroughly review everything in their literature of value, rather than to give a miscellaneous report such as his necessarily was.

Dr. George R. White, of Tennessee, reported upon the colleges, and certainly no committeeman ever went at an investigation more thoroughly than he. He sent out to every college head a list of pertinent questions which if conscientiously answered ought to have placed the Association in possession of intimate knowledge of the exact work being done by the various schools. The responses from the deans was very full, and if their answers are to be depended upon every school is doing good work, and omitting but little which could add to the sum of knowledge. For that matter, the announcements lack nothing in this direction; but it is well known that high-sounding platitudes are by some substituted for work in the class-room, and these well-printed statements are but a glazing to cover over imperfect and insufficient teaching. Dr. White's report while dealing in cold questions and responses, had many humorous features, and his conclusions from the great amount of work which he accomplished are worth much to those engaged in standardizing education in the different schools. The reorganization of the Association of Faculties and Examining Boards in coöperation with the A. V. M. A. is treated of elsewhere in this number, and has a great bearing on this perplexing problem.

Committee on Diseases.

Dr. Charles H. Higgins, of Canada, Chairman of this committee, made a report dealing with the subject in general, but on account of the absence of other members of the committee, gave the absentees the post of honor and read their papers instead of his own. The paper by Dr. John R. Mohler, intended as a section of the committee's work, was really a very scientific investigation of a group of diseases caused by the *Bacillus necrophorus*, which properly was a thesis and not a report

on diseases. It will make extremely interesting reading matter in the "Proceedings." Dr. Higgins argued that the Committee on Diseases has really no province, since the reports of the State Secretaries cover the existence of diseases in the various sections of the country, and the consideration of special diseases not only usurps the work of the secretaries, but encroaches upon the ground of the essayist. At his suggestion, the Association voted to discharge the committee. Too much praise cannot be extended to this committee for its work during the past two years, during which time Dr. Higgins has occupied the chairmanship. He has done a great deal of hard work and has thoroughly demonstrated that there is really no place for this committee.

The Publication Committee.

Chairman Lyman rendered a full report of his stewardship, showing the gradually increasing cost of publication of the annual "Proceedings" and his efforts to stem the tide. The additional cost is occasioned by the increasing size of the book, the greater number of copies required, and the augmented cost of work and material. He made some pertinent suggestions looking to a lessening of typewriters during the meeting by insisting upon copy being furnished properly edited by the authors, thus doing away with the necessity of furnishing manuscript for correction during the meeting. It is proposed to make a greater distribution of "Proceedings" among scientific and medical bodies, thus giving a broader dissemination of the valuable material presented to the annual meetings of the Association.

Necrology.

The committee reported four deaths among the membership during the year, and offered suitable expressions of regret at the loss sustained by the Association. The names of the deceased members are Drs. W. B. E. Miller, of New Jersey; George H. Bailey, of Maine; James McKee, of Staten Island, N. Y.; and Charles Gresswell, of California.

COMMITTEE ON RESOLUTIONS.

This committee offered the following important expressions of judgment on the part of the Association, which were adopted:

The Army Veterinarian.

"WHEREAS, Our country continues to be the only one of

the leading nations of the world that maintains as civilians those who are engaged as veterinarians in our army service, and,

" WHEREAS, The continued faithful loyal service rendered our Government for more than two score of years without any promise of future reward to those of our number who have entered our army service, and who in the face of these undesirable conditions have enhanced in every way the character of the services rendered, and

" WHEREAS, The greater need of higher veterinary service in the broadening field of sanitary control and skilled professional inspection work demand more and more a higher scientific standard of the educational attainments of those added from time to time to this branch of our national service ; therefore, be it

" Resolved, That in convention assembled, with over three hundred representatives of the profession present from all parts of our country, an appeal be made to our President, our national lawmakers, and our Army Department, to approve the measure presented by our army veterinarians, to the end that a just reward may be accorded them, and that our country be placed on as high a plane as our sister nations in the matter of army veterinary service."

The Southern Cattle Tick.

" WHEREAS, The Southern cattle tick (*Boophilus annulatus*) and the resulting Federal quarantine restriction on the movement of Southern cattle is the greatest obstacle to the growth of the cattle industry of the Southern States, and

" WHEREAS, The work of tick extermination in some of the Southern States demonstrates that it is perfectly feasible to eradicate the cattle tick, and

" WHEREAS, The Federal Bureau of Animal Industry has successfully conducted measures to eradicate other diseases when affecting or jeopardizing the cattle interests of other sections of the country ; therefore, be it

" Resolved, That it is the sense of the Association that the time has arrived for active and substantial Federal assistance to the Southern States in their efforts to exterminate the greatest present menace to the cattle interests of a large part of our country.

JAMES LAW }
" J. L. ROBERTSON } Committee."
" WILLIAM DOUGHERTY }

ARMY LEGISLATION.

Chairman Lowe reported for this committee, submitting the bill now before the Secretary of War, from the veterinarians of the Army. The committee felt that, as nothing could be done by the army veterinarians themselves, the Association should send delegates directly to President Roosevelt to plead for the very modest demands of the members of the service. There will be found in the report of the Committee on Resolutions a very manly memorial to the President of the United States and President Lowe purposes appointing on the committee for next year men who can and will proceed to the National Capital and deliver the memorial to the President on behalf of the Association. It is believed that our Chief Executive must see when his attention is thus drawn to the real status of the veterinary service in our Army that it is out of all proportion that the great American nation should be the most niggardly in this regard of any civilized country in the world.

THE TREASURER'S REPORT.

Treasurer Lowe submitted his carefully prepared statement of the operation of his office for the year, giving in detail every dollar received and accounting for every one expended. The report showed that the receipts were \$2349.51; the expenditures \$2014.62, leaving a balance on hand of \$334.89.

REPORTS OF RESIDENT STATE SECRETARIES.

Resident Secretaries in the following States, Colonies, and Provinces were received, and either read by the Secretary in person, or placed on file with the Association for printing in the "Proceedings:" Arizona and New Mexico, J. C. Norton, Phoenix, Arizona; Connecticut, F. F. Bushnell, Winsted; Florida, J. G. Hill, Jacksonville; Kentucky, D. A. Piatt, Lexington; Maine, A. Joly, Waterville; Maryland, F. H. Mackie, Baltimore; Michigan, S. Brenton, Detroit; Minnesota, D. M. McDonald, Brainerd; Nebraska, W. A. Thomas, Lincoln; New Jersey, James T. Glennon, Newark; New York, J. E. Ryder, New York City; Ohio, Paul Fischer, Columbus; Pennsylvania, C. J. Marshall, Philadelphia; Tennessee, George R. White, Nashville; Vermont and New Hampshire, F. A. Rich, Burlington, Vermont; Ontario, Canada, Thomas Thacker, Renfrew; Philippine Islands, G. E. Nesom, Manila; Cuba and Porto Rico, N. S. Mayo, Santiago de las Vegas, Cuba.

The report of Secretary Fischer, of Ohio, was extremely interesting and brought out a full and valuable discussion. In the

course of the report the statement developed that there were \$120,000,000 worth of live stock in the Buckeye State, and to care for this great wealth there are 200 regular veterinarians. Glanders is a rather rare disease in that State, only 25 horses affected with it being destroyed during the last year. These were confined to eight counties out of a total of 88 counties in the State.

Secretary Rich, of Vermont, also gave a most interesting account of veterinary matters in his State, principally narrating the method adopted in dealing with tuberculosis. In the last ten years 140,000 head of cattle have been submitted to the tuberculin test, which is applied upon request of owners. When destroyed the State pays 80 per cent. of the appraised valuation, determined by government appraisers. It has been found that about 3 to 5 per cent. of all cattle are affected with the disease.

Secretary Marshall, of Pennsylvania, contrary to his usual custom, did not read his report, which is usually a very interesting document. He explained that this year it was very long and better suited for publication, as it consisted largely of copies of the recent important laws secured by the profession in relation to veterinary interests. The united profession in the Keystone State was very fortunate during the last session of the legislature, obtaining appropriations and regulating statutes whenever sought.

The Librarian, Dr. W. L. Williams, gave a detailed account of his stewardship, showing just what has been received and disposed of in the Association's literary archives.

ELECTION OF OFFICERS.

In the afternoon of the first day the annual election of officers occurs, and this year there was but little contest, it seeming to be the general opinion that the first names presented were wholly acceptable and no other nominations were made. The only instance where resort to the ballot had to be had was in the case of the selection of five Vice-Presidents, there being eight placed before the convention.

Dr. Roscoe R. Bell, of New York, placed the name of Dr. Wm. Herbert Lowe, of New Jersey, before the meeting for the office of President, the speaker drawing attention to his long and unselfish labors in behalf of his profession and the Association, while Dr. T. Earle Budd, President of the Veterinary Medical Association of New Jersey, paid a glowing tribute to his colleague, recounting the almost superhuman work which Dr.

Lowe did in his native State, uniting a disorganized and demoralized profession into a powerful and harmonious body; and then worked by day and by night until he secured the passage of excellent laws, governing and protecting practice in that State, and afterwards championing these laws by securing the conviction of prominent offenders. The speakers thought the nominee had every qualification for the office, and he would bring to the Chair the ripe experience gained in his past career and his great energy and enthusiasm which are a part of his nature, all insuring a successful administration of the affairs of the National Association. The members took the same view of the nominee's merits, for no other name was placed before the meeting, and his unanimous election followed.

For Vice-Presidents the following were placed in nomination: Drs. J. G. Rutherford, of Canada; A. H. Baker, Illinois; W. H. Dalrymple, Louisiana; Charles E. Cotton, Minnesota; S. H. Ward, Minnesota; Richard P. Lyman, Connecticut; George W. Dunphy, Michigan; E. H. Shepard, Ohio. Drs. Rutherford, Dalrymple, Shepard, Cotton, and Lyman were elected, taking precedence in the order given, according to the number of votes cast for each.

Secretary Repp succeeded himself for the fourth term, the members striking a balance in his favor through the satisfactory manner in which he has performed the duties of his office since his election at Minneapolis.

For Treasurer all eyes seemed to turn to the energetic member from Tennessee, and Dr. George R. White was unanimously elected to guard the finances of the Association for the coming year, replacing Dr. Lowe, who was elevated to the Presidential chair.

So that the following gentlemen will fill the offices in the Association for the ensuing year:

President—Wm. Herbert Lowe, of New Jersey.

Vice-Presidents—J. G. Rutherford, of Canada.

—W. H. Dalrymple, of Louisiana.

—E. H. Shepard, of Ohio.

—Charles E. Cotton, of Minnesota.

—Richard P. Lyman, of Connecticut.

Secretary—John J. Repp, of Pennsylvania.

Treasurer—George R. White, of Tennessee.

A NOMINATING COMMITTEE.

Dr. C. J. Marshall proposed an amendment to the By-Laws

creating a committee on nominations to consist of all the ex-presidents in attendance upon the annual meetings, such committee to place before the meeting not less than three names for the office of president, not less than ten from which to select the five vice-presidents, and not less than two each for secretary and treasurer. The names submitted are to be placed in alphabetical order so that one will not have a significance over another. Nominations may also be made from the floor. By this method it is hoped that there will be a better opportunity to select the best timber in the Association to fill the offices, thus doing away with any wire-pulling and electioneering. It is argued by the promoters of the change that ex-presidents have no personal ambitions to gratify, and will present only such names as they deem most suited to serve the Association best.

This same motion failed at the St. Louis meeting under a misapprehension of its purport. The REVIEW in its account of the meeting pointed out that the members had misinterpreted the spirit of the suggestion, which was at that time championed by Dr. Reynolds, and their present reversal of judgment substantiates the REVIEW'S conclusions.

PAPERS AND DISCUSSIONS.

"Unusual Lesions of Tuberculosis Found in Abbatoir Inspection," was the title of a very interesting paper by Dr. R. H. Harrison, of the Bureau of Animal Industry, St. Paul, Minn., and was discussed at length by Dr. S. Stewart and others.

"The Immunization of Cattle Against Tuberculosis," by Drs. Pearson and Gilliland, was read to the members and was received with the closest attention and concluded in a storm of applause. The discussion was more in the nature of a search for more light upon the subject, the essayist being plied with queries from Drs. Quitman, Noack, Reynolds, Kinsley and others, while Dr. Law made some extended remarks, expressing his fears as to the ultimate success of the immunizing efforts now being made, but warmly endorsing the conscientious work being done by the essayist. The paper is printed in full elsewhere in this number.

Dr. Louis A. Klein, of Clemson College, S. C., was unable to present his announced paper on "Epizoötic Abortion," as the experiments upon which it was based were not finished, but instead he contributed one on "A New Treatment for Gastro-Intestinal Catarrh or Scours in Milk-Fed Calves," which was referred to the Publication Committee.

Dr. M. H. Reynolds' paper on "Stable Ventilation" was

really the detailing of a number of experiments showing the effects of carbonic acid gas upon the constitutions and milk secretion of cattle, and did not include, as might have been thought from the title, new ideas in the ventilation of stables in general, and particularly with reference to the stuffy abodes of hard-worked horses in the large cities. It was discussed by Drs. Quitman, Tuttle and Higgins.

"Spavin Group of Lameness" was the joint product of Drs. W. L. Williams, C. W. Fisher and D. H. Udall, but it was not hard to recognize the ear-marks of the surgical sage of Ithaca, who has taken the subject greatly to heart, and believes that all or nearly all spavins, or splints, or ringbones belong to one family and have underlying them the ossific diathesis, or a something, which needs but an excitant to bring forth the ocular evidence of its existence. We hope soon to obtain this paper for publication, for there must be something in it when Dr. Williams is behind it. The paper was discussed by Drs. J. W. Adams, L. A. Merillat, and W. H. Hoskins.

"Neurectomies of the Pelvic Limb" was a practical review of the anatomy of the hind-leg with special reference to the nerves which are usually operated upon for lameness, and received very careful consideration at the hands of that excellent surgeon, Dr. R. C. Moore, of Kansas City. He further went into a rational discussion of the causes of degeneration in the tendons and soft tissues with the indications and contraindications for the interference. Drs. Harrison, Quitman, and Adams entered into the discussion.

"Accidents and Sequellæ of Surgical Operations," by Dr. L. A. Merillat, of Chicago, followed Dr. Moore's paper, these two forming the programme for the extra session on Wednesday night. Dr. Merillat went at his subject with a rush and read rapidly for almost an hour, so exhaustive were the surgical procedures which had to be included under his title. Not a sound could be heard save the author's voice, so intent were his auditors to catch every word, and when he had concluded there ensued a discussion which has probably never been equalled in this country. It was a night session, when visitors from abroad usually go sight-seeing, but to-night more than two hundred are glued to the chairs, and not a man leaves the room until it is all over. When the points brought out by the author have been submitted to the criticisms of the debaters, they take up methods of anaesthetizing and consider the subject from every viewpoint—the rapid and the slow method, the modes of death

and their frequency, the complications and sequellæ, and then some astounding statistics. Surgeons of national reputation were in debate upon surgical questions, and the time passed rapidly. Those taking part (many speaking three or four times) were Drs. Williams, Adams, Howe, Moore, Merillat, James Robertson, Newton, Quitman, Beckitt, and Rutherford.

Dr. E. L. Quitman was slated for "General Remarks on Veterinary Therapeutics," but explained that he was so impressed with some changes in the new United States Pharmacopœia that he had thought he could serve the Association best by substituting a paper on "A Review and Criticism of the New Pharmacopœia," and it proved to be of the utmost value, so much so that we begged for a copy of the paper and it is crowded into this number of the REVIEW, many articles already in type being held for subsequent issues, that Dr. Quitman's article might be given to the profession at the earliest moment.

"Calculi" was substituted for "Hydrothorax" by Dr. George B. Jones, of Sidell, Ill., and he narrated some peculiar instances of these formations and exhibited some fine specimens.

Through the interest of Dr. Liautard, a valuable paper by Dr. E. Lavalard, of Paris, was read, by Dr. Bell, the title being "Glanders During Half a Century, from 1845 to 1905, in a Firm Employing a Large Number of Horses," being the experiences of Dr. Lavalard in controlling the disease among the horses owned by the Omnibus Company of Paris, more than a hundred thousand. One of the most general and valuable discussions of the meeting was provoked by the reading of this paper, those taking part being Drs. Ward, Reynolds, Abele, Lyman, Knowles, Butler, Cotton, Bell, Beckitt, Dunphy, Berns, and Rutherford; the last named gentleman going deeply into the methods now being carried out in the Dominion of Canada. The system of testing and re-testing which was practiced a few years ago, has been abandoned, and animals are now destroyed on the mallein test and paid for by the Government. In the past eight or nine months more than \$80,000 has been paid for animals thus destroyed, and he believes the disease will be eradicated from the Dominion in a few years, repaying tenfold for the cost of its extermination.

"Twenty-Seven Years' Veterinary Experience," was the title of a popular paper by Dr. J. V. Newton, of Toledo, Ohio, being a narrative of events in his professional life which pointed a moral. Some of his conclusions were in the nature of injunctions not to neglect a good practice to enter politics, never ac-

cept money from dealers, and always read the REVIEW. We expect to publish this paper in the October number.

The following papers were read by title, and will be published in "Proceedings": "A New Treatment for Scours in Calves", by Dr. Louis A. Klein, Clemson College, S. C.; "The Status of Therapeutics", by Dr. P. A. Fish, Ithaca, N. Y.; "Hydrothorax", by Dr. Geo. B. Jones, Sidell, Ill.; "Clinical Examination of the Blood of the Dog", by Drs. S. H. Burnett and Jacob Traum; "The Profession and the Advancement of Science", by Dr. D. Arthur Hughes, East St. Louis, Ill.; "Trypanosoma Equiperdum", by Dr. John R. Mohler, Washington, D. C.

The hour having drawn near for the final adjournment, as the afternoon was to be devoted to a sail upon Lake Erie, the installing of the newly-elected officers was begun, and each one, from the President to the Treasurer, made brief speeches of acceptance, pledging their best efforts in behalf of the Association. President Lowe read a carefully prepared paper, outlining his policy and giving expression to his sense of great responsibility in the high office, and stating that all his best energies should be put to the test to make his administration count for the benefit of the Association.

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THE SURGICAL AND MEDICAL CLINIC.

The clinic was held at Troop A Riding Academy, corner of Curtiss and Willson Avenues, about twenty minutes' ride from headquarters. The large ring of the Academy, covered with tan-bark, was well adapted for the purposes of the clinic, and had been supplied by the local committee with every requisite. In the centre a series of circular seats, in amphitheatre style, were placed, capable of seating two hundred persons, in the centre of which was placed an operating table, brought from quite a distance, of the pattern used at the Chicago Veterinary College. In close proximity were tables on which were various dressing materials and drugs to be employed in the operations. The committee had thoughtfully provided distilled ice-water for the thirsty veterinarians, which was very gratefully partaken of at frequent intervals. Over against the wall was arranged a pair of Barcus stocks for confining horses for operations. Stable accommodations for the patients were provided in the stable department, and all in all the arrangements might be said to be ideal. The local committee of surgeons were attired in white uniforms ready to place the operator in possession of any assistance he might require.

Under such favorable conditions, with the most noted surgeons in this country on the programme and on the ground, the audience had a right to expect the best demonstrations ever witnessed in the history of "the surgical clinic." And it came very near to being a perfect one; in fact, so near that, we heard a prominent opponent of this section of the annual meeting's programme acknowledge that he was mistaken; that properly conducted he believed they were a valuable addition, educational and interesting. If one of the committee had been assigned to the work of "managing" the events, choking off undue verbosity on the part of some of the surgeons, who wandered away from the case in hand and gave lectures on elementary surgery, entirely foreign to the case under consideration, consuming valuable time which belonged to others, a great mistake would have been avoided. The "manager" should assign just so much time to each one to explain the technique of his operation and for no other purpose, and should bring out the next subject promptly. Lacking these arrangements, the programme dragged, many subjects remained in their stalls when the hour to close had arrived, and not nearly so much was learned as there would have been with a more business-like management. Still the Cleveland clinic stood head and shoulders above any clinic ever held under the auspices of the A. V. M. A., and the local clinic committee is entitled to much praise for all they did. This criticism is written in the kindest spirit, and for the benefit of the next committee, rather than as a censure for what the Cleveland committee failed to do. Attendance, about two hundred and twenty-five.

Case I.—Arytenectomy. Operator, Prof. M. H. McKillip, Chicago. Brown gelding, aged; thrown with side lines and placed on back with head extended. Operative field thoroughly disinfected, larynx opened with triangular incision, cartilages sawed through, and left vocal cord exposed motionless; cord resected, and wound left to granulate without suturing. Time occupied, six minutes. Operator explained his technique at length.

Case II.—Lameness. Surgeons, Drs. W. R. Howe and W. E. Wight. Chestnut driving gelding, 8 years old, lame off front for two years. Diagnosis, navicular arthritis; injected for low plantar neurectomy with Stovaine 15 per cent.; horse stood 40 minutes, and when trotted to halter lameless had not decreased. He was then injected with the same solution as for high plantar neurectomy, and in 20 minutes trotted sound. The diagnosis

was amended, and the cause of the lameness assigned to low ringbone. Advice, high plantar neurectomy.

Case III.—Lameness. Surgeons, Drs. George H. Berns and E. L. Quitman. Bay coach gelding, 10 years old, lame near front for 1 1/2 years. Diagnosis by Dr. Berns, periostitis of os pedis, or keraphylocle, or both. Dr. Quitman did not disagree, but observed a painful osteophyte just back of the knee and would withhold his diagnosis until a local anesthetic could be used. The attending coachman had no authority to permit this, and the question was left open.

Case IV.—Bone spavin. Operator, Dr. John W. Adams, of Philadelphia. Brown draught gelding, 9 years old, lame off hind. Has had enlargement for a year, but has only been lame two weeks. Spavin located well forward, and cunean tenotomy is not really indicated, though the surgeon explained that tenotomy would be performed and the hock well fired. Side line was used on opposite leg, 3 drachms of a 4 per cent. solution of cocaine were injected at several points on the superior part of the internal aspect of the hock and the surface well massaged. For the tenotomy he made a very small antero-posterior slit in the skin on the lower border of the tendon as found by the groove (or the feel of the thumb if there is not much enlargement). In some cases he also performs periostotomy, and dresses the wound with oakum for two or three days. This operation causes a swelling, which results in counter-irritation, lasting some time, and he prefers it to firing, as it leaves no mark. Absolute rest for six or eight weeks, then walking exercise. The electric cautery used by Dr. W. R. Howe, of Dayton, Ohio, was employed in firing this horse, and was well spoken of.

Case V.—Stringhalt. Operator, Dr. L. A. Merillat, of Chicago. Roan light draught gelding, aged, badly stringhalted in both hind-legs. Secured in stocks and peroneal tenotomy done by resection of a small piece of the tendon.

Case VI.—Lameness. Surgeons, Drs. Blattenburg and Armour. Bay saddle gelding, 10 years old, very lame near front. Stovained for low plantar neurectomy, trotted sound. Neurectomized by Dr. Blattenburg.

Case VII.—Lameness. Surgeons, Drs. James T. Glennon and Roscoe R. Bell. Chestnut gelding, 5 years old, lame near front. Diagnosis: Strain of the biceps muscle at the bicipital groove of the humerus. Advice, cross setons.

Case VIII.—Fistulous Withers. Operator, Dr. F. C. Beckett, of Boston. Bay mare, tandem leader, 6 years old. Pro-

cess began last fall, and after treatment the wounds healed, leaving some thickening, which has recently been enlarging. Tissues Stovained and incision made on left side. Considerable hyperplasia, but no pus formation found. Advice, removal of hypertrophied tissue and treat as for open wound.

Case IX.—Navicular arthritis and Tendonitis. Surgeons, Drs. George H. Berns and W. H. Hoskins. Brown gelding, 8 years old. Diagnosis, navicular arthritis and tendonitis. Advice, median and plantar neurectomy. Operations performed by Drs. L. A. Merillat and J. H. Blattenburg.

Case X.—Lumbago. Surgeon, Dr. Roscoe R. Bell. Dachshunde dog, 5 years old, unable to stand on hind legs and very shaky on near front, temperature 103, tender on pressure over loins. Diagnosis, acute rheumatism. Treatment, anti-rheumatic liniment and salophen, gr. iiiss, three times a day.

Case XI.—Bayer Operation for Quittor. Operator, Dr. W. L. Williams, Ithaca, N. Y. Bay mare, aged, quittor inside off hind coronet of long standing. Excision of the lateral cartilage by the Bayer method (described in Williams' translation of Pfeiffer's "Surgical Operations"). Performed on operating table under chloroform anaesthesia, induced by Dr. L. A. Merillat. This was one of the best operations for demonstration before a large body of surgeons, as it was plainly visible to all, and when the laminæ had been thrown back the field could be inspected, the technique explained, and every step of the operation clearly understood.

Case XII.—Chloroform Anaesthesia. Anæsthetist, Dr. L. A. Merillat, of Chicago. Bay mare (Case XI). Two ounces of chloroform, a sponge, and rubber sheet. Animal anaesthetized and ready for operation in four minutes.

Case XIII.—Demonstration Humane Power Float. Two gray geldings, aged. Float operated satisfactorily by several surgeons, requiring about five minutes to properly remove sharp points, when in hands of one familiar with the instrument.

Case XIV.—Demonstration of Passing Phillips' Stomach Tube. Operators, Drs. George R. White and J. M. Phillips. Black mare, aged, successfully passed by both surgeons. Mare had very narrow head and constricted nasal chamber, causing considerable haemorrhage from right nostril, none when passed through left nostril.

Case XV.—Imaginary Choke. Operator, Dr. J. H. Blattenburg, Lima, Ohio. Black mare (same as Case XIV). Probang was passed down œsophagus to middle of cervical region against

an imaginary obstruction, skin incised and œsophagus drawn through incision and ligated, including end of probang. Force pump was then used to force fluids against the offending body, the ligature preventing the fluid from returning outside of the probang. In this way it is hoped to dilute the obstruction and drive it into the stomach by the pressure from the fluid.

Case XVI.—Oöphorectomy. Operator, Dr. R. P. Lyman, Hartford, Conn. Pregnant cow. Operated both through flank and vagina, as a demonstration.

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THE BANQUET.

On Thursday evening the annual banquet was held in the Assembly Room of the Hollenden, and a large number of the members and ladies of their families attended, probably one hundred and seventy-five. The *menu* was excellent, though modest and devoid of wines save claret punch. The room was tastefully decorated, and a band dispensed some excellent music, which was enlivened by the interposition of several well-rendered songs by a local veterinarian.

When the plates were removed Dr. M. E. Knowles, the toastmaster, introduced

Dr. J. G. Rutherford, of Canada, and asked him to speak to the toast "Veterinary Sanitary Control," but the gifted orator from across the border refused to stick to his text and talked on every subject save the one assigned to him. But into whatever field he wandered he carried his auditors with him, and his wit and wisdom won him generous applause.

Dr. W. H. Dalrymple spoke to the toast of "The Profession in the South," and on account of the great interest in the pestilence now prevailing at his home in Louisiana, and from a medical point of view in the infecting mosquito, he gave a half-hour talk on the modes of disseminating the disease and of preventing it, including the life history of the particular kind of mosquito. His discourse was very instructive and every one felt greatly enlightened upon the subject and warmly applauded the Doctor.

Dr. James L. Robertson gave some "Reminiscences of the Profession," telling of the old days when the meetings were held twice yearly, one time in New York, and then at Boston, gradually expanding until in 1884 the Association met in Cincinnati; but it was too much for the little Association, and it confined itself to the Atlantic Seaboard for the next six years, when Chicago secured the meeting, since which time it has gone to

many distant points, to meet the requirements of its great growth. What a pity that the good Doctor does not undertake the compiling of a history of the Association, or of veterinary medicine in this country. No one we know of is so capable of doing so, since he possesses both the data and the ability.

"The Field of Medicine" was a scholarly discourse by Dr. J. C. Aldrich, a member of the medical profession of Cleveland. He had prepared his address carefully, and it was greatly appreciated by all.

Then Mr. G. E. Schneider, President of the local Road Drivers' Association and a journalist of repute, paid a glowing tribute to the horse, starting from the little boy with his hobby horse and carrying him through all the stages of the pony until he reaches the fleet roadster, breaking into poetry in his enthusiasm and giving all his hearers a higher and nobler conception of the noble animal.

"Our Guests" was responded to by Dr. J. V. Newton, of Toledo, Ohio, explaining that it was his maiden effort, developed a high degree of oratorical eloquence as he warmed up, and by the time he had finished his journey was trotting sound and steady.

"Our Visitors" was assigned to Dr. Hoskins, and he gave great praise to the profession in the Buckeye State, showing that it was fully abreast of the times and in position to keep right in the front rank as veterinary medicine continues to advance.

"International Veterinary Medicine" was assigned to Dr. John W. Adams, but, like Dr. Rutherford, he could not be made to stick to his subject, talking on almost every theme save this one. But he was glorious in all, and paid a tribute to the sanitary medicine of the ancients, showing that Noah had taken into his stuffy, ill-ventilated ark animals of every breed, and although provided with only one window, not a single case of disease developed, not even shipping fever. A point made by the speaker in considering the immensity of the veterinary field was that every veterinarian should know something about everything, and all about something, which shows that the idea of specialization is gradually being forced upon our branch of medical science. The Doctor is a very charming after-dinner speaker, and his ready wit and fund of stories sandwiched nicely between his words of wisdom.

President-elect Lowe was properly assigned as his sentinel "The American Veterinary Medical Association," and he dealt

with his subject in serious mood, telling of its early struggles and of the victories it has gained, at the same time outlining his policies for its improvement and his plans for extending its influence.

"Veterinary Education" was to have been responded to by Dr. James Law, but in his absence Dr. A. H. Baker, of Chicago, was requested to fill his place, which he did in an acceptable manner.

"The Social Feature of the Veterinary Profession" had Dr. T. Earl Budd as its champion, but in his absence Dr. Thomas E. Smith, of New Jersey, beamed upon the diners and gave them an *impromptu* address of much mirth and full of pleasant thoughts.

When Dr. E. L. Quidman had spoken to the toast of the "Ladies," the company sang "Auld Lang Syne," and adjourned with pleasant memories of the Cleveland banquet. .

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NOTES OF THE A. V. M. A. MEETING.

Annual meetings come and go; the record is the same: better than ever; Cleveland was no exception to the rule.

Two candidates for the next meeting-place have already appeared—Kansas City and Lexington, Ky.

Ohio far outdid any State that ever held within its borders the meeting of the A. V. M. A. Almost a hundred of her sons were in attendance.

The Association added the names of two distinguished veterinarians to its roll of honorary members—Drs. E. Leclainche and E. Lavalard, of France.

The practice of having the headquarters and the convention hall in close proximity has received another strong endorsement. Absentees from the sessions were the exception.

The attendance at the clinic was the best ever. We twice counted two hundred and twenty-five persons deeply interested in all that was going on.

The Hollenden was an ideal headquarters; the assembly room adequate. It seemed as though the hotel had been built for the A. V. M. A. convention, or the convention had been organized to fit the hotel.

There were seven ex-presidents of the A. V. M. A. in attendance upon the Cleveland meeting: Drs. J. L. Robertson, W. Horace Hoskins, Tait Butler, Leonard Pearson, J. F. Winchester, S. Stewart, and Roscoe R. Bell.

One hundred and thirty members were registered as being present—not so many as at St. Louis, when there were 175,—but the great side attraction of the World's Fair brought out many who otherwise would not have attended.

New Jersey sent one of the largest delegations of the Eastern States, nine being present: Wm. Herbert and J. Payne Lowe, T. Earle Budd, Werner Runge, James T. Glennon, Thomas E. Smith, E. L. Loblein, L. E. Tuttle, and Geo. B. Vleit.

Dr. Leonard Pearson was at Cleveland just long enough to read his splendid paper on the "Immunization of Cattle Against Tuberculosis," having to attend to some important matters prior to sailing for Europe on the 19th, where he will be a delegate to the International Veterinary Congress at Budapest.

Cleveland's local committee worked as one man—Cooley, Shepard, Fair, Cunningham and Eddy deserve the greatest credit for the smoothest arrangements ever put into operation. This comes largely of having men at the head who have been regular attendants at previous meetings; they know the weak points, and they obviate blunders of the past.

Six members of the class of '84 of the American Veterinary College were present, and reminiscences were the order of the day. They were Drs. J. E. Ryder, of New York; M. E. Knowles, of Montana; E. L. Loblein, of New Jersey; J. W. Sheibler, of Tennessee; F. S. Allen, of Pennsylvania, and W. G. Hollingworth, of Utica, N. Y.

President Knowles in his annual address wandered off into the realm of patriotic laudation of that honest though eccentric municipal prodigy, Mayor Tom L. Johnson, of Cleveland. The Mayor blushed under the fire of the speaker's eloquent peroration, and at its conclusion merely said that he wished he deserved it.

Dr. J. F. Winchester, who has attended meetings of the A. V. M. A. almost since the War of the Rebellion, and has occupied bachelor apartments at the various headquarter hotels, was beaming at Cleveland as he presented his bride to his old-time friends. He has lost the classic curl of his elegant mustache, but it is unlikely that the new conditions have anything to do with it.

The entertainment at Cleveland was very fine. Trolley rides, tally-ho and carriages, a chartered steamer, receptions, shopping excursions, card parties, etc., occupied all the time of the ladies and children, and all that could be spared by the delegates. The sail on the *City of Erie* on Thursday afternoon was grand,

and much good was accomplished through the organization of the Association of Faculties and Examining Boards.

The Committee on Intelligence and Education recommended that, as there seemed to be an undereurrent of desire for a mutual aid association, and it having been shown to be not feasible, it would be advantageous for the Association to have appointed a committee to confer with some of the accident insurance companies with the object of securing better rates for members of the American Veterinary Medical Association.

It was suggested by an enthusiastic reader of this journal at Cleveland that there should be an addition to the By-laws of the A. V. M. A., that "any member who fails to regularly read the REVIEW shall be found guilty of a breach of the Code of Ethics and shall be deemed an unworthy member," etc. So many kind words were said for the REVIEW at Cleveland, both on and off the platform, that we returned to our work with renewed energy.

New York was rather light in its representation. There were three from Manhattan (James L. Robertson, J. E. Ryder, and H. D. Gill), two from Brooklyn (George H. Berns and Roscoe R. Bell), three from Ithaca (James Law, W. L. Williams, and S. H. Burnett), C. R. Perkins, of Warsaw; W. L. Baker, and John P. O'Leary, of Buffalo; W. G. Hollingworth, of Utica; Dr. Weber, of Rochester; G. C. Kesler, of Holly; and several others.

The local committee displayed much taste in the selection of badges for the officers, members and visitors, they being quite similar to the beautiful ones furnished at Ottawa, with the addition of a surmounting ornament for the pin, which permitted the badge to hang loosely. This was *not* an improvement, as it prevents the ladies who received them at Cleveland and those who fall heir to them on the return of father, husband, or brother, from wearing them as ornamental pins. Many of the ladies at the Cleveland meeting were adorned by the badges supplied at the Canadian Capital.

A telegram was sent to Dr. D. E. Salmon, who could not be present on account of important Bureau work in Chicago, expressing regret at the newspaper attacks upon him in connection with the investigations of the Department of Agriculture, and at the same time assuring him of their utmost confidence in his ability to pass through the ordeal of the strictest investigation of his career unscathed. Any one who knows the gifted

chief of the Bureau knows that no wrong can possibly attach to him where honor and integrity are concerned. His colleagues in the Association simply wished to let him know that his good name is safe in their keeping.

Dr. George R. White, of Tennessee, made an announcement of importance to those in attendance upon the clinic, during an operation for the cure of stringhalt. He warned the surgeons against undertaking similar treatment on mules, saying that he had performed peroneal tenotomy on more than twenty of the hybrids without a single recovery or marked benefit, although 90 per cent. of all horses operated upon by him made excellent recoveries. He did not attempt to account for the idiosyncrasy, but said he had ceased to recommend it in mules altogether. His experience with the various neurectomies in the mule was also discouraging, as degenerative processes were much more frequent and rapid than in the soliped.

Parke, Davis & Co., of Detroit, tendered an invitation to the members to visit their extensive laboratories at the close of the meeting on Friday afternoon, and about forty availed themselves of the courtesy, staterooms being provided for them on the steamer which regularly plies between Cleveland and Detroit. Upon arrival at the latter city the guests were taken in automobiles to their wonderful plant, where they were conducted through the entire establishment, witnessing the modern methods of manufacturing the various pharmaceutical products. When the inspection was completed the veterinarians were given a delightful luncheon, and after some further courtesies were returned to the point of embarkation.

Dr. James Robertson, in the course of a discussion upon tetanus on Wednesday evening, narrated a case coming under his observation which demonstrated that the immunity conferred by tetanus antitoxin is of short duration. It has become the custom in some localities in Chicago to administer the serum immediately that a valuable horse receives a puncture of a foot by a nail, believing that the disease will be prevented from developing in consequence of the injection. A valuable horse gathered a penetrant nail, received an injection of the prophylactic serum, and failed to develop tetanus. In two months he "picked up" another nail, but this time did not receive the injection. He developed tetanus in a mild type, from which he recovered.

During the discussion on Dr. Merillat's paper, Dr. E. L. Quitman, of Chicago, gave out his new treatment for tetanus,

though he explained that his experience with it was so limited that he did not by any means vouch for its infallibility; in fact, he was not sure that any merit attached to it, though he had used it in four cases, all of which recovered, and the relaxation of the masseters was so prompt and decisive after its administration that the treatment had all the appearances of a valuable curative agent. The treatment consists in the subcutaneous injection of one ounce of diphtheria antitoxin daily, and in no case has recovery been delayed beyond three weeks, while the relief of the trismus follows in a few hours after the injection, the rigidity of the muscles of the posterior part of the body persisting much longer.

Several well-known faces were missed from the meeting, all of whom are in Europe, either studying or in attendance upon the International Veterinary Congress. Among them are Dr. V. A. Moore, of the New York State Veterinary College; J. W. Connaway, of the University of Missouri; Wm. Henry Kelly, of Albany, N. Y., and Adolph Eichhorn, of the Bureau of Animal Industry, Dr. Pearson remaining at Cleveland just long enough to read his paper and then hurrying to his steamer. The REVIEW had a chatty letter from Dr. Moore, dated at Hannover, Aug. 7, in which he said that he had been studying methods in veterinary education in England and Germany, and was on the eve of starting for France. He expected to go to Budapest, having received papers from Washington designating him as a delegate to the Congress. Dr. Moore said that Dr. Connaway was then at Hannover, but expected shortly to return to America. The latter has been studying in Europe for a year. The REVIEW will endeavor to secure an article from him on his impressions of matters veterinary on the Continent.

Mr. Alex. Eger, the Chicago publisher of veterinary books, presented the REVIEW with a well-preserved copy of the Constitution and By-laws of the United States Veterinary Medical Association, printed by Robert Craighead, New York, 1863, which is of course the first one published. It contains a list of the members—39 in all, with the officers for the year 1863. Seven States were represented, as follows: New York (Long Island 3) 14, New Jersey 9, Massachusetts 7, Pennsylvania 5, Ohio 1, Maine 1, Delaware 1, and one from England (John Arnold). So far as we know, there are only two of these charter members now living—Alexander Liautard (now an honorary member) and Alfred Large, at present practicing human medi-

cine at Great Barrington, Mass. The officers for that year were: President—Josiah H. Stickney, Boston. Vice-Presidents—R. H. Curtis, New York; Wm. Saunders, Massachusetts; Elias F. Ripley, Maine; R. McClure, Pennsylvania; W. A. Wisdom, Delaware; G. W. Bowler, Ohio; R. Jennings, New Jersey. Recording Secretary—Alexander Liautard, New York. Treasurer—A. S. Copeman, Utica, N. Y. Corresponding Secretaries—W. T. McCoun, New York; Rt. Wood, Lowell, Mass.; J. (should be I.) Michener, Pennsylvania; J. C. Walton, New Jersey. Censors—A. Large, New York; C. M. Wood, Boston; E. H. Palmer, Pennsylvania; E. F. Thayer, Massachusetts; Jacob Dilts, New Jersey; J. C. Essenwein, Philadelphia. Mr. Eger acquired this copy through the purchase of the library of the late Dr. J. H. Stickney, of Boston.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

This Association convened for its twenty-second annual session in the new Laboratory Building, Veterinary Department, of the Ohio State University, Tuesday, January 17, and was called to order by President Dr. David S. White at 2.30 P. M., when the Rev. W. O. Thompson, President of the Ohio State University, in a few well-chosen remarks, gave us a hearty and cordial welcome. Dr. Walter Shaw briefly responded, then the work of the Association was taken up.

The President's annual address was a record breaker—that is, for brevity.

Next followed the reading of the minutes of the previous meeting, which with slight correction were duly approved.

Roll-call showed the following present: W. A. Axby, Harrison; J. L. Axby, Harrison; S. E. Bretz, Nevada; H. W. Brown, Columbus; O. V. Brumley, Columbus; J. H. Blattenburg, Lima; A. H. Collins, New London; G. W. Cliffe, Upper Sandusky; L. P. Cook, Cincinnati; L. W. Carl, Columbus; W. E. Clemons, Granville; E. H. Callender, Zanesville; W. R. Clark, Wauseon; J. W. Choates, Columbus; Norton Dock, Columbus; H. E. Dilatush, So. Lebanon; J. D. Fair, Berlin; H. Fulstow, Norwalk; J. E. Foster, Coshocton; C. B. Frederick, Canton; Geo. L. Frese, Toledo; J. L. Faragher, Lorain; Paul Fischer, Columbus; W. H. Gribble, Washington, C. H.; A. D. Gemmil, Celina; Frank Griffin, Columbus; W. R. Howe, Dayton; T. B. Hillock, Columbus; W. C. Holden, Delphos; N. W. Hillock, Columbus; E. R. Hinckley, Sandusky; E. O.

Hess, Elyria ; R. C. Hill, West Alexandria ; C. E. Inskeep, Urbana ; T. E. Jones, Newark ; Geo. W. Kinsey, Mt. Pleasant ; W. A. Labron, Xenia ; C. E. Leist, Columbus ; S. D. Myers, Wilmington ; H. M. Manley, Dayton ; L. H. Maynard, Columbus ; J. A. Meagher, Glendale ; Fred. Miller, Ft. Recovery ; E. L. Metzger, Clyde ; H. W. McMullen, Brookville ; J. V. Newton, Toledo ; M. C. McClain, Jeromesville ; E. L. Price, Circleville ; J. McI. Phillips, Columbus ; I. A. Ruby, Plymouth ; Walter Shaw, Dayton ; E. H. Shepard, Cleveland ; F. F. Sheets, Van Wert ; Sept. Sisson, Columbus ; L. A. Severcool, Elyria ; Z. W. Siebert, Crestline ; E. R. Stockwell, Mechanicsburg ; L. Smalley, Londenville ; W. J. Torrence, Cleveland ; W. H. Turner, Norwalk ; D. H. Udall, Columbus ; D. S. White, Columbus ; I. A. Wynn, Kenton ; W. B. Washburn, Tiffin ; W. E. Wight, Pittsburg, Pa.

This number, together with the veterinary students of the University, made an assembly any State association could be proud of.

Quite a large amount of correspondence was read ; but that relating to the American Veterinary Medical Association meeting in Ohio during the present summer, was the only matter of real importance. After the reading of letters relating to this meeting and discussion *pro* and *con*, it was duly moved, seconded and carried, that at this session we do not follow the regular order of business. As soon as this motion was disposed of it was moved, seconded and declared carried unanimously, that we invite the American Veterinary Medical Association to meet in Ohio for its next annual session. It was then duly carried, that we invite them to meet in the city of Cleveland. After this last motion had carried, Dr. Newton (who had been delayed) arrived ; and stating his regrets at being late, especially as he had literature and figures relating to Put-in-Bay as an ideal convention meeting place, away from city noise, and on a cool lake, etc., easy of access for Detroit, Toledo, Cleveland and Sandusky, from which cities clinical material could be brought by boat, hotel rates very reasonable and all the people would be quartered in one hotel. Clinics would be held in a seated amphitheatre in the open air, or under canvass. Entertainment for the ladies would be plentiful and of a most enjoyable character. Cleveland was now withdrawn, but as Dr. Shepard stated that veterinarians of Cleveland had already started to solicit funds for the entertainment of the Association and Cleveland having been once selected, members hardly knew what to do, and finally

compromised by naming both places and allowing the American Association committee to select. A committee was appointed to solicit funds and a subscription paper at once started. Motion was made, seconded and carried that this Association, independent of members' subscriptions, donate two hundred dollars to the committee on entertainment, for use, in case the American Veterinary Medical Association selects Ohio as its annual meeting place for 1905.

The Special Committee on Legislation rendered its report verbally through Dr. Blattenburg, its theme being failure to accomplish anything, except expense account and a good sized attorney bill, with the knowledge of causes that led to failure, which in itself he thought would be valuable on another trial.

The Committee on Veterinary Progress, composed of Drs. Sisson, Sheets and Shaw, next rendered their report. The Chairman, Prof. Sisson, reporting on veterinary literature that had appeared during the year, and Dr. Sheets reporting on therapeutics and preventive medicine.

DR. SISSON'S REPORT ON VETERINARY LITERATURE.

"The following is a partial list of the principal veterinary works in English, German and French which have appeared during the past year:

"(1) *Anatomy of the Horse* (J. McFadyean).—This is a second edition of Prof. McFadyean's well-known dissection guide. There has been practically no change in the subject matter, but a few illustrations, chiefly from Ellenberger and Baum's text-book, have been added.

"(2) *Comparative Anatomy of the Domesticated Animals* (Chauveau).—A new edition (the 5th, French) of this well-known work, with the collaboration of Arloing and Lesbre. Just issued and copy has not yet arrived; hence I cannot offer a review at this time.

"(3) *Text-book of General Pathology for Veterinarians and Students* (Prof. Dr. Th. Kitt).—The only thoroughly scientific and up-to-date work of the kind in existence, furnishing a synoptical statement of modern conceptions of disease processes. Contents: Introduction defining the scope and method of the subject; a brief historical review; congenital and inherited diseases; course and termination of diseases; circulatory disturbances; metabolic disorders; regressive and necrotic processes; reparative and neoplastic changes; functional disorders. It is much to be regretted that we have no

work of this kind in English, since it cannot be denied that a fair knowledge of general pathology is prerequisite to an understanding of clinical medicine and surgery. Without it the clinician is simply groping in the dark much of the time.

"(5) *Handbook of Meat Inspection* (Dr. R. Ostertag; translation by Dr. E. V. Wilcox).—This is the first English translation of the recent fourth German edition of Ostertag's work, the most extensive and authoritative on the subject in any language. While written primarily for inspectors, it must be remembered that meat inspection consists for the most part of applications of pathological anatomy, and as such a work of this kind necessarily contains very much of general interest. Thus 150 pages are devoted to invasion by animal parasites and somewhat more space to infection by plant parasites. The general practitioner is often called upon to supply expert information in sanitary matters and is sometimes thereby placed in a rather embarrassing position, as these inquiries often involve matters not touched upon in the lectures of the curriculum a decade ago. Doubtless many of you have found yourselves in a somewhat unpleasant predicament in such cases and could find no authoritative information to relieve the situation. This gap in our bibliography is now filled.

"(6) *Outlines of Meat Inspection* (R. Ostertag. 7th Ed.).—An excellent compendium, showing the master hand of the great hygienist in the concise treatment and clear arrangement of material carefully selected. One might indeed desire somewhat further treatment of some differential anatomical features. If well translated, edited with judgment, and amplified in some directions, it would fill a serious gap in our list of text-books. It is very well illustrated.

"(7) *Text-book of Special Pathology and Therapeutics of the Domestic Animals* (Friedberger and Fröhner, 6th Ed., 2 Vols.).—This work is already too well known to require any extended statement. It has been for years the standard authority on the theory and practice of veterinary medicine in Europe and will soon be available to those who can read English only. It was a serious misfortune that its introduction to American readers was through a wretched translation of the somewhat antiquated French edition. Fortunately we have now Captain Hayes' excellent authorized translation of that part which treats of the 'Infectious Diseases' and are promised the remainder shortly.

"(8) *The Diseases of the Ox* (2d Ed. 637 pp. Prof. Dr.

Dieckerhoff, one of the greatest veterinary clinicians of recent days.)—Contents : General diagnosis with special attention to anatomical and physiological peculiarities. Classification of diseases : (a) Infections and intoxications ; (b) parasitic diseases ; (c) general nutritive diseases ; (d) organic diseases.

"(9) *The Common Colics of the Horse* (H. Caulton Reeks, F. R. C. V. S.).—It is a source of great satisfaction when a busy practitioner who also is a careful observer, finds time to record cases and publish the results of his observations. In doing this Mr. Reeks has made a valuable addition to our clinical literature, and his work should find a place in the library of every progressive veterinarian. Without wishing at all to detract from the merits of the work, a few minor criticisms may be permissible. It does not seem likely that general agreement would be found in this country with his view that œsophageal intubation in gastric tympany is hardly likely to come into general use. Nor would most practitioners here indorse the use in such cases of eserine in large doses. Some of the anatomical statements do not agree with the reviewer's observations, and the figure of the stomach on page 12 cannot be considered satisfactory. The statement that 'it may be taken as a rule that in any case where the pelvis contains other bowels than the last portion of the rectum the practitioner has a case of a dangerous nature to deal with,' is surely to say the least a misleading one ; since it would be rare to find the rectum or bladder sufficiently distended to exclude both pelvic flexure and small colon. But the work deserves careful reading and justice cannot be done it in a brief review.

"(10) *Text-book of Materia Medica for Veterinarians and Students*, 6th Ed. (Prof. Dr. E. Fröhner).—Probably no one knows better than Prof. Fröhner how to write a text-book for students. In this new edition we have further proof of his skill in the fact that he has been able to reduce the work by nearly 100 pp. without material loss in its contents. At the same time he has carefully sifted the numerous new remedies and has included only those of real value—a very genuine service to the busy practitioner.

"(11) *Diagnosis of the External Diseases of the Domestic Animals*, 4th Ed. (Prof. Dr. H. Moller).—Now ten years since the third edition was published. Contents : Description of handling of animals in diagnosis ; diagnostic methods—inspection, palpation, auscultation, smell. Clinical aspects of inflammation—wounds, ulcers, fever. Then follows a brief résumé of

the symptoms of the diseases of various regions, special attention being paid to those of the limbs, which produce lameness. This latter section is the most interesting part of the book and is of great value to the young practitioner in a field which offers so many difficulties in diagnosis.

"(12) *Handbook of Veterinary Surgery and Obstetrics*. Edited by Bayer and Fröhner. In this international series have appeared: 1. Diseases of the foot (exclusive of pododermatitis, diseases of the cartilages, and canker). A. Lungwitz. Contents: Anatomo-physiological considerations; hoof mechanism; forms and causes of ring formation; object and effect of shoeing; the results of open and closed shoes, especially the latter; relation of weight of shoe to movement; deformities. Uses of protective applications—solutions of continuity. 2. Diseases of the foot of the horse (except those of the hoof). Prof. Dr. Eberlein. This treats particularly of pododermatitis, including calk injuries, nail wounds, burning, frost-bite, balling, stone bruises, abscess, fistula, prolapse, neoplasms, etc. It would seem that the author has laid himself open to the criticism of unnecessary repetition of pathological changes and symptoms, yet it must be admitted that his treatment of the various topics is very thorough and on the whole clear and accurate.

"(13) *Operative Course for Veterinarians and Students* (Dr. W. Pfeiffer.) Third Edition.—This new and enlarged edition of Pfeiffer's useful little work will be welcomed by practitioners as well as students, since it is an excellent epitome of the more common surgical operations. It is especially instructive in regard to neuterectomies and cryptorchid castration and is well illustrated. It is known chiefly by Dr. Williams' translation in this country.

"(14) *Surgical Operative Technique for Veterinarians and Students* (Dr. O. Röder).—A useful compendium of operative surgery, written in concise style, giving briefly the necessary anatomical facts and instructions for performing the usual operations. Contains many practical hints gained from the author's long experience.

"It would be an unpardonable omission to neglect to mention the excellent publications of the Bureau of Animal Industry, which are a distinct credit to the Bureau and the profession.

"It is gratifying to record that such progress has been made in a literary way that our book shelves may now contain most of the information desired in English. It may, however, not

be out of place to indicate some gaps still unfilled. The most evident are: 1, A text-book of general pathology; 2, a work on obstetrics—of the animals other than the cow; 3, a text-book of anatomy—descriptive and surgical, amply illustrated. (Remark, Ellenberger and Baum's atlas promised.) 4, a text-book of general surgery; 5, a text-book of diseases of the foot; 6, a text-book of meat inspection—for the use of students—*e. g.*, like Ostertag's abridged."

DR. F. F. SHEETS' REPORT ON THERAPEUTICS AND PREVENTIVE MEDICINE.

"Pursuant with the request of the Chairman of your Committee on Veterinary Progress, Dr. Sisson, that I take that portion of the report embraced under therapeutics and preventive medicine, I submit what I realize should be prepared with more thought and research than I have been able to devote to this very important part of the Association work.

"To the profession, progress occurs as a most significant term, not because it is symbolic of achievements accomplished, nor because we are in a field yielding abundantly for the labor of trained and researchful minds, but there is a most apparent need of acceleration in rate of general progression, in bacteriology, in therapeutics, in fact in all branches of professional ethics and requirements.

"When the realization of this fact becomes general among the profession, this clamor for military, civil and social recognition will cease, as do all movements for which no need exists.

"As it no doubt occurs to the average practitioner, serum-therapy, while it has a field, no doubt, beyond present comprehension, appears to justify our attention rather as a prophylactic agent than because of what we can accomplish in the presence of established disease.

"As a diagnostic agent, popular recognition is accorded in those dormant and stealthy diseases whose attack could otherwise be revealed with difficulty or not at all. Prof. Nocard has expressed his belief in the potency of repeated malleinations as an agent towards resolution in combatting glanders. His first demonstration occurred in 1897. Later he experimented with four cases, allowing three to live four years and another three, in each case repeating the treatment during those periods from four to twelve times. When animals were killed no virulence of lesions could be demonstrated either by microscope, by culture method in special media, or by inoculation by approved

methods of the peritoneum of guinea-pigs, thus proving to Nocard's satisfaction the possibility of recovery. Dr. Olof Schwarzkopf, veterinarian of the U. S. Army in the Philippines, reports on sixty-seven cases, I believe, which reacted in the initial diagnostic injection in 1901 and 1902. These animals were subjected to the so-called "Nocard Treatment." Thirteen with symptoms subsequently fully developed of either glanders or farcy character were later destroyed from that total originally infected. Fifty-four were returned to their respective troops in apparent health and all remaining so with a single exception, which succumbed later to the disease. Dr. Schwarzkopf, who would seem to be a competent man, says in speaking of men who are careful and thoughtful in this kind of work, 'surely for such men a glanders outbreak has little of its former terrors left.' So much for glanders, and yet withal not sufficient for any single purpose except to stimulate additional resource.

"From the Continent comes a theory of tubercular immunization of cattle by injection of dry culture of human tuberculosis diluted in a physiological solution of sodium chloride into jugular vein, the treatment to be an attenuated one. Such a possibility would seem to necessitate the successful contradiction of Koch's theory as to the possibility of the communication of the infection between man and animal. However, that idea would have never gained consideration from men of science had it not originated from so eminent a man. Thus far the 'Bang System' seems to have met with popular acceptance for the practical eradication of the disease.

"Again, we seem to be face to face with tetanus and caught again with our armament rusty and so nearly useless that we realize the importance of research, which we hope may develop something that can prove at least some of the potencies of what has been claimed for the myriads of therapeutic agents which have been administered heretofore. Nor would we deny the prophylactic character for what we already have, but in practical use some of us are speculating as to whether the requisite amount of care is exercised in the preparation of tetanic antitoxin or why it occurs that we find its action so inconsistent.

"A recent London veterinary periodical chronicles the return of Dr. Koch from labors in South Africa, by which he claims to have produced a serum, which combined with virulent lymph acts as a really effective vaccine to be used in combatting that disease we vaguely recall as South African horse disease.

"Among those things which have attracted attention is the

continued success of the oxygen treatment in parturient pare-sis; some form of this treatment has come into general use. Some appropriating what might be called a normal solution of oxygen obtained through a colored bottle and injected into mammary gland by means of a bulb syringe. Many find this simpler process of inflation for obvious reasons quite as satisfactory. It has been suggested that there is an analogy existing in the pathological condition of this toxic condition and that claimed to occur in azoturia, thus giving rise to the hope that additional progression may be accomplished in the profession with that disease.

"As for the subject of dietetics, as it might be treated by this committee in a general way, the experiments with the use of molasses and blood-meal or in some cases a combination of the two are at least productive of very favorable reports, but the preparation of much of this character of food stuff has drifted into proprietary provinces. Indeed, there is an English firm who exhibited 'before and after' photographs showing the reconstruction taking place in a debilitated London cart horse. A sort of sanitarium is conducted in London for this purpose.

"The promotion of the sale of a tube of some special design has recently revised at least a proprietary interest in œsophageal intubation. The promoters originally claimed initiatory honors in the use of this means of gastric irrigation. However, one of our associates has clearly proven priority in the use of the tube for such purposes and we are hoping Dr. Gribble will demonstrate its introduction at our clinic."

REPORT OF COMMITTEE ON DISEASES.

The Committee on Veterinary Diseases, composed of Drs. Fischer, Myers and Ruby, rendered their report through their Chairman, Dr. Fischer. This report was largely in the form of charts, which were illustrated and explained by means of a stereopticon, and has been published as a State document.

THE REPORT OF THE COMMITTEE ON CLINICS AND ARRANGEMENTS

was rendered verbally by Dr. Brunley, who stated that plenty of clinical material was on hand and that a banquet had been arranged for, and requested all who intended to partake of this latter to subscribe their names; only one or two of those present failed to do this.

REPORT OF THE SECRETARY.

The Secretary next read his report of work done during the year, as follows:

"*Mr President and Fellow-members :*

"The year just passed has been a very busy one, in so far as the duties of Secretary of this Association is concerned; in fact, many times more than any previous year since we have had the honor of holding this office. When we tell you that the Secretary has sent 1,480 letters since our last meeting, you will have some idea of what this work was; we admit some was assumed without actual authority of the Association, but which we thought would be to its benefit.

"The expenses for the year have been on somewhat the same ratio, for where usually these have been from \$35 to \$40 per year, the past year they were over \$250, but all readily accounted for.

"At your last session you ordered a donation of \$15 to the Nocard Memorial Fund. The same was forwarded and the receipt is in our hands. You also ordered the Constitution and By-laws re-codified and 500 copies printed and each member to be mailed a copy. That this was done, you all know, and have most likely carefully examined your copy. For the printing of these By-laws we solicited bids; and they were printed at a price which, with the cost of all correspondence and distribution added, was less than four cents a copy. While they have some minor faults, one thing you will all appreciate, and which to bring about caused us plenty of correspondence, is the fact that all subjects of like nature come under the same head, that no page must be turned to finish any article and that no section is split and put parts on different pages. When writing and placing the matter for each separate page we fully expected the Constitution to have been printed in larger type than the By-laws; this explains why those pages do not seem full. You also appointed a committee and ordered attempted legislation; and by special resolution added your Secretary to this committee and made him secretary of it. Through some oversight this fact seems to have been forgotten, and your Secretary did not know where, or when, the committee met, until notified of its expense account; so as Secretary of the Committee on Legislation we have no report to offer; simply call your attention to our part of the work. (1st) Every veterinarian we had the address of (graduate or non-graduate), was mailed a copy of the

proposed law, and he was requested to assist in its passage. Immediately we were swamped with letters, protests against the law, the principal being the date of its going into effect. The Chairman of your committee was notified and at a later meeting they changed this date and then notified us of the change. This again necessitated our writing to tell of the change, to be followed by another batch of explanations. This correspondence, with such a great number of Ohio veterinarians, with such diversified opinions of what the law should be, revealed to us that we had been a little premature and probably foolish in attempting any change in legislation without taking considerable time in advance, to educate, as it were, those interested in its passage : while as matters stood, all the work had to be done in less than two months. Men, who had they understood the proposed law, would have been favorable to it, were the hardest fighters against it, while dozens of others, yes, members of the Association, were extremely lukewarm. We must first formulate a law, take time to explain its requirements and expectations ; and when so understood, it will not be necessary to coax, or cajole, those interested to work for its passage. Let us hope that the \$150 added to our expense account, was not spent in vain ; even though our proposed law died in committee. While the work on this law was going on, we took the liberty of writing to veterinarians, not members of this Association, soliciting funds to meet expenses. One reason for doing this, was to ascertain how much interest veterinary surgeons of Ohio (outside the Association) had in the matter, and this can usually be measured financially. Of 116 letters written we received a goodly number of replies, mostly containing *advice* but in only four was there any of the required ammunition, and that in all amounted to \$10. Gentlemen, I ask you, does that look like passing a law ; does it look as if they wished one ? As soon as this proposed law was defeated, and looking into the future, we decided that if all eligible veterinarians of Ohio would comply with the present law and obtain a State certificate, we would have that many more favorable fighters in the field next time ; so we wrote to all eligible, whose names we could find, soliciting them to appear before the State Board of Veterinary Examiners and present their credentials or be examined. We may be allowed some pardonable pride in the result, as it was a success. Some ill-feeling was shown at this meeting, because the examiners would not accept diplomas granted since a certain date ; and some veterinarians having such diplomas refused

to comply with an examination. Without argument as to the Board's action, we submit to you a list of the questions asked at this particular examination, and ask you is it possible *any* graduate could be fearful of the result : *State Board Examination, April 12, 1904.* 1. Describe the stomach of the ox. 2. Give the dose, horse and cow, and use of the following drugs : Opium, morphine, aloes, strychnine (subcutaneously), carbolic acid (crystals). 3. Give the chemical formulæ for hydrochloric acid, water, saltpetre, silver nitrate, and common salt. 4. Differentiate between (a) a vesicle, (b) pustule, (c) abscess, (d) hæmatoma, (e) tumor. 5. Give the cause, symptoms, and treatment of hæmoglobinuria in the horse. 6. What is the object of respiration ? 7. Give the symptoms of rabies in the horse, ox, and dog. 8. Describe the stages of croupous (fibrinous, lobar) pneumonia in the horse. 9. Give the relationship between the cattle tick (*Boophilus bovis*) and the disease Texas fever. 10. Give in detail the operation to reduce a ventral hernia in a colt.

"The American Veterinary Medical Association has not as yet decided upon a meeting place for August, 1905; and we have reason to believe that Ohio would be an acceptable State in which to meet. Let us invite them to some of our cities, and not be afraid because of expensive entertainments previously seen. If our invitation be accepted, let us give them the pleasure of a scientific, professional meeting : and don't let us invite them to cross the continent for a theatre party or a boat ride, so that when they leave us they will say, 'we had a devil of a good time ;' but rather, 'we have learned many things at this session that will be of benefit to us in our chosen profession.'

"We would call your attention to another matter ; probably some one will say, 'it's none of your business.' In the annual catalogue of a firm who proudly boast that they are 'the oldest veterinary surgical instrument house in the West,' and who cater for your patronage by stating that 'our stock is by far the largest and best assorted in the country,' you can find considerable else to interest you. You open the front cover and there staring you in the face is 'take off your hat to a most remarkable medicine, its year of jubilee has come ; it soaks down through the muscles and cures the hurts of anything that walks.' You open the back cover and there 'save your cows,' it goes to the root of the trouble and cures abortion, barrenness, scours, removes retained after-birth and caked udder, etc. You notice a bright yellow display page and, lo, your fortune's made ;

you can buy a remedy 'that is a quick and sure cure for all cuts, abrasions and old sores, will heal a cut quicker than anything else, hairs the skin out and leaves no scar; while it will arrest the development of spavins, ring bones, curbs and thoroughpins,' and the same firm (wonders never cease) will sell you 'the only remedy that cures colic and leaves no inflammation; and is guaranteed to cure.' Turn the page and read 'ye choicest product of ye olden time, good for man' and beast, and see also an 'infallible cure for all ordinary horse afflictions; absolutely removes curbs, splints, spavins, wind puffs; \$1.00 per package; ' see the salve 'that cures scratches, galls, sores, bruises, cuts, and has been in use by veterinary surgeons for twenty-five years; ' pass on to the great Eastern remedy that 'kills a spavin, curb or splint, and relieves stiff joints and sore tendons immediately,' then comes that remarkable oil that 'has been in use for half a century and never failed to give relief.' We have dog remedies and hog remedies, balsams and stock foods without number, etc.; but to cap the climax is a letter over the firm's own signature, and used as part of one of these advertisements admitting they solicited the advertisement for insertion in that catalogue. Gentlemen, ought we not to protest, and if no notice be taken then adopt other means: these catalogues do not go to the general public, and it is unnecessary to flaunt the red flag in our faces.

"I hope I have not tired you with my somewhat rambling report, and that our session may be an enjoyable one, so as to repay those who have striven to make it so."

"POST-MORTEM DIAGNOSIS OF RABIES."

It was proposed before the election of officers that we listen to an illustrated lecture by Dr. J. McI. Phillips, subject: "Post-Mortem Diagnosis of Rabies." This lecture was especially interesting and instructive, more so from the fact that Columbus has been lately having quite an epidemic of the disease among dogs. Not only was the post-mortem changes of the brain illustrated by lantern slides, but the cadaver itself was on hand. Dr. Phillips is an enthusiast on this subject, and, while many questions were asked, he did not tire in his efforts at answering them. We regret that his remarks were not in writing so that they could be published.

ELECTION OF OFFICERS.

Next followed the nomination and election of officers; but as there was but one nominee for each respective office, this was

soon disposed of ; and the Chair declared the following to be the officers for 1905 :

President—W. E. Clemons, Granville.

Vice-President—Sept. Sisson, Columbus.

Treasurer—T. B. Hillock, Columbus.

Secretary—Wm. H. Gribble, Washington C. H.

Censor—O. V. Brumley, Columbus.

The Board of Censors is composed of Drs. O. V. Brumley, E. H. Shepard, J. D. Fair, with the President and Secretary.

A communication was read from Dr. Burneson asking to withdraw his membership, as he now resided in Illinois. Upon motion the same was granted with the request that his membership would be acceptable at any time should he again see fit to reside in Ohio.

Moved that we now adjourn to meet at the Great Southern Hotel at 8 p. m. Banquet. Carried. Met at the hotel in good time with only one or two absent. Over sixty sat down to the tables, and a most enjoyable inexpensive session was had ; for session we call it, because after indulging in the several courses of good things edible, we listened to an entertaining talk by Dr. J. V. Newton, "Twenty-seven Years' Experience as a Veterinarian." Then Dr. W. J. Torrence, who never fails to interest and instruct, exhibited several novel and original ideas, accompanying each with full description of its uses, etc. Among them was a "catheter cover"—simply a piece of rubber hose of the required length and size, into which the catheter is slipped. A "common 5-cent tack puller," to be used as a wolf tooth elevator. Just "ice tongs" to attach to any place when you wish to swing a horse and cannot find a place to attach the pulley. A "hand drill" as a sinus searcher, instead of using a trephine (this surely was practical). Demonstrated the use of "raw hide thongs" as a tourniquet where it was almost impossible to make anything else stay fast. The doctor has his common cards (small) with their reverse printed same as a statement, so that he could hand a patron his card and at same time statement of account as a reminder.

This was followed by a paper from Dr. C. B. Frederick.* This led to the oft discussed topic of the symptoms of so-called colics with their numberless causes and cures ; but what a pity with cures galore that so many such patients go to make fertilizer ; at least mine do. Dr. J. H. Blattenburg read a paper en-

* Will be published in a later number of the REVIEW.

titled "The Original Habitat of the Horse," after which we adjourned to meet at 8 A. M. with not a dissenting voice but that our banquet session had been a practical professional success.

WEDNESDAY, JANUARY 18.

Met again at the Ohio State University. Meeting called to order by President D. S. White at 9.00 A. M.

Chair called for applications for membership and the same were prepared for the Board of Censors, and a recess taken to allow for the collection of dues and for the examination of the credentials of the applicants.

Meeting being called to order, the Secretary reported that twelve applications had been received and examined by the Board of Censors, ten of which they recommended to membership, being as follows: Geo. W. Kinsey, C. V. C., '91, Mt. Pleasant; L. Smalley, C. V. C., '89, Loudonville; W. C. Holden, N. Y. C., '80, Delphos; E. L. Price, O. V. C., '93, Circleville; E. R. Stockwell, O. V. C., '98, Mechanicsburg; W. H. Turner, O. V. C., '90, North Amherst; Norton Dock, O. S. U., '03, Columbus; E. L. Metzger, O. S. U., '01, Louisville; L. Maynard, O. S. U., '04, Columbus; M. C. McClain, O. V. C., '86, Jeromeville.

Moved and duly seconded that if there be no objections to any of the veterinarians whose names have been read, the rules be suspended and the Secretary cast the ballot of the Association for their election. Carried. Those of the newly elected members who were present each in turn made his little maiden association speech.

READING OF PAPERS.

Dr. J. D. Fair read a paper, "Practical Obstetrics.* This was an able effort and one backed by much experience, as Dr. Fair's home is the centre of a good breeding district. This paper was not discussed as much as us *country doctors* would have liked.

"Dr. I. A. Ruby followed with a paper on "Azoturia,"** and if Dr. Ruby is not original, no one is, not in the sense that he is original in diagnosis and treatment but in the originality of his methods of description of cases, making a dry, threadbare subject one of intense interest and some amusement. Of course his subject could have been debated until now; and we rather guess it is, if two or more gather together.

* Published elsewhere in this number of the REVIEW.

Dr. W. A. Axby gave us a very scientific and scholarly essay entitled "Open Articulations,"* followed by a record of cases bearing directly on his subject. This was a paper appreciated by all; it showed the writer's knowledge of his subject, as well as his pride of preparation when giving to others a good, practical everyday treatment for a difficulty dreaded by most veterinarians. This paper was well debated, though several present objected to the use of peroxide of hydrogen, as it carried germs to all parts of a joint.

Dr. W. E. Clemons gave a little address, subject "Sterile Air for Milk Fever," and exhibited the instrument he uses, one of his own make. It is similar in construction to others, only much larger, so allows the use of so much more sterilized cotton.

Dr. H. Fulstow exhibited the photograph of a horse with large sub-maxillary tumor, and also the tumor itself. It was eight or nine inches in diameter and weighed over ten pounds, evidently an haematoma. Successfully removed and horse at work.

Dr. W. R. Howe made what he calls a written suggestion on "Purpura Hæmorrhagica,"* but I assure you the debate was longer than the suggestion.

This was followed by a paper of especial interest to the veterinarian located in a breeding district, especially so in these days of so-called contagious abortion, where this condition is so prevalent, viz., "Retained Placenta,"* by Dr. S. D. Myers. This paper was well debated; opinions varying greatly, as to the proper time of removal, as well as the amount of mechanical force that could safely be used.

TREASURER'S REPORT.

The Treasurer reported receipts of \$138.00, with expenses of \$253.34, leaving a balance on hand of \$360.70.

It being now long after noon, we adjourned for half an hour for lunch, to meet at the veterinary hospital for clinics.

Reconvened as per adjournment.

CLINICS.

Prof. D. H. Udall operated for poll-evil. Dr. W. R. Howe used an electro-cautery. Dr. Fulstow performed ovariotomy on a mare. Dr. W. H. Gribble demonstrated naso-gastric intubation. Dr. W. J. Torrence demonstrated the practical use of a

* Published elsewhere in this number of the REVIEW.

small drill in searching for pus in the sinuses, passing the drill in six or seven times before locating pus, and it penetrated as easily as a pin into a piece of cloth.

Different neurectomy operations as well as some minor surgery were performed and we became so interested that several missed the trains they had intended to use.

The question of a semi-annual meeting was discussed, but in view of the American Association meeting in Ohio this matter was dropped.

The newly elected officers were now seated and President Dr. W. E. Clemons appointed the following committees:

Committee on Veterinary Diseases, Paul Fischer, W. A. Axby, J. H. Blattenburg.

Committee on Veterinary Progress, F. F. Sheets, F. E. Anderson, J. V. Newton.

Committee on Arrangements, O. V. Brumley, H. W. Brown, C. E. Leist, L. W. Carl, and T. E. Jones.

After votes of thanks to those most instrumental in making this session such a success, we adjourned.

Wm. H. GRIBBLE, *Secretary.*

CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting was held at Bridgeport, Tuesday, August 1st, 1905.

The clinic was held at Dr. R. D. Martin's hospital, at eleven o'clock.

The first case was an old setter dog, with a large tumefied swelling inferior and close to anus. Upon opening and exploring the enlargement a sarcomatosis development of the prostate gland was discovered. The case was found to be inoperable, and the animal was destroyed.

The second case was a large gray horse with a bad case of stringhalt. Operated on by Prof. Williams, assisted by Dr. Bushnell. The seat of operation was washed, shaved, and disinfected, then anæsthetization was produced with a solution of Stovaine, after which the tendon of the peroneus muscle was severed near its union with the tendon of the extensor pedis muscle.

The third case was for median neurectomy. The horse was placed on the operating table, seat of operation washed, shaved,

disinfected, and anæsthetization produced with solution Sto-vaine; Prof. Williams, assisted by Dr. Loveland, operated; here Prof. Williams demonstrated his method of inserting a form of "stitch," for securing a bandage or dressing, in difficult places.

There were several more cases to be operated on, but owing to the short time left for the business meeting, after the banquet, and the members getting anxious for refreshments, it was decided to adjourn to "Steeplechase Island," where the members and their friends, numbering forty-one, enjoyed an excellent dinner.

After dinner the tables were removed, and the business meeting was called to order by the President, Dr. J. H. Gardner, at 3.45 P. M.

The following members responded to roll-call: Drs. C. L. Adams, Thomas Bland, H. E. Bates, F. F. Bushnell, H. C. Balzer, G. T. Crowley, B. K. Dow, J. L. Devereau, G. T. Elliott, J. H. Gardner, F. A. Ingram, L. B. Judson, J. H. Kelley, P. T. Keeley, R. P. Lyman, J. F. Laden, G. W. Loveland, R. D. Martin, G. F. McGuire, G. H. Parkinson, E. C. Ross, J. S. Schofield, H. L. Tower, J. E. Underhill, H. Whitney, C. R. Witte, A. C. Knapp, W. J. Southey. Dr. Wm. Herbert Lowe, Secretary Veterinary Medical Association of New Jersey; Dr. R. W. Ellis, business manager of the REVIEW, New York City; Dr. Dimock, and veterinary student Mr. Schofield, also three or four others, whose names the Secretary was unable to obtain.

Minutes of the previous meeting were read, corrected and approved. The Secretary had no report to make. The Treasurer's report was read and accepted. The Board of Censors reported favorably on the applications of Drs. W. J. Southey and A. C. Knapp, and they were elected to membership. The application for membership of Geo. R. Smith was presented, vouched for by Drs. Ross and Whitney. The application was referred to the Board of Censors, for investigation.

Under the head of new business, upon the motion of Dr. Loveland, it was voted to instruct the Secretary to incorporate the names of the members in the programme of the semi-annual meetings in the future.

Dr. Lyman, Chairman of the Committee on Legislation, reported the work which the committee had done in securing the Registration Law. The committee was tendered a rising vote of thanks for their labors. It was voted to discharge the committee and lay the report on the table.

Dr. Ingram called the members' attention to a list of veteri-

narians whose names were registered in the office of the Massachusetts Cattle Bureau, and whose certificates of the tuberculin test would be accepted by that board. Dr. Ingram stated he had applied to the Massachusetts Cattle Bureau asking them to place his name on the list of veterinarians of this State and accept his certificates of tuberculin test, but his request had been refused. He read a letter from Dr. Peters, Chief of the Bureau, giving a list of the veterinarians in Connecticut whose papers would be accepted. Considerable discussion followed Dr. Ingram's remarks. Several of the members thought the Bureau was discriminating against some of the members of the Association, others thought the Bureau did not intend to discriminate against any members of the Association, but was not posted as to all members who were qualified to make the test. Prof. Williams was asked to give his opinion on the matter. In his reply Prof. Williams said he felt sure the Massachusetts Bureau did not mean to discriminate against any veterinarian, or any members of the Connecticut Association, whom the Bureau were satisfied were thoroughly competent and reliable. He said the Chief of the Bureau must protect the interests of the Bureau, and had no better way of doing so than in being careful in designating who and who not could test cattle to be shipped into that State. He further said he believed that if any veterinarian in Connecticut who wished to have his name on the list kept by the Massachusetts Bureau would get some official in the State whom he knew to vouch for him, Dr. Peters would gladly accept his test and certificates. The matter was finally disposed of by adopting the following: *Resolved*, That the Secretary send Dr. Peters a list of members of the Association, and we, the Association, believe these members competent to perform the tuberculin test. And ask him to give this list his consideration.

The President inquired of the Chairman if the Board of Censors had completed the report on the F. G. Atwood case. Dr. Bland, Chairman of the Board, said the Board had given Dr. Atwood's petition careful consideration, and read the finding of the Board thereon. With the report the following resolution was recommended: " *Resolved*, By this Association, that the petition of Frank G. Atwood praying for a reconsideration of the vote by which he was expelled from this Association, be and the same is hereby denied." The signatures of the full Board were attached. It was voted unanimously to adopt the report and resolution of the Board of Censors, and the Secretary was directed

to send a copy of same to Dr. Atwood and one to his attorney.

It was voted to place the following names on the list of honorary membership in the Association: Dr. N. S. Mayo, Cuba; Dr. William Herbert Lowe, Paterson, N. J.; Prof. W. L. Williams, Ithaca, N. Y.; Prof. A. Liautard, Paris, France; Dr. R. W. Ellis, New York, N. Y., and Heman O. Averill, Commissioner on Domestic Animals, Washington Depot, Conn.

Voted that this Association adopt resolutions thanking Judge Walter H. Clark for his services in securing the passage of the Veterinary Bill.

Voted that the President appoint a committee of three, to draft suitable resolutions on the death of Dr. N. Tibbals, a former member, and report at the next meeting. President Gardner appointed Drs. Whitney, Ross, and Bland.

A vote of thanks was tendered Drs. Lowe, Ellis, Williams and Martin for their assistance in making the meeting a success.

At six o'clock it was voted to adjourn to Dr. Martin's Hospital, where Dr. Ellis, at the special request of Dr. Martin, demonstrated his Twentieth Century Dental Float.

B. K. Dow, *Secretary*.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

The fourteenth annual meeting of this Society will take place at Ithaca, September 12, 13, and 14, and the following splendid programme has been furnished by Dr. S. H. Burnett, who is acting for Secretary Wm. Henry Kelly, now in Europe:

FIRST DAY—TUESDAY, SEPTEMBER 12TH.

9.00-10.45 A. M. Clinic in the operating room.

11.00 A. M. Business session in the amphitheatre.

2.00 P. M. Clinic in the operating room.

7.30 P. M. Literary programme in the amphitheatre.

SECOND DAY—WEDNESDAY, SEPTEMBER 13TH.

9.00 A. M. Literary programme continued.

2.00 P. M. Literary programme continued.

7.30-10.00 P. M. Informal reception at the Veterinary College. Inspection of laboratories and exhibition of specimens.

THIRD DAY—THURSDAY, SEPTEMBER 14TH.

9.00 A. M. Clinic in the operating room.

2.00 P. M. Visit to the University Campus and buildings.

PAPERS AND DISCUSSIONS.

- "Glanders and Mallein," H. D. Gill, New York City.
"Experiments with Mallein," E. B. Ackerman, Brooklyn.
"Dr. von Behring's Bovovaccine as an Immunizing Virus," Claude D. Morris, Binghamton.
"The Negri Bodies and the Diagnosis of Rabies," Cassius Way, Ithaca.
"Empyema of the Facial Sinuses of the Horse," W. L. Williams, Ithaca.
"The Action of Chloroform on the Respiratory Tract of the Horse," P. J. Axtell and N. D. Backus.
"A Simple Operation in Minor Surgery," W. B. Switzer.
"A Case of Dystokia in a Cow—Monstrosity," Frank J. Baker.
"A Horse with Fractured Skull with Paralysis of Muscles of Deglutition," R. C. Reed.
"Glycogen in the Muscle of the Horse," S. H. Gage, Ithaca.
"Arecoline Hydrobromate," Howard J. Milks.
"A Case of Myxedema in a Dog," R. C. Reed.
"Examination of Horses for Soundness," J. E. Ryder, New York City.
"Hydrothorax—Case Report," Roscoe R. Bell, Brooklyn.
"Urethral Calculus—Case Report," P. A. Fish, Ithaca.
"Clinical Examination of the Blood of the Cow," M. C. Thompson and W. W. Dimock.
"The Dental Formula of the Horse," G. S. Hopkins, Ithaca.
"Clinical Examination of the Blood in Veterinary Practice," S. H. Burnett, Ithaca.
"A Study of the Bursæ of the Posterior Limb of the Horse," R. W. Gannett.
Subject not yet announced, James Law, Ithaca.

CLINICS.

Clinics will be held on the morning and afternoon of the first and the forenoon of the third days. The exact character of the cases cannot be announced at this date; but surgical operations under anaesthesia will constitute a prominent feature. The reputation of the Society for excellence of clinic will be maintained. There will be plenty of interesting cases for operation and an abundance of competent operators.

HEADQUARTERS.

Sheldon Court, at Heustis Street entrance to the Campus. The Cayuga Heights *via* Campus Street cars pass this building.

Meals may be obtained near Sheldon Court. A number of student lodging houses will receive members of the Society for lodging. Meals may be obtained nearby.

The REVIEW is requested by Dr. W. L. Williams, who is in charge of the clinic, to invite and urge all veterinarians not too distant from Ithaca to contribute interesting cases to the clinic. If they will communicate with Dr. Williams he will aid in transportation and other essentials.

CORRESPONDENCE.

NO MAL DU COIT IN MONTANA—A CORRECTION.

HELENA MONTANA, Aug. 24, 1905

Editors American Veterinary Review:

DEAR SIRS:—On page 457 of the August REVIEW, there appears a statement said to be from a telegram dated Lethbridge, N. W. T., stating that mal du coit was imported into Canada by a stallion brought from Montana. Will you do me the kindness to correct this statement? I am in a position to authoritatively say that we have never had mal du coit in Montana; therefore, it would have been impossible for the Canadian North West to have gotten the disease from our State.

Very truly yours,

M. E. KNOWLES,
State Veterinarian.

DR. RAMACCIOTTI SHOWS HIS APPRECIATION OF FRATERNAL COURTESIES IN HIS RECENT AFFLICTION.

OMAHA, NEB., Aug. 29, 1905.

Editors American Veterinary Review:

DEAR SIRS:—Permit me through the columns of the REVIEW to express my heartfelt thanks to the members of the Missouri Valley Veterinary Association who so graciously remembered me during the meeting held in Omaha in June, by calling to inquire concerning my health and offer words of cheer, and who so generously gave me a beautiful gold headed cane. The daily use of this valuable present serves to constantly remind me of the fraternal goodfellowship which prevails among the members of the Association; it continually deepens my appreciation of their thoughtfulness and increases my obligation to them one and all. Respectfully yours, H. L. RAMACCIOTTI.

NEWS AND ITEMS.

TREATMENT OF THE OSTRICH.—Dr. J. A. Edmonds, veterinarian to the South Pasadena Ostrich Farm, lately treated an ostrich for hydrothorax by performing paracentesis thoracis and drawing off several pints of fluid. The bird made a nice recovery. When it becomes necessary to give an ostrich a cathartic, the doctor administers two ounces of aloes and a drachm of calomel. He has tried eserine without perceptible effect, notwithstanding he has given as high as five grains in a few hours' time.—(*Western Veterinarian*.)

DR. W. A. CONNOLY, of 1125 South San Pedro Street, Los Angeles, Cal., has recently completed and occupied a new and complete infirmary. It is two stories high and has a frontage of 50 feet; it contains 11 box stalls and 6 singles, besides a colic stall 18 feet square; a fine operating room fitted with the latest pattern of table and lighted by both side and sky lights; a fine large office and pharmacy, a commodious bedroom for the night man, besides bathroom, toilet, and large harness room. It is floored throughout with cement except in the box stalls, the floor of the single stalls being covered with removable plank sections which enable flushing of the cement beneath, insuring a sanitary place in every particular.

DR. SALMON BLAMELESS.—The following special dispatch from the regular Washington bureau of the New York *Herald*, published in its issue of Aug. 31, will be no surprise to the profession: "Dr. D. E. Salmon, chief of the Bureau of Animal Industry of the Department of Agriculture, has been exonerated by Secretary Wilson in connection with charges that he was in partnership with George E. Howard, a Washington printer, who furnishes by contract the government labels used in the inspection of meat. The man who investigated the charges reported that Mr. Howard paid notes to Dr. Salmon from profits which Mr. Howard received from the label company, which was organized on the strength of contracts obtained from the Bureau of Animal Industry. It is also announced that the charge that in his administration of the meat inspection service Dr. Salmon favored the packing houses of the Beef Trust as against those of independent packers has been officially investigated. The inquiry has been in charge of G. P. McCabe, solicitor of the Department of Agriculture, who has been nearly a month at work on the report, which caused Secretary Wilson to make public this official comment to-day:—'Inquiry discloses

the fact that Dr. Salmon had an unfortunate connection with the firm of George E. Howard & Co. While this connection was not an ideal relation for a government officer to have with a firm doing business with the department, I am convinced that Dr. Salmon never intended to profit by work done by Mr. Howard for the Department of Agriculture, and that he has never been connected with the Howard Label Company or received any benefit from the contract of that company with the department. The action of the department regarding the meat inspection service was as fair, considerate and comprehensive as the appearance would warrant. The case does not seem to call for further disciplinary action.' Solicitor McCabe's report details a partnership formed in 1895 between Mr. Howard and Dr. Salmon, under the name of George E. Howard & Co., to publish a poultry paper and to engage in a job printing business. Dr. Salmon put in \$800 and Mr. Howard contributed the paper. Mr. McCabe says the partnership expired in December, 1900, but was not formally dissolved until July, 1901. Mr. Howard gave Dr. Salmon two promissory notes, one of \$11,545.46 for his interest in the business, and another for \$11,934.83 in payment of advances made by Dr. Salmon. On the first note payments were made extending over nearly three years until, on August 10, 1903, Mr. Howard paid to Dr. Salmon \$17,787.64 for the final payment on both notes. Mr. McCabe reports that Mr. Howard, in June, 1902, obtained the contract for meat inspection labels of the Bureau of Animal Industry and supplied many millions of them at \$1 a thousand, which price was subsequently reduced to eighty cents, and then to sixty-five cents. 'An exhaustive examination of the check books, deposit slips, the books of the directors and stockholders and a large proportion of the original stock certificates,' the report says, 'fails to show that Dr. Salmon now holds, or ever has held, any stock, either directly or indirectly, in the Howard Label Company, or that he has benefited financially from the organization or business of the company, except as stated. Upon the books of the firm of George E. Howard & Co., under date of October 14, 1901, there appears an item of \$230 cash paid by Mr. Howard to Dr. Salmon. Neither Mr. Howard nor Dr. Salmon is able to recall the circumstances of this transaction.'"

FILLING AN ELEPHANT'S TOOTH.—Lena, biggest elephant of the Hippodrome herd, had a tooth filled yesterday afternoon, and she liked the operation no better than a human being does. She roared and bellowed until those watching thought the

building would fall down, and at intervals she sent a small army of men with hooks and ropes sprawling all over the stage of the place ; but eventually a liberal dose of chloroform had its effect, and she lay comparatively quiescent until \$43 worth of gold had been pounded into defective molar. Lena is nineteen years old, eight feet tall, and weighs a trifle more than two and three-quarter tons. It required one pound of chloroform and two ounces of chloral to anaesthetize her. W. W. Powers, owner of Lena, noticed three weeks ago that there was something wrong with her. Ordinarily mild mannered, she became suddenly violent, and often put the lives of her attendants in jeopardy. Peter Barlow, an authority on elephants, found that Lena was suffering from an ulcerated tooth. She refused to take food and showed that she was enduring much pain. Dr. Martin G. Potter, of No. 138 East Twenty-fifth street, who knows all about the ailments of animals, was called into conference, and he found that Lena had an ugly and painful abscess of a tooth, due chiefly to a cavity about an inch deep. He recommended an operation, and Powers reluctantly consented. It was performed on the stage of the Hippodrome yesterday afternoon, in the presence of perhaps fifty persons, including physicians, animal trainers and newspaper men. Lena knew something painful was going to happen. She paced the stage like a human being with the toothache, tossing her trunk and letting out bellows that could be heard a block away. When Dr. Potter and his assistants went for her she fought vigorously. After a time, however, Powers and Robert Tyler, her keeper, contrived to make her lie down, and half a dozen workmen with stout ropes and pulleys fastened her to the floor. Then Dr. Potter, assisted by Dr. S. S. Field and Dr. W. E. Young, all of whom are skilled veterinarians, framed a funnel of pasteboard, covered with absorbent cotton, and through this administered the chloroform. Lena fought desperately. Although seemingly tied down securely she wriggled out of the ropes with ease and rose to her feet, carrying the physicians up with her on her back. Another half hour was needed to get her prostrate again, and then the doctors pumped the anaesthetic into her as fast as they could—so fast, indeed, that several of them were nearly overcome themselves. Dr. Potter then, with huge instruments, pounded the gold into the tooth, finishing the job in a very few minutes. Lena was a little wobbly on her feet after the operation, but seemed to be much more at ease.—(*New York Herald*, Aug. 22.)

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table will be found the dates, places of meeting, and Secretaries' names and addresses of all the Veterinary Medical Associations of the United States and Canada. Secretaries are requested to see that their organizations are properly included in the list.

Name of Organization.	Date of Next Meeting.	Place of Meeting	Name and Address Secretary.
American V. M. Ass'n.....	August, 1906.	.....	J. J. Repp, Phila., Pa.
Vet. Med. Ass'n of N. J.	Jan. 11, 1906.	Trenton.	W. H. Lowe, Paterson.
Connecticut V. M. Ass'n.....	.....	.....	B. K. Dow, Willimantic.
New York S. V. M. Soc'y....	Sept. 12-13-14.	Ithaca.	W. H. Kelly, Albany, N.Y.
Schuylkill Valley V. M. A. ....	.....	.....	W. G. Huyett, Wernersville.
Passaic Co. V. M. Ass'n.....	Vacation.	Paterson, N.J.	H. K. Berry, Paterson, N. J.
Texas V. M. Ass'n.....	.....	Dallas.	A. E. Flowers, Dallas.
Massachusetts Vet. Ass'n.....	Monthly.	Boston.	F. J. Babbitt, Lynn, Mass.
Maine Vet. Med. Ass'n.....	.....	.....	C. L. Blakely, Augusta.
Central Canada V. Ass'n.....	.....	Ottawa.	A. E. James, Ottawa.
Michigan State V. M. Ass'n.....	2d Tu-Wed Feb	Lansing	Judson Black, Richmond.
Alumni Ass'n N. Y.—A. V. C.	April, 1900.	141 W. 54th St	W. C. Miller, N. Y. City.
Illinois State V. M. Ass'n.....	Feb. 15, 1906.	Decatur.	W. H. Welch, Lexington, Ill.
Wisconsin Soc. Vet. Grad.....	Call of Pres't.	Sheboygan.	S. Beattie, Madison.
Illinois V. M. and Surg. A.	Call of Com.	Champaign.	J. M. Reed, Mattoon.
Vet. Ass'n of Manitoba.....	.....	.....	F. Torrance, Winnipeg.
North Carolina V. M. Ass'n.....	.....	.....	T. B. Carroll, Wilmington.
Ontario Vet. Ass'n.....	.....	.....	C. H. Sweetapple, Toronto.
V. M. Ass'n New York Co.	1st Wed. Oct.	141 W. 54th St	D. J. Mangan, N. Y. City.
Ohio State V. M. Ass'n.....	January, 1906.	Columbus.	W. H. Gribble, Wash'n C.H.
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh.	F. Weitzell, Allegheny.
Missouri Vet. Med. Ass'n.....	.....	.....	F. F. Brown, Kansas City.
Genesee Valley V. M. Ass'n.....	.....	.....	J. H. Taylor, Henrietta, N.Y.
Iowa State V. M. Ass'n.....	January, 1906.	Ames.	H. C. Simpson, Denison, Ia.
Minnesota State V. M. Ass'n.....	.....	.....	J. G. Annand, Minneapolis.
Pennsylvania State V. M. A.	Sept., 10.	Wilkes-Barre.	C. J. Marshall, Phila.
Keystone V. M. Ass'n.....	2d Tues. Sept.	Philadelphia.	C. J. Marshall, 2004 Pine St., Phila.
Colorado State V. M. Ass'n.....	1st Mon. in June	Denver.	M. J. Woodliffe, Denver.
Missouri Valley V. Ass'n.....	.....	.....	B. F. Kaupp, Kansas City.
Rhode Island V. M. Ass'n.....	3d Thursday	Providence.	T. E. Robinson, Westerly, R.I.
North Dakota V. M. Ass'n.....	June and Dec.	Fargo.	E. J. Davidson, Grand Forks
California State V. M. Ass'n.....	January, 1906.	San Francisco	P. H. Browning, San Jose.
Southern Auxiliary of California State V. M. Ass'n.....	Mch. Je. Sep, Dc	.....	.....
South Dakota V. M. A.	Jan. Apl. Jy, Oct.	Los Angeles.	H. D. Fenimore, Los Angeles
Nebraska V. M. Ass'n.....	.....	.....	E. L. Moore, Brookings.
Kansas State V. M. Ass'n.....	.....	.....	A. T. Peters, Lincoln.
Ass'n Médécale Veternaire Francaise "Laval,".....	1st & 3d Thur. of each month.	Topeka.	Hugh S. Maxwell, Salina.
Alumni Association A. V. Col.	April each yr.	Lect. R'm La-val Un'y Mon.	J. P. A. Houde, Montreal.
Province of Quebec V. M. A. ....	.....	New York.	F. R. Hanson, N. Y. City.
Kentucky V. M. Ass'n.....	.....	Mon. & Que.	Gustave Boyer, Rigaud, P.Q.
Wolverine State V. M. Ass'n.....	.....	.....	D. A. Piatt, Lexington.
Washington State Col. V. M. A.	Vacation.	.....	W. W. Thorburn.
Ohio Valley V. M. Ass'n.....	.....	Pullman, Wa.	Wm. D. Mason, Pullman.
Iowa-Nebraska V. M. Ass'n.....	Evansville, Ind.	J. W. Moses, Mt. Vernon, Ind.
Louisiana State V. M. Ass'n.....	A. T. Peters, Lincoln, Neb.
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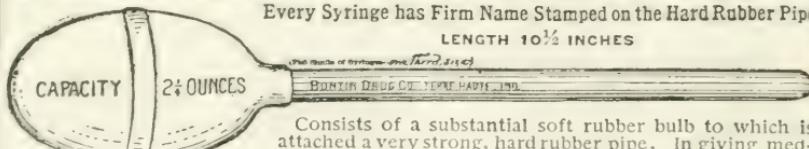
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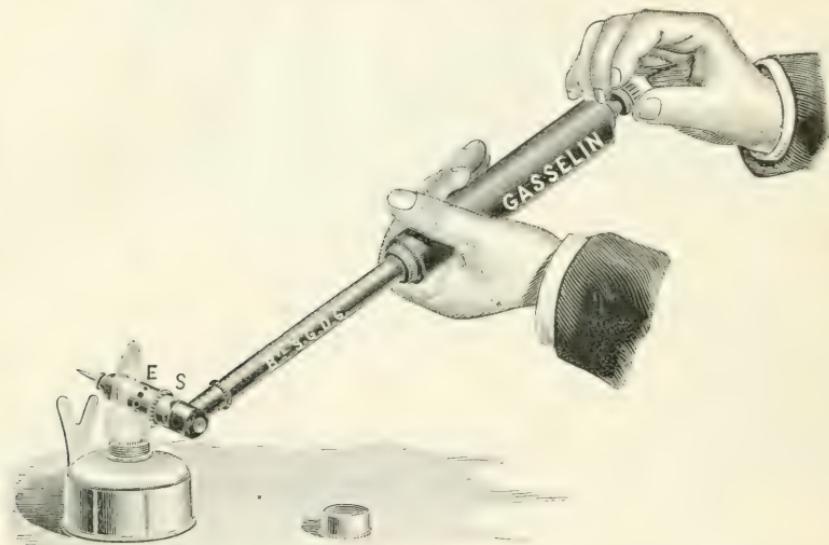
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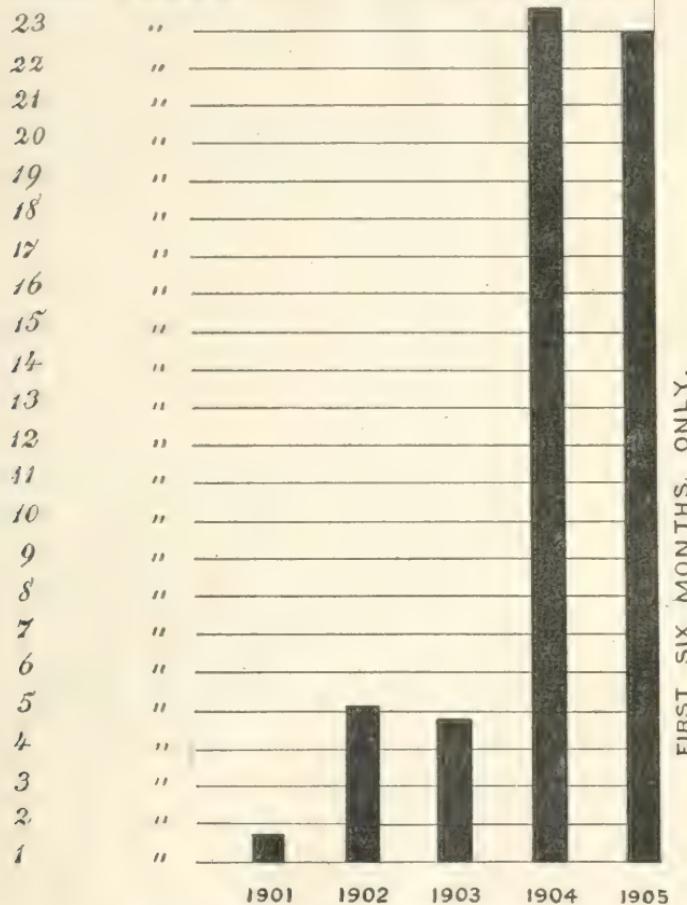
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